



Extensive list of vinyl LP's for sale - most in pristine near mint condition from my personal collection - classical, jazz, pop, etc.

Ask for list if interested.

ORDERING INFORMATION

- *Mail to: 262 Back Road, Brooklin, ME 04616
- *Phone (207) 359-2049 or email <mpercy@mac.com>
- * You may call at anytime but we are usually unable to answer the phone, so email is preferred. Sorry no customer pickup at our office.
- *\$25.00 minimum order exclusive of shipping!
- *PayPal, Check/MO in advance
For PayPal please add 3% fee to offset fees charged us
We cannot accept credit card payments directly.
- *\$8.00 flat rate minimum shipping charge per order USA
We ship almost exclusively by insured Priority Mail. UPS or Federal Express is available at additional cost, which may be significant.
- *International customers, inquire about shipping costs (\$8.00 minimum).
- *Maine residents add 5.5% state sales tax!

I maintain a very good inventory of virtually all products listed and make every effort to ship orders promptly, usually within 2 - 3 days, occasionally longer if business is particularly heavy or your order requires termination or other preparation. If your need is immediate write & highlight "urgent" outside the envelope on mailed in orders! If you wish to contact me by phone, please accept my apologies in advance, as the current volume of business leaves me very limited time to answer the phone, email is much preferred. Check our web page frequently for catalog updates! www.percyaudio.com.

INTERCONNECT & SPEAKER CABLE

- *CANARE Video/Digital Coax: LV61S, 75Ω, 21pF/foot, black 6mm D, best buy quality digital/video use... 60¢ foot (50'+ less 10%, 100'+ less 20% any Canare cable)
LV61S terminated with Canare's own 75Ω RCA, F, or BNC's (requires special crimp tools), add \$24.00 per cable (two ends installed), specify connector type!
L5CFB Video Coax: Highest performance 7.5mm D 75Ω, foil shield + braided copper shield... 95¢ foot ("F", BNC, 75Ω RCA, add \$24 for two ends installed)
- *CARDAS AUDIO: The models below are available as bulk wire, and our sales are limited. to these items All Cardas cable products utilize the highest possible purity copper litz multistrand multi-gauge construction with Teflon insulation. Crosslink cables feature polypropylene insulated enameled high purity copper stranded conductors.
2 x 21.5ga: Two Teflon insulated conductor bundles with a tinned copper spiral wrap shield, dark blue, 5mm D... \$3.95 per mono foot
Crosslink 1i Interconnect: Entry level Cardas 17.5ga double shielded 8mm D cable using their patented Constant Q Golden Section stranding... \$7.95 mono foot
Crosslink 1S Speaker cable: Entry level 10ga four conductor 9.5mm D cable featuring 120 discrete strand tubular Crossfield pure copper construction... \$8.95 mono foot
SE 15 blue PVC jacketed dual concentric design with 2 multi strand 15ga litz outer layers spiraled in opposite directions and separated by Teflon tape from 2 multi strand counter spiraled 15ga litz inner layers - optimized as a speaker cable for single ended amplifiers, but would also make a good internal speaker hookup wire... \$7.50 per foot
- *KIMBER: High purity 5/9 copper and 5/9 silver interconnect & speaker cable designs, chassis wires for rewiring the inside of components are listed on page two.
~~8TC~~: ~~9ga. speaker cable made from sixteen (8+ & 8-) runs of the Teflon insulated varistrand 19ga Kimber TCSS braided together...~~ \$19.00 per mono foot
4vs: 13ga/eight wire weave... \$4.20 ft. (some 4' to 10' short lengths of 4PR and 8TC available at significant discount - ask)
TCSS-3BRD "PSB": three wire braid of the Teflon insulated 19ga 7 strand TCSS - commonly used to make the high performance/low cost "PBJ" interconnect... \$6.10 ft.
GO-TCSS: four wire "GyroQuadratic" braid of the Teflon insulated 19ga 7 strand TCSS, for line level and moderate speaker level applications... \$8.75 per foot
Both TCSS braids are very easily terminated with the Vampire #557 RCA's for a low cost, high performance cable pair, with only minimal soldering skills required.
KC-1: Shielded version of the PSB interconnect, useful where an unshielded cable cannot be used, 45pF foot... \$10.50 per mono foot
- *MOGAMI 2534: Four conductor (24ga) 6mm D shielded microphone cable OFC Neglex copper, excellent for low cost interconnects... \$1.59 per foot
- *XLO HT MP3 Stereo "Y": High quality adaptor cable featuring an XLO HT 3.5mm stereo mini-plug on one end and a pair of male XLO HT RCA plugs on the other. Use to connect your laptop or MP3 player to the RCA audio inputs of your home audio system. 2.0M @\$49.00 "special", one available

CHASSIS WIRE

Acrotec: 99.99997% (6N) purity stress free copper wire from Nippon Mining, Japan

*40µ (4.2Ω/ft.) copper wire with polyester varnish insulation. Excellent wire available for rewiring tonearms or any application given a sufficient number of paralleled strands. For most tonearms parallel about 15 ccw wound strands of this 46ga wire, or use fewer for ultra delicate applications, ... 85¢/foot, deduct 10% for 100+ feet, 20% for 250'+.

Cardas chassis wires: A Teflon jacketed 6N copper multi-strand litz design drawn between ceramic rollers in a nitrogen atmosphere and enameled to prevent oxidation.

*9.5ga/\$3.65 per foot *11.5ga/\$3.35 per foot *15.5ga/\$1.95 per foot *17.5ga/\$1.75 per foot *20.5ga/\$1.50 per foot *23.5ga/\$1.50 per foot

We stock two colors in each of the gauges above, typically red and black, depending on availability, so specify your preference for one or two colors.

*33ga... For rewiring tonearms, an industry standard for this application, specify white, red, blue, green, black colors (no preference we'll give black)... \$1.50 ft.

*2 x 21.5ga... Two conductors plus shield, 5mm overall diameter, excellent budget interconnect or shielded chassis wire, blue... \$3.95 ft.

~~*2 x 24ga... Two conductors plus shield, 3mm D, 45PF foot shielded, superb for shielded super flexible tonearm cables, blue... \$3.95 foot (while supplies last)~~

*4 x 24ga... 3.5mm diameter shielded four conductor version of the wire described above, blue... \$11.95 foot *4 X 33ga... 2.5mm D shielded 4 conductor... \$6.95 foot

*Single strand enameled wire... The individual urethane enameled "magnet wire" strands used to build all other Cardas wire & cable, sold in fixed length or weight spools.
18ga/100' @\$24 29ga/100' @\$7 & \$250' @\$16 31ga/100' @\$6 & 250' @\$14 33ga, 35ga or 37ga 30-50gr @\$18 38ga, 39ga... please inquire

All Teflon insulated Cardas chassis wires are tested to 5000 VDC, superb for use inside electrostatic speakers or any high voltage application. These enameled wires require a hot soldering iron (800°F+, broad tip) or a solder pot. Deduct an additional 10% for 100'+ of any individual wire gauge except single strand litz.

Kimber TCSS: 7 strands of 3 gauges comprising a 19ga. TFE insulated 5N copper, specify white/black/red/green/blue/yellow/clear... \$1.30¢ ft. (100'+ @\$1.15 color mix ok)

Kimber TCX: 15ga. cable formed from three uninsulated TCSS bundles contained within a single TFE jacket, specify black/green/red/blue... \$4.65 ft.

Kimber SF23: 2:1 ratio 23ga flat KS Intrinsic copper wire with clear V-Teflon insulation... \$3.65 per foot (100'+ deduct 10%) (two silver wires below - closeout pricing)

Kimber AGSC: AGSC solid core 25ga silver with clear V-Teflon insulation... \$19.95/foot (closeout special - retail is \$27.50 now)

Note 4N = 99.99% (.9999) & 6N = 99.9999% (.999999)

26ga solid core copper: cotton wrap, drawn from cast copper rod, cryo treated, uncertified 6N purity @\$1.15 per foot

21ga stranded copper: cryo treated 6N OHNO with XLPE crosslinked polyethylene insulation, red & black colors available @\$2.95 per foot

Solid Core Silver: For all insulated gauges listed, deduct 10% for 50' and 15% for 100' or more per gauge 30ga (.9999) uninsulated @\$0.75 ft

34 ga (4N) clear Teflon @\$3.95 foot 28ga (4N) cotton wrap @\$2.00 ft. 28ga (4N) silk wrap @\$3.15 ft

26ga (5N) silk wrap @\$3.95 23ga (4N) cotton wrap @\$5.75 ft.

Cardas uninsulated silver wire, drawn through diamond dies, reduction oven annealed, superb quality silver .99999 (99.9999%) claimed purity after annealing

26ga @\$1.95 23ga @\$5.50 19ga @\$12.50

Cardas bare silver gauges are intermittently available and silver prices are in constant flux - please always confirm our stock and price before sending funds. no quantity breaks for now.

Wonder Wire: A proprietary design high performance 19ga solid core, silver clad high purity copper with a unique crystal structure, uninsulated... 75¢ per foot

Insulated type with a special high voltage (9000VDC) clear dielectric... \$1.25 per foot Deduct 10% for 100'+, 20% for 250'+ any type Wonder Wire.

Headshell leads: Audioquest silk wrapped pure copper litz, 1-5/8" long with gold plated cartridge clips... \$18.95 set/four

Cardas 33ga with gold plated PCC-EG economy clips @\$30/four 33ga with Ag/Rh plated PCC-ER clips @\$52/four 33ga with premium PCC Ag/Rh clips @\$73/four

BRAID, TUBING, HEAT SHRINK

Copper Braid: Finely stranded tinned copper tubular braid suitable for shielding audio signal carrying wire against RFI and electro-magnetic interference:

1/16" (48 x 36ga)/35¢ foot 1/8" (120 x 36ga)/55¢ 1/4" (384 x 36ga)/95¢ foot 3/8"/\$1.15 foot 1/2" (528 x 36ga)/\$1.75 foot

Deduct 10% for 50+ feet, 20% for 100'+ per individual size. If you intend to cover cu braid with poly mesh braid, use poly one size larger and add 10% length.

Polyester Mesh Braid: Provides a neat finished appearance and insulation over cable assemblies shielded with copper braid or as an attractive covering for bundled wires and wire harnesses of any type, will expand about 50% over nominal diameter with good coverage, tight weave type, solid black color. Please note that you may require length of this product beyond the actual dimension of the wire you are covering. As the braid is expanded it shortens. This is especially a consideration for the larger sizes, e.g. a length of the 1-1/4" braid will only cover about 70% of its length measured flat when expanded to cover a cable with 1-1/4" diameter. Best to order extra length.

1/4" @45¢ per foot 3/8" @75¢ per foot 1/2" @1.05¢ per foot 3/4" @1.25¢ per foot 1-1/4" @\$1.75 per foot Deduct 15% for 50'+, 25% for 100'+ per size.

Fiberglass Cloth Sleeving: Soft, flexible, completely opaque black tubular sleeving, exceptionally nice appearance, my first choice for power supply umbilicals or short ravel free coverings inside components, choose diameter carefully as this type will not expand, excellent for extreme temperatures, will withstand 500°C

1/8" @35¢ foot 1/4" @50¢ foot 3/8" @95¢ foot 1/2" @\$1.65 foot 3/4" @\$1.75 foot 1" @\$2.95 foot Deduct 15% for 50'+, 25% for 100'+ per size

Meltable Inner Wall Semi-rigid Polyolefin Heat Shrinkable Tubing: This is a 3:1 ratio heat shrink which is rigid enough to provide substantial support for any type of encapsulated connector-capacitor-adaptor etc. assembly or strain relief for cable-connector junctions, black color only.

1/4" @\$2.75 per foot 3/8" @\$3.00 per foot 1/2" @\$3.50 per foot 3/4" @\$5.75 per foot 1.0" @\$6.95 per foot packed in one foot long sections

Adhesive lined Heat Shrink: Flexible 3:1 ratio heat shrink with an adhesive lining which melts when heated and will bond to most materials providing excellent flexible strain relief, black only... 1/8" @\$1.50 ft. 1/4" @\$1.75 ft. 3/8" @\$1.95 ft. 1/2" @\$2.50 ft. 3/4" @\$2.95 ft. 1" @\$4.50 ft. 1.5" @\$7.95 ft. one foot pieces

Polyolefin Heat Shrink: High quality, high temperature tolerant (not PVC junk!) 2:1 heat shrink for all-purpose application as insulation, strain relief, etc., specify color:

clear, red, or black, sold only in 4' sections, price per four foot length... 1/8" @\$2.00 1/4" @\$2.50 3/8" @\$3.50 1/2" @\$4.00 3/4" @\$5.95 1" @\$6.25

Teflon tubing: High temperature PTFE insulation for component leads, bare wire, etc., milky white "natural" color, 0.012" - 0.015" thin wall for 22ga through 6ga

0.020" standard wall for 4ga and larger - deduct 25% for a 100' spool. 22ga/25¢ per foot 20ga/30¢ 18ga./35¢ 16ga/40¢ 14ga/50¢ 12ga/55¢ 10ga/60¢

8ga (0.129" ID)/90¢ 6ga (0.162" ID)/\$1.10 4ga (0.208" ID)/\$1.60 3ga (0.234" ID)/\$1.95 2ga (0.258" ID)/\$2.25 0ga (0.325" ID)/\$2.50 per foot

CABLE MOUNT RCA

Cardas SRCA: Top of their line 9mm silver/rhodium plated brass, spring reinforced ground contact for long term snug fit... \$27.50 pair
Cardas GRMO: 9mm silver/rhodium plated brass, similar to SRCA but without spring reinforced ground and slightly smaller body... \$22.50 pair
Cardas SLVR: 9mm silver over brass... \$18.00 pr. GSMO: (SLVR with gold shell) @\$16.75 GRMC: 6mm silver/rhodium... \$20.00 pr. AGMO: 9mm all gold plate... \$16.50 pr.
Cardas GRNO: 9mm silver/rhodium plated right angle male for tight clearances behind components... \$25.00 per pair
Eichmann Bullet Plugs: Low mass contact RCA, high performance for cables up to 9mm diameter... ~~gold plate set/4... \$39 special!~~ solid silver contact type... \$75 special
Vampire 800C: 8mm cable size 88% OFC copper with heavy direct gold plating, one piece style + outer black shell (shell slides over cable first), thick splined ground crown with .125"D center pin, .560" long, Teflon dielectric, a superb connector, possibly best available... \$39.95 per pair (retail is \$75)
Vampire 808: 8mm cable size plug similar to 800C in design but gold plated brass, Teflon dielectric... \$19.95 per pair (retail is \$31)
Vampire LRCA: locking type RCA plug, nickel free gold plated brass; for cables to 8mm... \$22.95 pair. (retail is \$30)
Vampire 557 male or 582 female: 5mm cable size plug with spring strain relief, 7mm without spring, black shell, gold plated... \$10.50 pair
WBT: #0144 (9mm) & #0147 (8mm) midline solderable 9mm plug @\$72 per pair, #0101 topline solderable 9mm plug @\$89 per pair
NextGen male and female RCA... ask price Furutech FP-162G @\$14.95 per pair

Cardas & Vampire male and female RCA... deduct 10% for 6+ pair per model, 20% for 12+ pair, 25% for 25+ pair

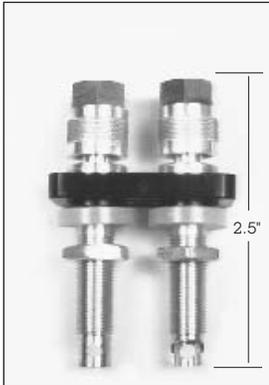
FEMALE CHASSIS MOUNT RCA

Cardas GRFA: Silver/rhodium plated brass (60µ Ag, ≤3µ Rh) Teflon dielectric, outside nut style, requires a 7/16" (.440") chassis hole if used with supplied isolation washers, or a 3/8" hole w/o washers, available in two lengths, standard accommodates chassis to .10" thick, long up to .35"... standard/\$19.95 pair long/\$23.50 pair
Cardas PC Mount: Ag/Rh plated, GRFA-PRT right angle @\$30.00 pr. or GRFA-PS straight @\$26.00 pr. and the dual GRFA-DBL-PRT @\$15.25 per assembly pair
Cardas RCA Caps: Non-shorting caps to cover unused RCA inputs @\$3.60 each or \$43.00/twelve
Kimber: Premium quality brass chassis mount with Kimber's proprietary Ultraplate finish (probably Ag/Rh but Kimber won't say), Teflon dielectric, inside nut mount, tab machined from plug body for direct soldering of grounds, 25/64" body diameter requires .50" hole using supplied isolation washers... \$29.50 pair
Vampire: Our most popular jacks, most feature nickel free gold plating and Teflon dielectric (used by Audio Research and other high-end manufacturers)
CMHx... .310"D brass body, requires 3/8" chassis hole with isolation washers, inside nut mount w/hex outer shape, Teflon dielectric, Cu/Ag/Au plating, \$12.50 pr.
CM1F... .310"D brass body, requires 3/8" chassis hole with isolation washers, inside nut mount w/round outside, Teflon dielectric, Cu/Ag/Au plating, \$12.50 pr.
CM2F... .388"D brass body, requires 1/2" chassis hole with supplied isolation washers, outside nut mount style, Teflon dielectric, Cu/Ag/Au plating, \$15.50 pair
CM1F/CB... .310"D Cu body, requires 3/8" chassis hole with washers, inside nut w/round outside, Teflon dielectric, direct gold over high % OFC \$27.95 pr.
CM2F/CB... .388"D Cu body, requires 1/2" chassis hole with washers, outside nut mount style, Teflon dielectric, direct gold over high % OFC \$33.95 pair
CM7F... .310"D brass body, requires 3/8" chassis hole with isolation washers, inside nut style with hex outer shape, Delrin dielectric, nickel/gold plating, \$10.95 pair
PC mount... Choose PCB2FS straight or PCB2FA right angle mount, also has nut and threaded collar to fit 1/2" chassis hole size, \$17.95 per pair
Double PC mount... Choose PCB2F/AX2 right angle mount, also has nuts and threaded collars to fit 1/2" chassis hole size, \$17.95 each
WBT: #0201 chassis mount style, chassis hole size .475", electroless nickel/gold plate, Teflon dielectric, active spring contact... \$74 per pair #0208 solderless/\$69 pair #0234 right angle pc mount jack, same construction details as model above... \$89 per pair

MISCELLANEOUS CONNECTORS & ADAPTORS

NEUTRIK XLR: Gold or silver plated 3 pin NC3XB type XLR cable mount or panel mount, black shell... \$5.25 each Gold plated assumed if you do not specify silver (all 4p, 5p gold).
4 pin NC4FXB female cable @\$8.50, 4 pin NC4MXB male cable @\$6.50, 4 pin NC4FP-1-B female panel mount @\$8.50, 4 pin NC4MP-B male panel mount @\$6.50
5 pin NC5FXB female cable @\$8.95, 5 pin NC5MXB male cable @\$6.95, 5 pin NC5FP-1-B female panel mount @\$10.95, 5 pin NC5MP-B male panel mount @\$7.95
VAMPIRE XLR: 3 pin black shell XLR cable mount @\$7.50 or panel mount @\$8.95 ea., male & female, direct gold plate copper alloy (except female grounds), 12+ mix deduct 10%
The panel mounts have the same flange size and mounting hole layout as our Neutrik. The cable mounts can be used to easily make RCA/XLR adaptors, ask us how!
XLO XLR: Signature series with direct gold plated beryllium copper contacts, male cable mount/\$10.95 each ~~female cable mount/\$12.95 each~~
VAMPIRE 75Ω BNC & F: 7.5mm solderable cable BNC and 9mm F connectors, gold ... \$14.95 each BNC or F type XLO HT 75Ω RCA: 8.5mm direct gold plate... \$6.95 ea.
Vampire 75Ω PCBNC - right angle pc mount BNC connector @\$8.95 each
1/4" phone plugs: Vampire gold plated mono or stereo phone plug... \$9.50 ea. Neutrik NP2C nickel plated 1/4"... mono/\$3.50 each stereo/\$5.50 each
Neutrik NJ3FP6C-BAG, 1/4" phone socket for mono or stereo application, silver plated contacts, locking type with black rectangular mounting flange... \$7.50 each
VAMPIRE "Y" adapter: A one piece gold plated "Y" adapter (male to double female RCA, one female in line & one at 90° or both females at 90° as in letter F - specify!) ... \$22.95 pair
VAMPIRE 90° adapter: A one piece gold plated right angle adapter with a male and female RCA offset 90° from each other... \$18.50 pair
VAMPIRE double female RCA: A one piece gold plated double female RCA for joining two male terminated cables... \$17.50 per pair
Cartridge clips: Cardas PCC-EG gold, or ES, silver, plated brass clips to fit most cartridges @\$1.75 ea. Kit of four PCC-EG or ES with color coded heatshrink and Wonder Solder... \$8.00
Cardas PCC-ER Ag/Rh plated brass clips to fit most cartridges @\$2.95 each Kit of four PCC-ER with color coded heatshrink and Wonder Solder... \$13.50
van den Hul direct gold plated copper clips... 1.0mm or 1.2mm (fits most) @\$1.95 each
Tonearm connectors: Five pin female tonearm plug with Teflon dielectric, aluminum case... Cardas straight/\$47.95 Cardas right angle/\$75.95 (other male & female types - email)
CARDAS termination box: #CPIB, Black anodized box with Cardas RCA, ground posts, no wire or tonearm plug... \$105 #CPIB-ST, same box with flex lead and tonearm plug \$205
SMC Connectors: 75Ω panel mount male and RG59 cable mount female connectors... SMC male panel/\$7.95 SMC female cable mount/\$14.95
Stereo Mini plug: Oyaide 24K gold plated brass 3.5mm stereo mini-plug with chrome plated brass shell to fit cables up to 6mm D @\$13.50 each
Fischer: 3 pin cable connectors for cables to 8.7mm, used with Cello and other components, male/\$85 each, female/\$93 each
Neutrik PowerCon: AC power connectors, NAC3MPB panel mounts @\$3.95 each, NAC3FCB cable mounts @\$6.95 each
Lemo Camac: Lemo RG58 5mm male cable mount connector @\$17.95 each
Lemo Camac Adaptor: Female RCA to male Camac adaptor (allows RCA cables to be used with Camac inputs) ... \$35.50 each (as shown)





CARDAS BINDING POSTS

CCBP & CCGR machined 1/4" binding post, available in unplated or silver/rhodium plated tellurium copper, (app. 60µ Ag, ≤3µ Rh) with gold plated lock nut. Both are available in two lengths and mounted in a removeable "no turn" black plastic plate to fit .5" holes on standard .75" centers, or as individual posts in a .310" hole. Choose short model to accommodate chassis thickness up to .175", or the long (pictured) for up to .900", an additional .250" gained if used individually without insulators. Deduct 10% for four or more sets. (a stereo set is 4 posts for ± L & R channel) short or long CCBP unplated posts \$49.00 per stereo set (2 prs.) CCGR plated posts \$75/long, \$66/short per stereo set

CPBP insulated posts (not pictured) with low mass contacts to fit spade lugs or bare wire (no bananas), mounts with a single screw, and clamps spade with a single knurled knob, available in a short version for metal chassis, or long for speaker cabinets, specify length and Ag/Rh plated or bare copper... \$52.00 per stereo set Deduct 10% for four or more sets.

BTS ADAPTER converts banana plug to a spade lug -- set of four to fit 1/4" post @\$36.95 or 9mm post @\$52.95

SPADE LUGS, BANANA PLUGS, BINDING POSTS

Audioquest spade: Specify direct gold or silver plate copper, 3/16" or 1/4", opening, all .040" thick for 10-12 ga wire... \$1.25 each (25+ less 10% & 100+ less 15%)
 P-10M spade lug, a heavier duty direct gold or silver plated OFHC 8ga angled spade lug, dual fit for 1/4" & 5/16" post... \$3.25 each (deduct 10% for 12+)

Cardas spade lugs: ① GRS angled two piece spade with separate crimp sleeve, specify 1/4" GRSC bare copper @\$4.25 or 1/4" GRS-R Ag/Rh plated @\$5.50, or plated only GRS-9R for 9mm post @\$6.95 (10+, deduct 10%) ② CCMS premium milled spade lug, specify 1/4" CCMS-C1 bare copper @\$10.95 or 1/4" CCMS-R1 Ag/Rh plated @\$12.95 or CCMS-9C unplated @\$12.95, CCMS-9R plated @\$17.95 for 9mm binding post, or CCMS-S plated only to fit 1/8" barrier strip screw terminals @\$12.00

Cardas banana plugs: A silver/rhodium plated banana with a very durable pin structure. Designed to accommodate a spade lug, bare wire, or you can solder directly to them singles/\$9.95 each duals/\$19.95 each with removable mounting plate to hold them on standard .750" centers. (6+ pair less 10%)

Cardas Magy pin: Quality silver/rhodium plated pin which replaces the connectors used between the xover and panels on Magnepans... \$9 each

Cardas pin connector: Nickel plated angled pin connector with notches, to fit spring type speaker wire receptacles... \$3.40 each

Eichmann Bayonet bananas: Same low mass technology as their RCA connectors, gold plated CuTe... ask for \$\$ Silver over OFC Spade Lugs: .25"/\$12 .3125/\$14

Eichmann CablePod binding posts: Same low mass technology as their superb RCA connectors, gold plated CuTe... ask for \$\$ Furutech FP200BG banana @\$11.95 ea.

Vampire cut rings: #2 ga. gold plated/silver subplate copper ring lug cut to form a spade lug (.360" crimp barrel, .650" overall width, .275" opening)... \$4.50 ea.

Vampire HDS angled spade lug: direct gold plate OFC copper, .405" width for 1/4" post, .072" thick... \$4.95 each (#HDS1 for up to 4ga or #HDS5 for 7ga crimp barrel) This spade lug is also available with a .475" overall width and a .325" opening to accommodate larger diameter binding posts, 4ga wire size crimp barrel... #HDS3 @\$4.95 each #BAR straight version of this spade lug with a .325" overall width and a .165" opening to fit screw terminals... @\$9.95 each light gauge #SS9 to fit 3/8" post @\$2.50 each

Vampire banana plugs: Very sturdy nickel/gold plated solid brass two piece banana plug which can be used with its thumb screw to secure heavy gauge bare wires or pin terminated cables; banana leaves are machined from the body of the plug and will insure a long term tight connection.

#SB Singles are all metal, solderable & stackable /\$18.50 pair #DB (pairs of #SB) in a plastic holder so best not to solder, not stackable/\$35.00 pair (two duals)

Vampire pin connector: Gold plated flat pin for use on speaker cables connecting to spring type receptacles... \$.95 each

Vampire binding posts: Gold plated brass, five way binding posts with removable black plastic mounting plate to fit standard .50"D holes on .75" spacing. With mounting plates the short size will fit chassis thicknesses up to 5/16", long size up to 13/16"... \$39.95 short per stereo set, \$44.95 long per stereo set (four posts and two mounting plates) (4+ stereo sets, deduct 10%, 8+ sets, deduct 20%) BP-1Hex/CB high copper content, direct gold plate (short) @\$89/stereo set

WBT Binding Posts: Nextgen #0710cu 24k directgold plated OFC, stereo set (4)... \$205.00 Nextgen #0710Ag pure passivated fine silver, stereo set (4)... \$379.00

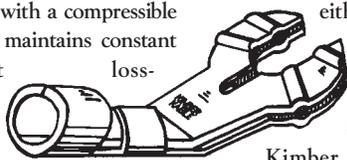
WBT-0763 gold plated midline posts, stereo set (4)... \$140.00 WBT-0715 extensions for WBT-0763 - allows mounting on panels over 1/2" thick... \$345.00 set of four

WBT bananas: lockable design, gold plated OFC alloy... #0600/\$220 set of four #0644/\$152 set of four #0645 angled safety insulated banana/\$152 set of four

XLO/Deltron bananas: Direct gold plated brass, contact fingers machined from body of plug, solderable... \$9.50 pair singles with spring retractable pin shield... \$19.00 pair

Economy locking solderable single bananas from Luminous Audio @\$6.95 pair XLO spade lugs: Direct gold plated copper, specify 1/4" or 5/16" post... \$1.95 each

KIMBER POSTMASTER: A two layer copper spade lug with a compressible wafer fitted between the two contact parts. The wafer maintains constant dynamic pressure on the binding post preventing contact loss due to vibration or temperature fluctuation and binding posts need only be finger tightened. The radial ridges concentrate contact pressure for a gas tight fit. Available



either in unplated copper or with Kimber's proprietary Ultraplate finish, PM-25 fits 1/4" posts, PM-33 fits 5/16" posts, overall width is .535", accepts up to six gauge wire. Supplied with heat shrink & Wonder solder. Specify unplated copper or Ultraplate finish and size.

Kimber Postmaster... \$20.00 per pair

Canare 75Ω BNC & RCA: True 75Ω panel mount female BNC & RCA connectors, to replace the non-75Ω RCA jacks or 50Ω BNC's usually found on digital & video equipment, chassis isolated, available in an R1 style direct chassis mount or RU style bulkhead mount. BNC's have gold plated center pin, RCA's are all gold plate.

And, yes, the 75Ω Canare RCA does sound audibly better on digital components than the much more expensive WBT/Cardas/etc. RCA male or female!

R1-BNC/\$6.95 RU-BNC bulkhead mount/\$9.95 R1-RCA @\$6.95 RU-RCA bulkhead mount/\$9.95 75Ω RCA/75Ω BNC adaptor @\$10.50



(female RCA to female BNC)

RELIABLE CAPACITOR

*Highest quality axial lead film capacitors designed by Richard Marsh, in collaboration with, and manufactured by Reliable Capacitor. Various types are available, including Teflon, Polystyrene, film & foil Polypropylene, and metallized Polypropylene, some using their popular multi-section coaxially wound "MultiCap" construction, others with very high voltage films.

*Nominal tolerance is ±10% (±5% typical), add 50¢ per capacitor for 1% matched pairs (pairs within 1% of each other, absolute value is not guaranteed).

*Exclusively for our customers we have measured for & marked the outer foil lead end of most larger value capacitors with a black dot for optimum orientation. For most series signal path applications I recommend orienting the outer foil lead toward the load, as though the signal were exiting the cap at the end with the dot. For shunt and power supply bypass applications, orient the black dot toward ground. At the very least, observe the same alignment in the left & right channels.

*Deduct 10% for \$250+, 15% for \$500+, any mix of Rel-Caps except TFT & PCU

AudioCap Teflon & Tin Foil (TFT)				AudioCap Polypropylene & Copper Foil (PCU)				
.01µF 200VDC	\$30.75	.21" D x .53" L	10µF 600V	\$50.50	.54" x 1.25"	.10µF 600V	\$35.75	.65" x 1.00"
.01µF 400V	33.50	.21" x .75"	15µF 100V	53.95	.55" x 1.75"	22µF 200V	54.95	.51" x 1.00"
.01µF 600V	36.85	.27" x 1.0"	15µF 600V	77.95	.62" x 1.25"	22µF 600V	66.50	.90" x 1.00"
.022µF 200V	31.35	.25" x .75"	22µF 100V	71.00	.60" x 1.00"	33µF 200V	81.95	.70" x 1.30"
.022µF 400V	35.15	.28" x .75"	22µF 400V	91.25	.57" x 1.25"	33µF 600V	97.95	1.0" x 1.30"
.022µF 600V	39.55	.31" x 1.0"	22µF 600V	102.95	.71" x 1.50"	47µF 200V	105.00	.80" x 1.25"
.033µF 200V	32.50	.28" x .75"	33µF 100V	87.50	.80" x 1.00"	47µF 600V	126.50	1.2" x 1.25"
.033µF 400V	35.75	.28" x 1.0"	33µF 200V	100.50	.55" x 1.25"	68µF 200V	137.95	.98" x 1.25"
.033µF 600V	40.25	.38" x 1.0"	33µF 400V	120.50	.62" x 1.50"	68µF 600V	181.50	1.1" x 1.75"
.047µF 200V	33.95	.32" x .75"	47µF 100V	104.00	.75" x 1.25"	1.0µF 200V	187.50	.93" x 1.75"
.047µF 400V	38.50	.32" x 1.0"	47µF 200V	119.50	.65" x 1.50"	1.0µF 400V	219.95	1.2" x 1.75"
.047µF 600V	42.35	.44" x 1.00"	68µF 100V	182.50	.90" x 1.00"	2.0µF 200V	303.00	1.35" x 1.70"
.068µF 200V	35.75	.31" x 1.00"	68µF 200V	197.50	.70" x 1.50"			
.068µF 400V	40.75	.38" x 1.00"	1.0µF 100V	240.50	1.0" x 1.25"			
.068µF 600V	44.50	.45" x 1.25"	1.0µF 200V	275.00	.82" x 1.50"			
.10µF 200V	40.15	.37" x 1.00"						
.10µF 400V	44.00	.46" x 1.00"						

Teflon & Tin Foil, direct gold plate OFC leads

MultiCap Film & Foil Polystyrene (RTX)				MultiCap Film & Foil Polypropylene (PPFX)				
.01µF 400VDC	\$4.95	.40" D x .80" L	.68µF 400V	\$10.95	.85" x 1.30"	.10µF tin 400VDC	\$7.50	.50" D x 1.00" L
.01µF 600V	6.95	.45" x 1.00"	.68µF tin 400V	18.15	.85" x 1.30"	.10µF tin 600V	9.65	.60" x 1.00"
.022µF 600V	8.50	.55" x 1.00"	.68µF 600V	12.15	.85" x 1.80"	.15µF tin 400V	9.65	.60" x 1.10"
.047µF 600V	8.75	.58" x 1.20"	1.0µF tin 200V	18.15	.80" x 1.30"	.22µF tin 200V	6.95	.50" x 1.00"
.068µF 600V	10.95	.70" x 1.30"	1.0µF tin 400V	38.25	.90" x 1.80"	.22µF tin 400V	10.95	.65" x 1.00"
.10µF 100V	8.75	.45" x 1.00"	1.5µF tin 200V	21.25	.90" x 1.30"	.22µF tin 600V	11.50	.70" x 1.30"
.10µF 400V	9.85	.55" x 1.60"	2.0µF tin 200V	24.15	1.10" x 1.25"	.22µF tin 800V	15.50	.90" x 1.30"
.10µF 600V	13.95	.80" x 1.50"	3.0µF tin 200V	32.50	1.10" x 1.80"	.33µF tin 400V	11.25	.65" x 1.30"
.15µF 100V	10.25	.50" x 1.00"	4.0µF tin 200V	46.65	1.20" x 1.80"	.33µF tin 600V	12.15	.80" x 1.30"
			1.0µF 100V	20.25	.80" x 1.80"	.47µF tin 400V	15.35	.75" x 1.30"
			1.0µF 200V	21.95	1.20" x 1.80"	.47µF tin 600V	17.35	.80" x 1.80"
			1.0µF 400V	\$35.95	1.20" x 2.30"			

Highest quality, very low ESR polystyrene & tin foil construction. Arguably their best MultiCap design

MultiCap Metallized Polypropylene (PPMF)				MultiCap Metallized Polypropylene (PPMT)				
.10µF 200VDC	\$4.60	.37" D x .55" L	.68µF 400V	\$9.95 (\$5.50)	.70" x 1.20"	6.0µF 400V	\$26.75	1.50" x 1.80"
.10µF 400V	5.25 (\$3.20)	.40" x .725"	.68µF 600V	12.65	.80" x 1.30"	7.0µF 200V	19.10	1.00" x 1.80"
.10µF 600V	7.65	.50" x .750"	82µF 200V	6.05	.65" x 1.00"	8.0µF 200V	17.95	1.10" x 1.80"
.22µF 200V	4.65	.80" x .460"	1.0µF 200V	5.80	.60" x 1.00"	10.0µF 200V	23.65 (\$14.25)	1.10" x 2.00"
.22µF 400V	5.45 (\$3.75)	.55" x .725"	1.0µF 400V	10.15 (\$6.50)	.80" x 1.30"	15.0µF 200V	29.15	1.40" x 2.00"
.22µF 600V	8.30	.60" x 1.00"	1.0µF 600V	13.95	1.00" x 1.30"	20.0µF 200V	35.75	1.50" x 2.00"
.33µF 200V	4.85	.50" x .800"	1.5µF 200V	10.50	.70" x 1.00"	30.0µF 200V	88.95	1.60" x 2.80"
.33µF 400V	7.65 (\$4.50)	.60" x 1.10"	2.0µF 200V	8.95 (\$5.50)	.70" x 1.30"			
.33µF 600V	10.15	.70" x 1.00"	2.0µF 400V	13.95	1.10" x 1.25"			
.47µF 200V	5.25	.45" x 1.00"	3.0µF 200V	10.85	.80" x 1.30"			
.47µF 400V	7.65	.65" x 1.00"	3.0µF 400V	19.15 (\$11.50)	1.10" x 1.80"			
.47µF 600V	11.55	.70" x 1.30"	4.0µF 200V	13.70 (\$7.95)	.85" x 1.50"			
.68µF 200V	5.80	.55" x 1.00"	4.0µF 400V	21.15 (\$12.50)	1.20" x 1.80"			
			5.0µF 200V	14.85 (\$8.95)	.90" x 1.80"			
			5.0µF 400V	23.15	1.40" x 1.80"			

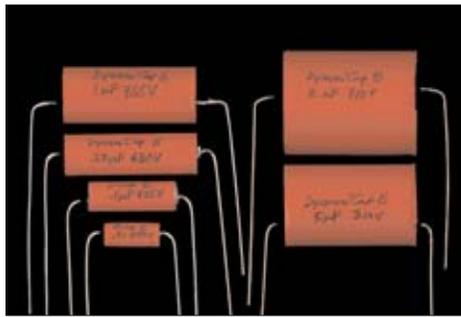
Metallized polypropylene, compact, self healing, moderately priced. Same size lower cost PPMF-2 two section design, priced in (\$...) are now exceptional value. All other MultiCaps except values below 0.10µF are ten sections.

AudioCap Metallized Polypropylene (PPMF)				AudioCap Metallized Polypropylene (PPMT)				
40µF 100VDC	\$40.65	1.5" D x 2.0" L	.47µF 2400V	\$44.25	1.5" x 1.75"	68µF 1000V	22.50	.79" x 1.75"
50µF 100V	47.95	1.6" x 2.3"	.68µF 1500V	32.15	1.25" x 1.75"	68µF 1500V	32.15	1.25" x 1.75"
60µF 100V	52.75	1.6" x 2.8"	1.0µF 1500V	40.65	1.45" x 1.75"	1.0µF 1500V	40.65	1.45" x 1.75"
70µF 100V	59.35	1.6" x 3.3"						
80µF 100V	67.15	1.6" x 3.3"						
100µF 100V	73.65	1.8" x 3.3"						

AudioCap PPMF's are excellent for speaker crossovers and big power supply bypasses. The high voltage PPMT's are superb as coupling caps or for electrostatics. No 1% matches for PPMT type due to limited stock.

Polystyrene & Tin Foil 5% (RT)				Polystyrene & Tin Foil 5% (RT)				
.001µF 600VDC	\$6.85	.25" x .60"	.01µF 600V	\$5.45	.35" x 1.0"	.068µF 200V	\$7.65	.40" x 1.0"
.0015µF 600V	6.85	.25" x .80"	.015µF 200V	4.80	.25" x .75"	.068µF 600V	8.75	.60" x 1.5"
.002µF 600V	6.85	.25" x .80"	.015µF 600V	6.05	.38" x 1.0"	.10µF 200V	7.65	.42" x 1.25"
.0033µF 600V	6.85	.25" x .80"	.022µF 200V	4.80	.30" x .75"	.10µF 600V	10.15	.64" x 1.75"
.0039µF 600V	6.85	.30" x .75"	.022µF 600V	6.05	.45" x 1.0"	22µF 200V	7.90	.55" x 1.50"
.0047µF 600V	6.85	.30" x .80"	.033µF 200V	5.25	.28" x 1.0"	22µF 400V	9.35	.65" x 1.80"
.0056µF 600V	6.85	.20" x .75"	.033µF 600V	6.80	.48" x 1.3"	22µF 600V	13.95	.90" x 1.80"
.0062µF 600V	6.85	.35" x .75"	.039µF 200V	5.25	.31" x 1.0"	33µF 200V	10.75	.60" x 1.50"
.0068µF 600V	6.85	.35" x .80"	.039µF 600V	7.65	.50" x 1.3"	33µF 400V	13.65	.75" x 1.80"
.0082µF 600V	6.85	.40" x .80"	.047µF 200V	5.45	.35" x 1.0"	47µF 200V	13.65	.75" x 1.80"
.01µF 200V	3.70	.21" x .52"	.047µF 600V	7.65	.53" x 1.3"	47µF 400V	15.95	.90" x 1.80"
			.056µF 200V	7.65	.37" x 1.0"	47µF 600V	19.95	1.1" x 2.3"
			.056µF 600V	8.50	.50" x 1.5"			

Very popular sweet sounding Polystyrenes.



TRT DYNAMI-CAP & WONDERCAP

*TRT's superbly transparent DynamiCap design, and a small selection of the previous generation lower cost WonderCaps. DynamiCap features unique construction with metal end caps, and individually hand soldered 19ga silver clad copper Wonder Wire leads. These are the finest metallized capacitors available today.

*Tolerance typically $\pm 5\%$, DynamiCap $\leq .033\mu\text{F}$'s are exotic film & foil construction. WonderCap $\leq .7800\text{pF}$ are polystyrene film & foil. All DynamiCap & WonderCap $\geq .10\mu\text{F}$ and larger values are metallized polypropylene.

*If bypassing DynamiCaps use no more than 1/100 the value of the main capacitor value to avoid spectral overlap. You may find bypassing is not required at all with these very transparent capacitors.

*Two DynamiCap types are available for values $\geq .10\mu\text{F}$, E for coupling and power supplies in electronics, and the L type which is specifically made only for passive crossovers in loudspeaker systems.

*Please specify type E (electronics) or L (speaker) when ordering. Sizes listed are for the highest voltage (larger).

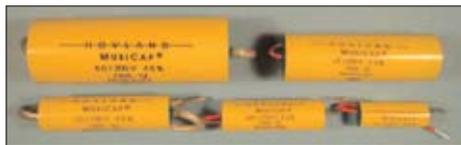
.0024 μF DynamiCap . . .500V - E only . . .24" D x .80" L.	\$20.95
.01 μF DynamiCap . . .500V - E only . . .29" x .65"	\$11.95
.033 μF DynamiCap . . .500V - E only . . .43" x .675"	\$17.95
.10 μF DynamiCap . . .425V-E/310V-L . . .35" x 1.1"	\$13.95
.22 μF DynamiCap . . .630V-E/310V-L . . .48" x 1.6"	\$15.95
.33 μF DynamiCap . . .425V-E/310V-L . . .40" x 1.6"	\$14.95
.47 μF DynamiCap . . .425V-E/310V-L . . .48" x 1.6"	\$15.95
.68 μF DynamiCap . . .310V-L only . . .40" x 1.6"	\$17.95
1.0 μF 425V-E/\$20.95 or 310V-L/\$18.95 . . .70" x 1.6" (E size)	
2.0 μF 425V-E/\$24.95 or 210V-L/\$22.95 . . .1.0" x 1.6" (E size)	

3.0 μF DynamiCap . . .310V-E/210V-L . . .0.6" x 1.3"	\$25.95
4.0 μF 425V-E/\$32.95 or 310V-L/\$27.95 . . .1.4" x 1.6" (E size)	
5.0 μF DynamiCap . . .310V-E or L . . .1.0" x 1.6"	\$31.95
6.0 μF DynamiCap . . .210V-L only . . .0.9" x 1.3"	\$31.95
7.0 μF DynamiCap . . .210V-L only . . .1.0" x 1.3"	\$33.95
10.0 μF DynamiCap . . .210V-E or L . . .1.4" x 1.6"	\$43.95

7800pF 1% Wonder . . .630V . . .350" x 1.00"	\$5.95
0.0233 μF 1% Wonder 210V . . .205" x .535"	\$5.95
.10 μF 10% Wonder . . .425V . . .360" x 1.20"	\$3.75

Deduct 10% for \$250+, 15% for \$750+ mix of values.
Ask about specials on remaining stock of Signature InfiniCaps.

Add 50¢ per capacitor for 1% matched pairs



HOVLAND MUSICAP

*Film & Aluminum Foil Polypropylene capacitors of extremely high quality and musicality for coupling and speaker crossover applications, $\pm 5\%$ nominal tolerance but typically closer so further matching not usually required.

*22ga stranded silver plated Cu Teflon insulated axial lead termination except for items in bold which have 16ga stranded silver plated Cu high current leads for loudspeaker crossovers. Add 50¢ per capacitor for 1% matched pairs.

.01 μF SuperCap . . .1200V . . .45" D x 1.2" L	\$20.50
.022 μF . . .1000V . . .44" x 1.25"	\$10.95
.022 μF SuperCap . . .800V . . .50" x 1.30"	\$21.95
.047 μF . . .1000V . . .55" x 1.75"	\$12.95
.047 μF SuperCap . . .1000V . . .55" x 1.75"	\$21.95
.10 μF SuperCap . . .400V . . .50" x 1.00"	\$21.50
.10 μF SuperCap . . .600V . . .55" x 1.50"	\$21.95
.15 μF . . .400V . . .45" x 1.25"	\$11.95
.22 μF SuperCap . . .600V . . .65" x 2.00"	\$31.95
.47 μF SuperCap . . .400V . . .60" x 2.25"	\$34.95
1.0 μF SuperCap . . .200V . . .75" x 1.80"	\$32.50
1.0 μF SuperCap . . .400V . . .80" x 2.25"	\$37.95
1.5 μF . . .100V . . .70" x 2.00"	\$20.50

1.8 μF . . .100V . . .66" x 2.25"	\$22.50
2.0 μF . . .100V . . .70" x 2.25"	\$23.50
2.2 μF . . .100V . . .75" x 2.25"	\$23.95
2.2 μF . . .200V . . .85" x 2.80"	\$22.50
2.2 μF SuperCap . . .200V . . .90" x 2.50"	\$41.95
2.7 μF . . .100V . . .80" x 2.25"	\$22.50
4.0 μF . . .200V . . .1.05" x 3.00"	\$33.50



Items marked "SuperCap" are the latest Robert Hovland film and foil polypropylene design featuring 22ga PTFE insulated stranded silver leads and a black film outer wrap. More values coming soon.

Deduct 10% for \$250+, 15% for \$500+ mix of values.



SOLEN & AXON CAPACITORS

*Manufactured in France by Societe des Condensateurs Record, 250VDC, 630VDC, 1200V+DC metallized polypropylene, 5% factory specification, but we find most typically measure closer to 2%.

*Excellent economical choice for loudspeaker crossovers & high voltage power supplies, 630V generally have best sonics, 250V are more compact and less expensive. Solen & AÆON have nearly identical sonic characteristics. Parallel with a smaller premium InfiniCap/Rel-Cap/Hovland for improved transient response & transparency.

*Film wound under high tension for tight wrap and low microphonics, core and ends filled with polyurethane resin for improved damping. All are tape wrap except metallized 630V SCR which have a thick PVC outer wrap.

*All axial lead except 51 μF 1500V & 100 μF 630V Solen which are in aluminum cans with radial solder lugs. Lead Diameter... 250V AÆON $\leq 6.8\mu\text{F}/.030"$, 8.2 μF - 41 μF $\leq .035"$, 47 μF - 62 $\mu\text{F}/.040"$, $\geq 75\mu\text{F}/.060"$ except 82 $\mu\text{F}/.040"$ bare tinned copper leads. All 630+VDC AÆON $\leq .035"$ pvc insulated copper leads. Solen .10 μF - 2.7 $\mu\text{F}/.030"$, 22 μF - 47 μF 400V $\leq .047"$, 47 μF 630V & all $\geq 56\mu\text{F}/.060"$ bare tinned copper leads.

10 μF SOLEN . . .630V . . .38" D x .70" L	\$2.05
.15 μF SOLEN . . .630V . . .38" x .80"	\$2.05
.22 μF SOLEN . . .630V . . .43" x .85"	\$2.05
.33 μF SOLEN . . .630V . . .50" x .90"	\$2.15
.47 μF SOLEN . . .630V . . .50" x .90"	\$2.25
.68 μF SOLEN . . .630V . . .55" x 1.00"	\$2.40
1.0 μF SOLEN . . .630V . . .60" x 1.00"	\$2.50
1.5 μF SOLEN . . .630V . . .70" x 1.00"	\$3.15
1.8 μF SOLEN . . .630V . . .70" x 1.05"	\$3.25
2.0 μF SOLEN . . .250V . . .50" x 1.00"	\$3.05
2.2 μF SOLEN . . .630V . . .70" x 1.30"	\$3.25
2.7 μF AÆON . . .250V . . .57" x 1.0"	\$3.25
2.7 μF SOLEN . . .630V . . .80" x 1.35"	\$3.65
3.0 μF SOLEN . . .250V . . .60" x 1.00"	\$3.40
3.3 μF SOLEN . . .630V . . .80" x 1.25"	\$3.95
3.9 μF AÆON . . .250V . . .65" x 1.15"	\$3.75
3.9 μF AÆON . . .630V . . .95" x 1.40"	\$4.25
4.7 μF AÆON . . .250V . . .75" x 1.1"	\$3.95
4.7 μF SOLEN . . .630V . . .1.05" x 1.45"	\$4.65
5.1 μF AÆON . . .250V . . .70" x 1.20"	\$3.95
5.6 μF AÆON . . .250V . . .75" x 1.23"	\$4.15
5.6 μF AÆON . . .630V . . .1.03" x 1.53"	\$5.25
6.2 μF SOLEN . . .250V . . .76" x 1.20"	\$4.25
6.8 μF AÆON . . .250V . . .80" x 1.20"	\$4.50
6.8 μF SOLEN . . .630V . . .1.15" x 1.75"	\$5.95
8.2 μF AÆON . . .250V . . .85" x 1.30"	\$5.45
9.1 μF AÆON . . .250V . . .88" x 1.30"	\$5.75
10 μF SOLEN . . .250V . . .0.90" x 1.30"	\$5.95

10 μF SOLEN . . .630V . . .1.10" x 1.70"	\$7.50
12 μF SOLEN . . .630V . . .1.25" x 1.70"	\$8.25
13 μF AÆON . . .250V . . .1.00" x 1.50"	\$7.50
15 μF SOLEN . . .630V . . .1.35" x 2.40"	\$9.50
16 μF SOLEN . . .250V . . .1.00" x 1.50"	\$8.75
18 μF AÆON . . .250V . . .1.05" x 1.50"	\$9.50
20 μF SOLEN . . .250V . . .1.15" x 1.50"	\$9.95
22 μF AÆON . . .250V . . .1.10" x 1.70"	\$10.95
22 μF SOLEN . . .630V . . .1.50" x 2.30"	\$12.75
24 μF SOLEN . . .250V . . .1.20" x 1.70"	\$11.15
27 μF AÆON . . .250V . . .1.25" x 1.75"	\$10.25
30 μF AÆON . . .250V . . .1.20" x 1.90"	\$14.50
30 μF SOLEN . . .400V . . .1.40" x 2.10"	\$15.25
33 μF AÆON . . .250V . . .1.25" x 1.90"	\$15.35
39 μF AÆON . . .250V . . .1.40" x 1.90"	\$16.95
39 μF SOLEN . . .400V . . .1.55" x 2.40"	\$18.50
40 μF AÆON . . .630V . . .2.00" x 2.70"	\$19.95
41 μF SOLEN . . .250V . . .1.40" x 1.90"	\$18.95
47 μF SOLEN . . .250V . . .1.50" x 1.90"	\$20.95
47 μF SOLEN . . .400V . . .1.70" x 2.40"	\$19.75
47 μF SOLEN . . .630V . . .1.92" x 2.80"	\$22.50
51 μF SOLEN . . .400V . . .1.75" x 2.40"	\$20.50
51 μF SOLEN aluminum can . . .1500V . . .2.16" x 4.60"	\$54.95
56 μF AÆON . . .250V . . .1.55" x 2.15"	\$22.50
56 μF SOLEN . . .400V . . .1.75" x 2.55"	\$22.95
62 μF SOLEN . . .400V . . .1.85" x 2.60"	\$26.95
68 μF SOLEN . . .400V . . .1.90" x 2.60"	\$27.95
75 μF AÆON . . .250V . . .1.75" x 2.30"	\$27.50

75 μF SOLEN . . .400V . . .2.00" x 2.60"	\$30.50
82 μF AÆON . . .250V . . .1.75" x 2.40"	\$29.95
91 μF AÆON . . .250V . . .1.85" x 2.80"	\$32.95
91 μF SOLEN . . .400V . . .2.10" x 2.85"	\$34.95
100 μF SOLEN . . .250V . . .1.95" x 2.30"	\$36.95
100 μF SOLEN . . .400V . . .2.20" x 2.80"	\$39.95
100 μF SOLEN aluminum can . . .630V . . .2.55" x 4.55"	\$59.95
100 μF AÆON . . .630V . . .2.60" x 4.40"	\$44.95
120 μF SOLEN . . .250V . . .2.00" x 2.55"	\$46.50
120 μF SOLEN . . .400V . . .2.30" x 2.85"	\$48.95
150 μF SOLEN . . .250V . . .2.25" x 2.50"	\$46.95
150 μF SOLEN . . .400V . . .2.40" x 3.30"	\$49.95
180 μF SOLEN . . .250V . . .2.40" x 2.55"	\$49.95
200 μF SOLEN . . .400V . . .2.30" x 4.30"	\$64.95
270 μF SOLEN . . .250V . . .2.20" x 4.40"	\$79.95
330 μF SOLEN . . .250V . . .2.45" x 4.30"	\$109.95

Add 50¢ per capacitor for 1% matched pairs.
Deduct 10% for ten or more pieces per value.



All radial wire leads except:
 (◄ = snap-in), (◄* = solder lug)

BLACK GATE ELECTROLYTICS

- *Unrivalled performance in a unique graphite impregnated electrolytic design with ESR 1/5 to 1/20 that of ordinary electrolytics, minimal phase delay, and extremely low noise floor, exceeding -160dB for some models. No other electrolytic compares for low distortion, sonic purity, and extremely long life (up to 10X other electrolytics).
- ***WKZ** is a premium polarized capacitor for the B+ supply in vacuum tube audio equipment up to 500VDC.
- ***WK** 220µF 200V "Power Tank" is a unique asymmetrical non-polar design for high current applications.
- ***VK** and **FK** are the top model Black Gate polarized types for low noise applications up to 350VDC.
- ***Standard** and ultra compact **PK** polarized provide Black Gate high performance at lower cost.
- ***AC** series are 50V ±10% bi-polar types for speaker crossovers, very compact size with film capacitor performance.
- ***N, NX, NH** are superb, ultra low noise non-polar caps for the most critical coupling & power supply applications.
- *85° C rated, nominally ±20% tolerance (except type AC ±10%), but typically closely matched and ±5-10% of value.

WKZ High Voltage Polarized

47µF/47µF*	500V	gone	35mm x 65mm
100µF/100µF*	350V	98.00	35mm x 60mm
100µF*	500V	100.00	35mm x 65mm
100µF/100µF*	500V	gone	35mm x 120mm
220µF/220µF*	350V	gone	35mm x 100mm

VK Polarized & WK "Power Tank"

22µF*	350V VK	10.95	22mm x 25mm
47µF*	160V VK	9.95	12.5mm x 25mm
150µF*	350V VK	24.95	30mm x 25mm
220µF*	200V WK	36.00	30mm x 25mm

FK Polarized

47µF	16V	5.25	10mm x 12.5mm
100µF	25V	5.95	10mm x 20mm
100µF*	50V	7.95	12.5mm x 20mm
100µF	100V	15.50	18mm x 35mm
220µF	25V	9.95	12.5mm x 25mm
470µF	16V	10.95	16mm x 25mm
1000µF	16V	14.95	16mm x 32mm
1000µF	50V	27.95	22mm x 40mm
2200µF	35V	24.95	18mm x 35mm
2200µF*	63V	49.95	30mm x 50mm
10,000µF*	63V	gone	40mm x 100mm
10,000µF*	80V	gone	50mm x 75mm
10,000µF*	100V	gone	50mm x 83mm

PK Compact Polarized

10µF	50V	4.49	4mm x 7mm
22µF	50V	.95	4mm x 7mm
33µF	50V	.95	4mm x 7mm
47µF	.50V & 100V	.95	4mm x 7mm
10µF	100V	.75	4mm x 7mm
22µF	100V	.95	5mm x 7mm
3.3µF	100V	.95	6.3mm x 7mm
4.7µF	50V	.75	5mm x 7mm
10µF	50V	.95	6.3mm x 7mm
22µF	50V	.95	6.3mm x 7mm
33µF	35V	.95	6.3mm x 7mm
47µF	25V	.95	6.3mm x 7mm
100µF	10V	.95	6.3mm x 7mm
220µF	4V	.95	6.3mm x 7mm

Standard Polarized

3.3µF	250V	4.25	10mm x 15mm
4.7µF	100V	1.50	8mm x 11mm
10µF	16V	1.00	5mm x 11mm
10µF	50V	1.50	8mm x 13mm
10µF	100V	1.75	10mm x 13mm
10µF	250V	5.50	12.5mm x 25mm
22µF	16V	1.25	6.3mm x 11mm
22µF	100V	2.75	10mm x 20mm
33µF	160V	6.95	12.5mm x 20mm
47µF	16V	1.80	8mm x 11mm
47µF	50V	1.85	10mm x 16mm
47µF	100V	5.95	12.5mm x 25mm
100µF	16V	2.25	10mm x 13mm
100µF	50V	2.95	12.5mm x 20mm
100µF	100V	4.75	16mm x 26mm
100µF	160V	13.95	16mm x 36mm
220µF	16V	2.95	10mm x 20mm
220µF	50V	4.75	16mm x 25mm
220µF	100V	12.95	18mm x 40mm
470µF	16V	3.25	12.5mm x 25mm
470µF	50V	6.50	16mm x 36mm
470µF	100V	30.95	22mm x 42mm
470µF*	160V	45.95	30mm x 45mm
1000µF	16V	4.75	16mm x 25mm
1000µF	25V	5.75	16mm x 36mm
1000µF	50V	15.50	22mm x 42mm
2200µF	16V	8.50	16mm x 31mm
3300µF	16V	13.50	18mm x 36mm
4700µF	16V	13.95	18mm x 36mm
4700µF*	35V	32.95	40mm x 40mm
4700µF*	50V	99.95	40mm x 50mm

N, NX, NH Non-Polar

10µF	50V NX HQ	1.95	4mm x 7mm
47µF	50V NX HQ	1.95	4mm x 7mm
10µF	50V N	2.65	5mm x 12mm
47µF	50V N	3.25	5mm x 12mm
10µF	50V N	4.25	8mm x 11mm
22µF	6.3V NX HQ	2.95	5mm x 7mm
33µF	16V N	4.50	6.5mm x 11mm
47µF	6.3V NX HQ	2.50	6mm x 7mm
47µF	50V N	9.95	13mm x 26mm
68µF*	350V NH	37.95	30mm x 25mm
100µF	6.3V NX	5.25	6mm x 12mm
100µF	16V N	10.95	13mm x 20mm
100µF	50V N	12.00	16mm x 31mm
100µF*	160V NH	24.95	22mm x 25mm
150µF*	350V NH	52.50	25mm x 25mm
220µF	6.3V NX	6.25	8mm x 11mm
220µF*	160V NH	32.50	30mm x 25mm
330µF	100V N	46.50	18mm x 36mm
470µF	6.3V NX	13.95	13mm x 24mm
470µF	16V N	12.95	16mm x 24mm
680µF	35V NX	13.95	16mm x 24mm
1000µF	25V NX	12.50	16mm x 24mm
1000µF	50V N	57.95	22mm x 36mm
1500µF	10V NX	12.95	16mm x 25mm
2200µF	6.3V NX	26.95	18mm x 35mm
2200µF*	100V N	200.00	30mm x 110mm
4700µF*	35V N	140.00	40mm x 40mm

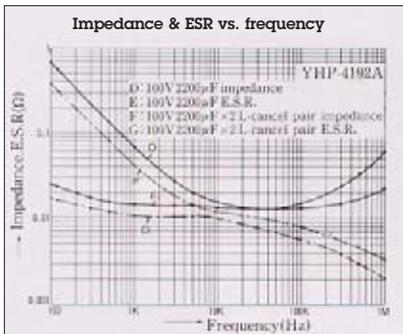
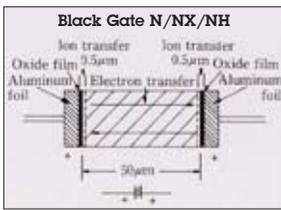
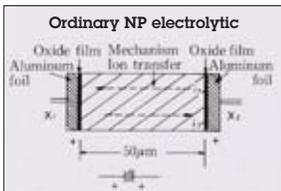
AC Non-Polar for speakers ±10%

6.8µF	50V	12.50	16mm x 32mm
10µF	50V	12.95	16mm x 36mm
15µF	50V	16.95	18mm x 36mm
22µF	50V	22.95	22mm x 41mm
47µF	50V	33.95	25mm x 51mm

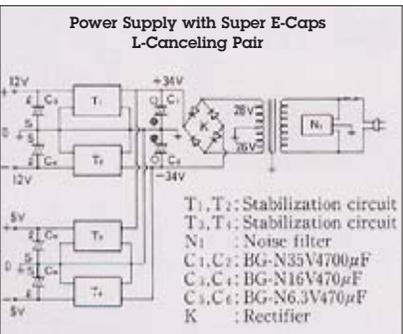
Black Gates are no longer in production.
 Please check on availability before sending payment.

All BG have radial wire leads except:
 (◄ = snap-in), (◄* = solder lug)

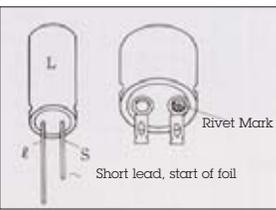
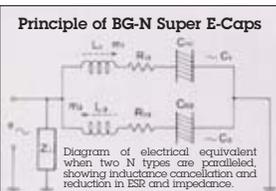
While one could theoretically use the **N** series Black Gates for ultra high efficiency speaker applications, they are physically very small and not suitable for higher current demands. Use the **AC** series for crossovers. We carry almost all Black Gates currently manufactured except a few PK & C types. With those exceptions, if you don't see it listed here, they probably don't make it! We are noted for our excellent BG stock, although the future manufacture is currently uncertain. Additional literature, including a detailed discussion of "Super E-Caps," is available on request.



Additional performance can be obtained from the N/NX/NH non-polar types by configuring them as an "L Cancelling Pair". This involves paralleling two identical capacitors so that the starting foil lead of one is connected to the ending foil lead of



the other and vice versa. This arrangement lowers the ESR, cancels the internal inductance, and eliminates resonance, allowing the Black Gates to function as pure C into the GHz range. This combination is the "Super E-Cap".



Flat Stack VT series now available - ask!
JUPITER BEESWAX & PAPER CAPACITORS
 *USA manufactured "condensers" featuring aluminum foil, beeswax and untreated kraft paper construction for classic vacuum tube audio projects
 20ga bare copper leads for 600V caps, 18ga for 100V, 10% tolerance, large plate area, non-microphonic, absolutely no plastics used in construction
 (600V are cryo treated new HT [high temperature]) 0.001µF 600V @\$27.95 0.01µF 600V @29.50 0.02µF 600V @\$29.50 0.047µF 600V @\$33.50
 0.10µF 600V @\$35.95 0.22µF 600V @\$39.95 0.47µF 600V @\$45.50 1.0µF 600V @\$57.95
 1.5µF 300V & 2.0µF 100V @\$27.50 2.2µF 100V @\$27.95 3.0µF, 3.3µF 100V @\$29.95

Do not use these capacitors in applications with an appreciable AC voltage component, such as AC line filters and the like, but they are fine for speaker crossover application.



NICHICON ELECTROLYTICS

*Low distortion, mechanically damped, designed specifically for audio, superb sonics at very reasonable cost.
 *The Nichicon Muse acoustic series comprise types **KZ**, **FA**, **FG**, **FX**, and **FS** polarized, and the **ES** non-polar electrolytics covering a range of .47µF to 22,000µF at up to 100VDC. The KZ is their premier small, board mount cap with the FA/FG very close in quality. The more compact FX and FS permit higher capacitance and voltage ratings not available in the KZ, FA/FG. All feature radial wire lead termination, ±20% tolerance, 85°C.
 *The **DB ±20%** and **GB ±10%** series are 50V bi-polar capacitors for speaker crossovers. 68µF maximum value.
 *The **KG Gold Tune & Super Through** series large can electrolytics are Nichicon's premier power supply types for high end audio equipment up to a maximum 100VDC rating. All are solder lug except some smaller KG types which are snap-in (♦) where noted. The Super Through have gold plated solder lugs. All are ±20%, 85°C.
 *The **NT** series are not specifically designed for audio, but are quality screw terminal cans for high voltage applications. They are ±20% and have an extended 105°C rating, which may be quite useful inside high temperature vacuum tube power amplifiers - radial screw terminals, clamps are included..

KZ, FA/FG, FX, FS polarized

10µF	.....50V FG	.....\$ .65	.....5mm D x 11mm H
10µF	.....100V KZ	......75	.....8mm x 11.5mm
22µF	.....25V FG	......65	.....5mm x 11mm
22µF	.....50V KZ	......70	.....8mm x 12.5mm
47µF	.....50V KZ	......75	.....10mm x 16mm
47µF	.....63V FG	......70	.....10mm x 12.5mm
47µF	.....100V KZ	......95	.....12.5mm x 20mm
100µF	.....10V FG	......45	.....6.3mm x 11mm
100µF	.....25V FG	......70	.....8mm x 11.5mm
100µF	.....25V KZ	......75	.....10mm x 16mm
100µF	.....50V KZ	......95	.....12.5mm x 20mm
100µF	.....63V FG	......95	.....10mm x 20mm
100µF	.....100V KZ	.....1.50	.....16mm x 25mm
220µF	.....16V FG	......70	.....10mm x 12.5mm
220µF	.....25V KZ	......85	.....12mm x 20mm
220µF	.....35V FG	.....1.15	.....10mm x 20mm
220µF	.....50V KZ	.....1.10	.....16mm x 25mm
220µF	.....100V KZ	.....1.75	.....16mm x 35.5mm
330µF	.....25V KZ	......95	.....12.5mm x 25mm
470µF	.....16V FG	.....1.15	.....10mm x 20mm
470µF	.....25V KZ	.....1.25	.....16mm x 25mm
470µF	.....35V FG	.....1.35	.....12.5mm x 25mm
470µF	.....50V KZ	.....1.95	.....16mm x 35.5mm
470µF	.....63V FG	.....1.50	.....16mm x 25mm
470µF	.....100V FG	.....2.95	.....18mm x 35.5mm
1000µF	.....16V FG	.....1.65	.....12.5mm x 25mm
1000µF	.....25V KZ	.....1.75	.....16mm x 35.5mm
1000µF	.....50V KZ	.....2.15	.....18mm x 40mm
1000µF	.....63V FG	.....2.50	.....18mm x 35.5mm
1000µF	.....100V FW	.....2.25	.....18mm x 40mm
2200µF	.....16V FG	.....1.75	.....16mm x 25mm
2200µF	.....25V FG	.....2.25	.....16mm x 35.5mm
2200µF	.....35V FG	.....2.50	.....18mm x 35.5mm
3300µF	.....25V FG	.....2.95	.....18mm x 40mm
3300µF	.....50V FX	.....2.95	.....20mm x 40mm
4700µF	.....16V FG	.....2.75	.....18mm x 35.5mm
10,000µF	.....6.3V FX	.....2.75	.....16mm x 31mm
10,000µF	.....6.3V FA	.....4.50	.....18mm x 40mm
10,000µF	.....16V FW	.....2.95	.....18mm x 40mm
15,000µF	.....10V FX	.....3.50	.....18mm x 40mm
22,000µF	.....6.3V FX	.....3.75	.....20mm x 40mm

KZ, FA, FG, FX, FS, EX, DB, GB quantity discounts

10+ per value, deduct 10% 25+ per value, deduct 25%
 100+ per value, deduct 35% 500+, request quote

Great Supply KG & NT quantity discounts

10+ per value, deduct 10% 25+ per value, deduct 15%
 100+ per value, request quote

Special orders that meet factory minimums are welcome.

Clamps... 30, 35, 40mm/\$2.50 50/\$3.50 63/\$4.50 76/\$6.50

ES series non-polar for electronics

4.7µF	.....50V ES	......45	.....6mm x 11mm
10µF	.....50V ES	......65	.....8mm x 11.5mm
22µF	.....50V ES	......95	.....10mm x 12.5mm
47µF	.....50V ES	.....1.10	.....10mm x 20mm
100µF	.....50V ES	.....1.50	.....12.5mm x 25mm
220µF	.....50V ES	.....2.25	.....16mm x 25mm
470µF	.....35V ES	.....2.25	.....16mm x 25mm
1000µF	.....25V ES	.....2.25	.....16mm x 31.5mm

DB/GB bi-polar for speakers

22µF	.....50V GB	.....\$2.75	.....22mm x 40mm
33µF	.....50V GB	.....3.25	.....25mm x 40mm
68µF	.....50V DB	.....3.25	.....22mm x 40mm

KG Gold Tune & Super Through polarized

2200µF KG+Gold	.....100V	.....\$6.95	.....30mm x 50mm
4700µF KG+Gold	.....35V	.....2.95	.....30mm x 30mm
4700µF KG+Gold	.....63V	.....5.95	.....30mm x 50mm
4700µF KG+Gold	.....80V	.....7.95	.....35mm x 50mm
6800µF KG+Gold	.....35V	.....3.95	.....30mm x 35mm
6800µF KG+Gold	.....63V	.....6.95	.....35mm x 50mm
6800µF KG+Gold	.....80V	.....9.95	.....35mm x 50mm
8200µF KG+Gold	.....50V	.....6.95	.....35mm x 45mm
10,000µF KG+Gold	.....35V	.....4.95	.....35mm x 40mm
10,000µF KG Gold	.....50V	.....10.95	.....35mm x 80mm
10,000µF KG Super	.....50V	.....21.95	.....40mm x 100mm
10,000µF KG Gold	.....63V	.....13.95	.....40mm x 80mm
10,000µF KG Super	.....63V	.....21.95	.....50mm x 80mm
10,000µF KG Gold	.....80V	.....19.95	.....50mm x 80mm
10,000µF KG Super	.....80V	.....36.95	.....63mm x 80mm
15,000µF KG Gold	.....63V	.....23.95	.....40mm x 100mm
15,000µF KG Super	.....63V	.....37.95	.....63mm x 80mm
15,000µF KG Gold	.....80V	.....30.95	.....50mm x 100mm
15,000µF KG Super	.....80V	.....43.95	.....63mm x 100mm
15,000µF KG Gold	.....100V	.....36.95	.....63mm x 80mm
15,000µF KG Super	.....100V	.....49.95	.....76mm x 100mm
22,000µF KG Gold	.....63V	.....28.95	.....50mm x 100mm
22,000µF KG Super	.....63V	.....49.95	.....63mm x 100mm
22,000µF KG Gold	.....80V	.....41.50	.....63mm x 100mm
22,000µF KG Super	.....80V	.....66.95	.....76mm x 100mm
22,000µF KG Gold	.....100V	.....49.95	.....76mm x 100mm

♦ marked are snap in, all other KG & NT are solder lug

Items ~~crossed out~~ (crossed out) are out of stock at the time this catalog was posted - check availability!

ALUMINUM ELECTROLYTIC CAPACITORS nichicon

KZ Premium Grade Type, For Audio Equipment

- Premium grade "nichicon MUSE" acoustic series.
- Ideally suited for first class audio equipment where qualitative and quantitative performance is required.

ALUMINUM ELECTROLYTIC CAPACITORS nichicon

FG High Grade Type, For Audio Equipment

- Fine Gold "MUSE" acoustic series suited for high grade audio equipment, using state of the art etching techniques.
- Rich sound in the bass register and clearer high end, most suited for AV equipment like DVD, MD.

ALUMINUM ELECTROLYTIC CAPACITORS nichicon

FX Miniature Sized, For Audio Equipment

- Miniature sized "nichicon MUSE" acoustic series.
- Suited for use in audio devices where lighter, thinner, shorter and smaller capacitors are required.

ALUMINUM ELECTROLYTIC CAPACITORS nichicon

ES Bi-Polarized, For Audio Equipment

- Bi-polarized "nichicon MUSE" acoustic series.
- Suited for audio signal circuits.

ALUMINUM ELECTROLYTIC CAPACITORS nichicon

DB,GB Bi-Polarized, For Speaker Network

- Bi-polarized series.
- Designed specifically for crossover networks in Hi-Fi sound systems.

ALUMINUM ELECTROLYTIC CAPACITORS nichicon

KG High Voltage Terminal Type, For Audio Equipment

- Designed for high grade audio equipment, giving priority to high fidelity sound quality.
- This series has following 3 series:
 - Gold Tune: High tone quality type with newly developed materials, suited for pre-main amplifier, CD, MD.
 - Super Through: High grade type with lug terminals with new materials, suited for high grade audio amplifier.
 - Terminals are gold-plated for high tone quality.

ALUMINUM ELECTROLYTIC CAPACITORS nichicon

NT Screw Terminal Type, Wide Temperature Range

- Long life of 5,000 hours (2,000 hours for 10-250V application at ripple current up to 25°C).
- Extended voltage range from 10V up to 450V.
- Standard range up to 100-2200µF.

NT series come with clamps.

You may download data sheets for most of these types from the Nichicon USA web site www.nichicon-us.com, or we will email the PDF files to you directly on request, or enclose printed copies with any order. Specify model.



ASC OIL FILLED POLYPROPYLENES: Excellent for high voltage power supply applications. These are the X386S series non-inductively wound metallized non-polar polypropylene, Spearinol III oil filled aluminum cans. 440VAC/800+VDC, operating temperature to +70°C. ASC's design includes a partial impregnation technique utilizing a non-toxic natural oil based coolant that avoids the problems of swelling and premature failure which can occur with polypropylene films immersed in more commonly used synthetic hydrocarbon and petroleum based oils.

20µF 440VAC ±10% (45mm D x 110mm H) @\$14.95

40µF 440VAC ±10% (50mm x 132mm) @\$18.95

SOLO & ALPHA-CORE COPPER FOIL AIR CORE INDUCTORS

- *Unique 5% tolerance 16ga, 14ga & 12ga inductors wound from an ultra-thin .003" 4N copper foil with polyester & polypropylene insulating materials and a varnish dip coating, made in the USA by Solo (Solo out of business, phasing out) & Alpha-Core.
- *Low DC & AC resistance, very low power loss, minimal phase shift and skin effect resistance to 100kHz, no hysteresis distortion, the most transparent inductor made today, rapidly becoming the inductor of choice in high end speaker systems.
- *All values listed below are stock, sorry due to manufacturer's new high minimum line item requirements, custom values no longer available.
- *16ga are 1.0" High , 14ga are 1.25-1.42" High, 12ga are 2.0" High, diameter approximately as listed.



.05mH	.....14ga	.....	.048Ω	DCR	.....	1.35"	D	.....	11.85
.22mH	.....12ga	.....	.070Ω		.....	1.90"		.....	22.50
.47mH	.....12ga	.....	.110Ω		.....	2.30"		.....	31.95
.56mH	.....12ga	.....	.120Ω		.....	2.30"		.....	35.95
.62mH	.....14ga	.....	.165Ω		.....	2.25"		.....	21.00
.62mH	.....12ga	.....	.125Ω		.....	2.45"		.....	37.50
.68mH	.....16ga	.....			.....			.....	9.95
.75mH	.....16ga	.....			.....			.....	10.50
1.10mH	.....12ga	.....	.175Ω		.....	3.15"		.....	45.50
1.20mH	.....12ga	.....	.180Ω		.....	3.38"		.....	47.50
1.30mH	.....16ga	.....			.....			.....	13.50
1.40mH	.....16ga	.....			.....			.....	12.95
1.40mH	.....14ga	.....	.280Ω		.....	3.20"		.....	29.95
1.40mH	.....12ga	.....	.200Ω		.....	3.45"		.....	49.95
1.50mH	.....16ga	.....	.465Ω		.....	3.15"		.....	13.50
1.50mH	.....12ga	.....	.210Ω		.....	3.50"		.....	52.50
1.60mH	.....12ga	.....	.225Ω		.....	3.55"		.....	52.50
1.80mH	.....12ga	.....	.250Ω		.....	3.65"		.....	54.50
3.30mH	.....14ga	.....	.450Ω		.....	3.88"		.....	45.50
5.60mH	.....14ga	.....	.560Ω		.....	4.40"		.....	61.95
5.60mH	.....12ga	.....	.490Ω		.....	4.75"		.....	107.50
6.20mH	.....14ga	.....	.600Ω		.....	4.50"		.....	65.95
6.20mH	.....12ga	.....	.500Ω		.....	5.00"		.....	116.50
6.80mH	.....14ga	.....	.640Ω		.....	4.74"		.....	\$82.50

Due to changes in dealer discount price structure for these inductors, we are discontinuing them. As a result.....

Deduct 20% off the prices posted for all our remaining pair stock!
Sold in pairs only

Please check availability before placing your order.

Soft Recovery (FRED) & Schottky Diodes

Fast Recovery Epitaxial Diode. The FRED soft recovery and Schottky diodes are the high speed device of choice for rectification. Their fast response time, soft recovery, and lack of ringing and overshoot places them a big step beyond other high speed diodes which have much higher noise and distortion. Replacing your diode bridges with these (4 usually required) will yield significant improvements including increased dynamics, dramatically lower noise, and reduced grain and glare. Use the 1000V/1200V types where your B+ is above 350VDC or so, thereby allowing for turn on surges. We carry diodes of this type from Vishay, IXYS, and Fairchild, including the exceptionally soft recovery "Stealth" types. Please note that the soft recovery characteristic of these diodes is far more important than the absolute speed (trr) of one or the other. Heat sinking may be required for high current applications, either to your chassis or with individual heatsinks. As the back of each diode is also the cathode, mica insulators are required for electrical isolation when chassis mounting or sharing a common heat sink. We have full wave bridge packages from IXYS constructed using low noise superfast recovery diodes... great for power amp upgrades! Ask for data sheets.

<p>55c Five watt heatsink for TO-220 style package ← clip on type.</p>	<p>65c Ten watt heatsink for TO-220/247 ← fits any IXYS/Hexfred. 6.5gr heat sink grease \$1.75 isolator/washer 10c</p>	<p>1.85 20 watt heatsink for TO-220/247 package ← fits two diodes.</p>
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International Rectifier

APPLICATION NOTES

AN-989

The HEXFRED™ Ultrafast Diode in Power Switching Circuits
(HEXFRED is a trademark of International Rectifier)

by Y. Kheranov, M. Robinson, G. Gutierrez

Introduction

This application note describes the benefits of using the Hexfreed Rectifier 600 volt, 17 amp, ultra fast recovery epitaxial diode, HEXFRED, in power switching circuits. This device, the first from a broad product family providing a wide range of current and voltage ratings, is based on the new HEXFRED technology developed for high-frequency Rectifier Diodes produced using the technology called epitaxially fast recovery current diodes. It has very low values of reverse recovery current (I_{RR}), reverse recovery time (t_{RR}), and reverse recovery charge (Q_{RR}) (see Figures 1 and 2).

The essential of device recovery are covered, followed by laboratory measurements taken from an IGBT, chopper circuit. Finally, guidelines are provided for calculating power losses in class-B modules.

Figure 1. Oscilloscope display of recovery characteristics for the HEXFRED HEXFRED.

Typical trr comparison of 15A 600V HEXFRED and conventional fast recovery diodes

T0-247

T0-220

BrownDog
Electronic Component Adapters

#970601... S08 to 8 pin DIP . . . \$3.25
#021001... 2 single DIP to 1 DIP . . . \$3.95
#020302... two S08 to 8 pin DIP . . . \$3.25
#060601... RC4136 adaptor . . . \$5.35
#020601A... 8 pin DIP to TO-99 . . . \$3.75

Ask for further details if you are not familiar with these.

1.1A .....100V DO-41 .....Vishay Schottky.....\$0.50	18A ..1200V TO-247 .....Fairchild** .....<45ns.....\$3.25	20A.....600V .....IXYS bridge...<80ns.....\$9.95
2x5A ..150V TO-220 .....Vishay Schottky.....\$2.50	30A .....600V TO-220 .....Fairchild*** .....<40ns.....\$1.95	68A.....600V .....IXYS bridge...<35ns .....\$22.95
5.9A .1200V TO-220 .....Cree Schottky.....\$3.95	30A .....600V TO-247 .....Fairchild .....<35ns.....\$3.95	32A .....1200V .....IXYS bridge...<40ns .....\$18.95
8A .....600V TO-220 .....Fairchild** .....<25ns.....\$1.35	60A .....600V TO-247 .....IXYS.....<35ns.....\$9.50	20A .....2000V .....IXYS bridge...<70ns .....\$37.95
8A .....1200V TO-220 .....Fairchild** .....<32ns.....\$1.95	** Fairchild Stealth diode, *** Stealth II	6.6A Schottky ..600V .....IXYS bridge.....\$63.95
15A .....600V TO-220 .....Fairchild** .....<30ns.....\$2.95	single diodes 12+ per type, deduct 10% 25+ per type, less 20%	bridge 12+ per type, deduct 10%

Analog Devices/Burr Brown IC's Popular op-amp replacements for the NE-553x and others found in CD player output stages, power supplies, and other IC's.

AD711JN (single) @\$2.95 AD712JN (dual) @\$4.00 AD 744JN (single) @\$5.95 AD-797AN (single) @ask AD-8005AN (single) @\$4.50 AD-811AN (single) @\$6.95 AD812AN (dual) @\$4.95
AD815AY (SIP pkg) @\$12.95 AD-817AN (single) @\$4.25 AD823AN (dual) @\$4.95 AD-826AN (dual) @\$4.50 AD-827JN (dual) @\$8.95 AD-843JN (single) @\$8.95 AD-847JN (single) @\$4.95
AD-848JN (single) @\$5.95 AD8620AR @\$16.00 OP-275 (dual) @\$2.95 Burr-Brown OPA2604AP (dual) @\$5.50 Burr Brown OPA2132PA (dual) @\$6.95 OPA2134PA (dual) @\$2.95
LT1364CN8 (dual) @\$6.95 8 pin IC sockets with 30µ gold plated pins and sockets... 80¢ each (25+ @65¢ each)

Burr Brown BUF-634P: High speed buffer in an 8 pin dip package, 180MHz bandwidth, 2000V/µs slew rate, ±2.25V to ±18V supply voltage with max 15mA supply current, drives capacitive loads, 250mA drive current, excellent for buffered passive preamp designs, op-amp current booster, etc... \$8.95

Linear Technology Regulators: LT1033CT 3A negative/\$5.50 LT1085CT 3A positive/\$6.50 LT337AT 1.5A negative/\$3.95 LT317AT 1.5A positive/\$3.95
LT1083CP 7.5A positive/\$12.95 Linear Technology LT1034-2.5 micropower dual reference @\$4.95

IC's are not returnable!!!

ROEDERSTEIN RESISTA RESISTORS

German metal film resistor used extensively in high end audio equipment, copper leads, ferrous end-caps, 1% tolerance, 50ppm TCR, very reliable. MK3 no longer manufactured, so quantities limited for some .5W values.



1.0Ω ^{MK3}	84.5Ω	392Ω	825Ω	1.62K	3.24K	6.04K ^Δ	11.5K	27.4K ^{PRP}	53.6K	100K ^{PRP}	191K	357K	665K	2.80M
1.69Ω	90.9Ω ^{PRP}	402Ω ^Δ	845Ω	1.65K	3.32K ^Δ ^{PRP}	6.19K	12.1K ^Δ ^{PRP}	28.7K	54.9K	102K ^{PRP}	196K	365K	681K ^Δ	3.01M
3.01Ω ^Δ	97.6Ω ^{PRP}	422Ω ^{PRP}	866Ω	1.69K	3.40K	6.34K	12.4K	29.4K	56.2K ^{PRP}	105K ^{PRP}	200K ^Δ	374K	698K ^{PRP}	3.32M
4.99Ω ^Δ	100Ω ^Δ ^{PRP}	453Ω	909Ω ^{PRP}	1.74K ^Δ	3.48K	6.49K	13.0K	30.1K	57.6K ^Δ	110K	205K	383K	715K	3.65M
5.00Ω ^{PRP}	110Ω ^{PRP}	475Ω ^{PRP}	931Ω	1.78K	3.57K	6.65K	13.7K	30.9K	59.0K	113K	210K	392K	732K	4.02M
5.11Ω	121Ω	499Ω ^Δ	953Ω	1.82K ^{PRP}	3.65K ^Δ	6.81K ^Δ ^{PRP}	14.0K	32.4K	60.4K	115K	215K	402K ^Δ	750K	4.32M
7.50Ω ^{PRP}	130Ω	511Ω ^{PRP}	976Ω	1.87K	3.74K	6.98K	14.7K	33.2K ^Δ ^{PRP}	61.9K	118K	221K ^Δ	412K ^{PRP}	768K	4.53M
10.0Ω ^Δ ^{PRP}	137Ω	523Ω	1.00K ^Δ ^{PRP}	1.91K	3.83K	7.15K	15.0K ^Δ ^{PRP}	34.0K	63.4K	121K ^Δ	226K	422K	787K	4.75M
15.0Ω ^Δ	140Ω	536Ω	1.02K ^{PRP}	1.96K	3.92K ^{PRP}	7.32K	15.4K	34.8K	64.9K	124K ^{PRP}	232K ^{PRP}	432K ^{PRP}	806K	4.99M
17.4Ω	150Ω ^Δ ^{PRP}	549Ω ^Δ	1.05K ^{PRP}	2.00K ^Δ ^{PRP}	4.02K ^Δ	7.50K ^Δ	16.2K	35.7K	66.5K	127K	237K	442K	825K ^{PRP}	5.62M
20.0Ω ^{PRP}	162Ω ^{PRP}	562Ω ^{PRP}	1.07K	2.10K	4.12K	7.68K	16.5K	36.5K	68.1K ^Δ ^{PRP}	130K	243K	453K	845K	6.81M
22.1Ω ^Δ ^{PRP}	174Ω ^{PRP}	576Ω	1.10K	2.21K ^Δ ^{PRP}	4.22K	7.87K	16.9K ^Δ	37.4K	69.8K	133K	249K ^Δ	464K ^{PRP}	866K	7.50M
24.9Ω	187Ω	590Ω	1.15K	2.26K ^{PRP}	4.32K	8.06K	17.4K	38.3K ^Δ	71.5K	137K	255K	475K ^Δ	887K	10.00M
30.9Ω ^{PRP}	200Ω ^{PRP}	604Ω ^Δ	1.18K	2.37K ^{PRP}	4.42K	8.25K	17.8K	39.2K	73.2K	140K	261K	487K ^{PRP}	909K	
33.2Ω ^Δ ^{PRP}	210Ω	619Ω	1.21K ^Δ ^{PRP}	2.43K	4.53K	8.45K	18.2K ^Δ	40.2K	75.0K	143K	267K	499K	931K	
34.8Ω	221Ω ^Δ ^{PRP}	634Ω	1.24K	2.49K ^Δ	4.64K	8.66K ^Δ	18.7K	41.2K	76.8K	147K	274K ^{PRP}	511K	953K	Values marked "PRP" indicate the 1/2W has been replaced with a PRP.
40.2Ω	243Ω	649Ω	1.27K	2.55K	4.75K ^Δ ^{PRP}	8.87K	19.1K	42.2K	78.7K	150K ^Δ	280K	523K	976K	
47.0Ω	249Ω	665Ω	1.30K	2.61K	4.87K	9.09K	19.6K ^{PRP}	43.2K	80.6K	154K ^{PRP}	287K	536K	1.00M ^Δ	
49.9Ω ^Δ ^{PRP}	261Ω	681Ω ^Δ	1.33K	2.67K	4.99K ^Δ ^{PRP}	9.31K	20.0K ^{PRP}	44.2K	82.5K ^Δ ^{PRP}	158K	294K	549K ^Δ	1.21M ^{PRP}	
54.9Ω	274Ω ^Δ ^{PRP}	698Ω	1.37K	2.74K ^{PRP}	5.11K	9.53K	21.0K	45.3K	84.5K	162K	301K ^Δ	562K	1.37M	
60.4Ω	287Ω	715Ω	1.40K	2.80K	5.23K	9.76K ^{PRP}	22.1K ^Δ ^{PRP}	46.4K ^{PRP}	86.6K	165K ^{PRP}	309K	576K	1.50M	
64.9Ω	301Ω ^{PRP}	732Ω	1.43K	2.87K	5.36K	10.0K ^Δ ^{PRP}	23.2K	47.0K ^{PRP}	88.7K	169K	316K ^{PRP}	590K	1.65M	2W still remain Resistor MK8
68.1Ω	316Ω	750Ω ^Δ	1.47K	2.94K	5.49K ^Δ	10.2K ^{PRP}	24.3K	48.7K	90.9K	174K ^Δ	324K	604K ^Δ	1.78M	
69.8Ω	332Ω ^Δ	768Ω ^{PRP}	1.50K ^Δ ^{PRP}	3.01K ^Δ	5.62K	10.5K ^{PRP}	24.9K ^Δ	49.9K ^{PRP}	93.1K	178K	332K ^Δ	619K	2.00M	
75.0Ω	348Ω	787Ω	1.54K	3.09K	5.76K	10.7K	25.5K	51.1K	95.3K	182K ^{PRP}	340K	634K	2.21M	
80.6Ω	374Ω	806Ω	1.58K	3.16K	5.90K	11.0K	26.1K	52.3K	97.6K ^{PRP}	187K	348K ^{PRP}	649K	2.49M ^{PRP}	

* MK3/.5W (300VMax) stocked in all of the values listed.
 all MK3 values @25¢ each except 4.75M and above @55¢ each
 * MK8/.2W (500VMax) only in values marked with a Δ... \$1.95 each
 all marked with Δ are MK8 Roederstein even if .5W is now PRP

exceptions: 4.99Ω in MK8 only
 * 25+ pieces per value deduct 10%, 50-99 per value deduct 20%
 * 100+ pieces per value... deduct 25% 10% maximum discount for MK8
 Values marked "PRP" indicate 1/2W MK3 replaced with a PRP-9372 at 45¢ - 65¢ ea.
 PRP are superb non-magnetic audio resistors from Precision Resistive Products USA

HOLCO RESISTORS

* Highly praised by Hi Fi News & RR, mfg. by Holsworthy of Devon, England. Name is derived from WHOLE COPPER.
 * Metal film on a ceramic substrate with gold plated ends joined to end caps and .032" D copper leads.
 * H4 (RN-60) .5 watt @70°C, 300VMax, TCR is 50ppm *Tolerance specd. at 1% but typically within .25% of marked value.
 * We are slowly replacing all of these with the superb PRP 9372 audio grade metal films from Precision Resistive Products.
 * Caution!!! As the failure rate with the H4 (not PRP) increases with voltage, limit the maximum applied voltage to 150VDC or less.



H4 shown actual size
 H4 = .142" D x .375" L
 H4 leads = 0.032" (20ga)
 PRP = .150" D x .400L
 PRP leads = 0.025" (22ga)

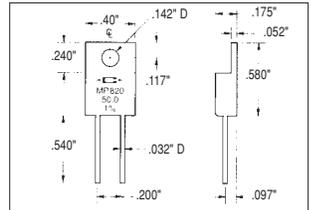
1.00Ω	221Ω ^{PRP}	665Ω	1.37K	2.80K	5.62K	11.5K	30.1K ^{PRP}	60.4K	118K	232K	442K	845K
5.00Ω ^{PRP}	232Ω	681Ω ^{PRP}	1.40K	2.87K	5.76K	12.1K	30.9K	61.9K	121K	237K	453K	866K
10.0Ω ^{PRP}	243Ω	698Ω	1.43K	2.94K	5.90K	12.4K	32.4K	63.4K	124K	243K ^{PRP}	464K	887K
15.0Ω	249Ω	715Ω	1.47K	3.01K	6.04K	13.0K	33.2K	64.9K	127K	249K ^{PRP}	475K	909K
20.0Ω ^{PRP}	274Ω	732Ω	1.50K	3.09K	6.19K	13.7K	34.0K	66.5K	130K	255K	487K	931K
22.1Ω ^{PRP}	287Ω	750Ω ^{PRP}	1.54K	3.16K	6.34K	14.0K	35.7K	68.1K ^{PRP}	133K	261K	499K	953K
24.9Ω	301Ω ^{PRP}	768Ω	1.58K	3.24K	6.49K	14.7K	36.5K	69.8K	137K	267K	511K	976K ^{PRP}
30.9Ω ^{PRP}	316Ω	787Ω	1.62K	3.32K ^{PRP}	6.65K	15.0K ^{PRP}	37.4K	71.5K	140K	270K	523K	1.00M ^{PRP}
40.2Ω ^{PRP}	332Ω ^{PRP}	806Ω	1.65K	3.40K	6.81K ^{PRP}	15.4K	38.3K	73.2K	143K	274K	536K	1.21M
47.0Ω ^{PRP}	348Ω	825Ω	1.69K	3.48K	6.98K	16.2K ^{PRP}	38.9K	75.0K	147K	280K	549K	1.50M
49.9Ω ^{PRP}	357Ω	845Ω	1.74K	3.57K	7.15K	16.9K	39.2K	76.8K	150K	287K	562K	1.78M
54.9Ω ^{PRP}	374Ω	866Ω	1.78K	3.65K	7.32K	17.4K	40.2K	78.7K	154K	294K	576K	2.00M
60.4Ω ^{PRP}	392Ω ^{PRP}	887Ω	1.82K ^{PRP}	3.74K	7.49K ^{PRP}	17.8K	41.2K	80.6K	158K	301K	590K	2.21M
68.1Ω ^{PRP}	402Ω	909Ω	1.87K	3.83K	7.68K	18.2K	42.2K ^{PRP}	82.5K	162K	309K	604K	2.49M
75.0Ω ^{PRP}	412Ω	931Ω	1.91K	3.92K	7.87K	18.7K	43.2K	84.5K	165K	316K	619K	2.74M
84.5Ω	422Ω	953Ω	1.96K	4.02K	8.06K	19.1K	44.2K ^{PRP}	86.6K	169K	324K	634K	3.01M
90.9Ω ^{PRP}	432Ω	976Ω	2.00K ^{PRP}	4.22K	8.25K	19.6K ^{PRP}	45.3K	88.7K	174K	332K	649K	3.32M
100Ω ^{PRP}	453Ω	1.00K ^{PRP}	2.10K	4.32K	8.45K	20.0K	46.4K	90.9K	178K	340K	665K	3.65M
110Ω ^{PRP}	475Ω ^{PRP}	1.02K	2.21K ^{PRP}	4.42K	8.66K	21.0K	47.0K ^{PRP}	93.1K	182K	348K	681K	
121Ω ^{PRP}	499Ω	1.05K	2.26K	4.53K	8.87K	22.1K ^{PRP}	48.7K ^{PRP}	95.3K ^{PRP}	187K	357K	698K	
130Ω	511Ω	1.07K	2.37K ^{PRP}	4.64K	9.09K	23.2K	49.9K	97.6K ^{PRP}	191K	365K	715K	
140Ω	523Ω	1.10K	2.43K	4.75K ^{PRP}	9.31K ^{PRP}	24.3K ^{PRP}	51.1K	100K ^{PRP}	196K	374K	732K	
150Ω ^{PRP}	549Ω	1.15K	2.49K	4.87K	9.53K ^{PRP}	24.9K	52.3K	102K	200K	383K	750K	Values marked "PRP" indicate the 0.5W has been replaced with a PRP.
162Ω	562Ω	1.21K	2.55K	4.99K ^{PRP}	9.76K ^{PRP}	25.5K	53.6K	105K	205K	392K	768K	
174Ω	576Ω	1.24K	2.61K	5.11K	10.0K ^{PRP}	26.1K	54.9K	107K	210K	402K	781K	
187Ω	604Ω	1.27K	2.67K	5.23K	10.2K ^{PRP}	27.4K	56.2K ^{PRP}	110K	215K	412K	787K	
200Ω	619Ω	1.30K	2.70K	5.36K	10.5K ^{PRP}	28.7K	57.6K	113K	221K	422K	806K	
210Ω	649Ω	1.33K	2.74K	5.49K	11.0K	29.4K	59.0K	115K	228K	432K	825K	

* H4 .5W available in all values listed above except 4.02M & 4.99M
 * 1.0Ω and 3.01Ω H4 = \$1.85 each (no PRP manufactured below 5Ω)
 * 10Ω through 15Ω H4 = 65¢ each (PRP are 45¢)
 * 20Ω through 976K H4 = 45¢ each (PRP are 45¢)
 * 1.0M through 1.78M H4 = 65¢ each (PRP ≥1.21M are 65¢)

* 2.0M through 3.65M H4 = 80¢ each
 * 25 - 50 pieces per value deduct 10%
 * 50 - 100 pieces per value deduct 20%, 100+ per value deduct 25%
 All sales final on Resista, Holco & PRP resistors, no returns please!

CADDOCK MP-820/821 Kool-Tab Power Film Resistor

- * Non-Inductive, 50ppm TCR $\geq 5\Omega$, 100ppm $\leq 4\Omega$, values $\geq 10\Omega=1\%$, $\leq 8\Omega=5\%$, Micronox film bonded to copper tab.
- * 20 Watts at 25°C if resistor is mounted on appropriate heat sink or chassis, 2.25W at 25°C in free air without a heat sink.
- * 300V maximum working voltage, momentary permissible overload is 2X rated power @1.5 x VMax for 5 seconds.
- * Superb transparency for tweeter networks, perhaps too fragile for some midrange/woofer networks, excellent in electronics.
- * Heatsinks... 20W (2" x 2" x 1.25") @\$1.85, 10W (1" x 1" x 1.5") @65¢, 5W clip on 1" square @55¢, 6.5gr heat sink grease @\$1.75
- * Deduct 10% for 10+ per value. See page 15 for high performance thermal grease!

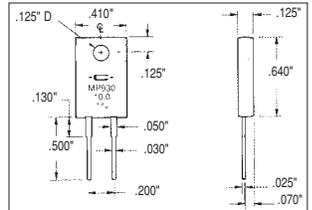


.10Ω...\$10.95	3.50Ω...9.50	7.50Ω...9.50	33.2Ω...8.50	221Ω...8.50	549Ω...8.50	909Ω...8.50	2.49K...8.50	5.49K...8.50	9.09K...8.50
.50Ω...10.95	4.00Ω...9.50	8.00Ω...9.50	49.9Ω...8.50	249Ω...8.50	604Ω...8.50	1.00K...8.50	3.01K...8.50	6.04K...8.50	9.53K...8.50
1.00Ω...9.50	4.50Ω...9.50	10.0Ω...8.50	75.0Ω...8.50	301Ω...8.50	619Ω...8.50	1.21K...8.50	3.48K...8.50	6.49K...8.50	10.0K...8.50
1.50Ω...9.50	5.00Ω...9.50	12.0Ω...8.50	100Ω...8.50	332Ω...8.50	681Ω...8.50	1.50K...8.50	4.02K...8.50	6.98K...8.50	
2.00Ω...9.50	6.00Ω...9.50	14.0Ω...8.50	150Ω...8.50	402Ω...8.50	750Ω...8.50	1.74K...8.50	4.53K...8.50	7.50K...8.50	
2.50Ω...9.50	6.50Ω...9.50	16.0Ω...8.50	174Ω...8.50	453Ω...8.50	825Ω...8.50	2.00K...8.50	4.75K...8.50	8.06K...8.50	
3.00Ω...9.50	7.00Ω...9.50	22.1Ω...8.50	200Ω...8.50	499Ω...8.50	866Ω...8.50	2.21K...8.50	4.99K...8.50	8.45K...8.50	



CADDOCK MP-930 Kool-Pak Power Film Resistor

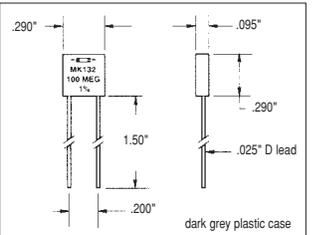
- * Non-Inductive, 1% tolerance, TCR 100ppm, 250V max. working voltage, Micronox film fired onto a flat ceramic substrate.
- * 30 Watts at 25°C if resistor is mounted on appropriate heat sink or chassis, 2.25W at 25°C in free air without a heat sink.
- * Momentary permissible overload is 1.5X rated power @1.5 x 250VMax for 5 seconds, leads are copper paddle type.
- * Values 5.0K and above are MP-925 type, identical to MP-930 except are 25W with a higher maximum voltage of 500V.
- * Less Expensive alternative to MP-820 within range of values produced with somewhat higher power rating.
- * See MP-820 above for heat sinks. 0.10Ω to 8Ω @\$6.50 10Ω to 100K @\$5.95 each Deduct 10% for 10+ per value



.10Ω	1.0Ω	3.0Ω	7.5Ω	20.0Ω	50.0Ω	200Ω	560Ω	3.00K	7.50K	25.0K	47.0K	75.0K
.20Ω	1.5Ω	3.3Ω	8.0Ω	25.0Ω	75.0Ω	250Ω	750Ω	3.30K	10.0K	30.0K	50.0K	82.0K
.33Ω	2.0Ω	4.0Ω	10.0Ω	30.0Ω	100Ω	330Ω	1.00K	4.00K	15.0K	33.0K	56.0K	100K
.50Ω	2.5Ω	5.0Ω	15.0Ω	40.0Ω	150Ω	470Ω	2.00K	5.00K	20.0K	40.0K	68.0K	

CADDOCK MK-132 Precision Power Film Resistor

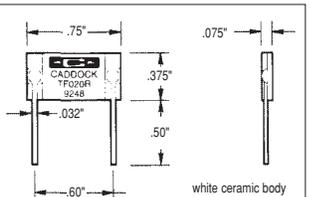
- * Non-Inductive, 50PPM Temperature Coefficient (5Ω-5MΩ), 1% tolerance, .75W full power rated to 125° C, 400VMax.
- * Constructed with Caddock Micronox film fired onto ceramic substrate with tinned copper round wire radial leads.
- * Excellent resistor for moderate power applications, very conservative .75W rating in a very compact package. These are an excellent alternative to the Vishay S102 where higher power is required, or to the Caddock TF-020 where smaller size, power, or values below 1.0K are required. Extended life stability is typically better than .1% per 1000 hours.
- * All values listed below are stock, the widest inventoried assortment from any supplier. If you would like a data sheet on our Caddock resistors, please send a S.A.S.E. or request enclosure with any parts order. Deduct 10% for 10+ per value.



1.0Ω...\$7.50	150Ω...3.95	845Ω...3.95	2.74K...3.95	5.76K...3.95	9.31K...3.95	26.2K...3.95	68.1K...3.95	210K...4.95	523K...4.95	2.00M...6.25
4.99Ω...7.50	174Ω...3.95	909Ω...3.95	2.87K...3.95	6.04K...3.95	9.53K...3.95	27.4K...3.95	71.5K...3.95	221K...4.95	549K...4.95	2.21M...6.25
7.50Ω...7.50	200Ω...3.95	1.00K...3.95	3.01K...3.95	6.19K...3.95	9.76K...3.95	28.7K...3.95	75.0K...3.95	232K...4.95	562K...4.95	2.49M...6.25
10.0Ω...7.50	221Ω...3.95	1.10K...3.95	3.16K...3.95	6.49K...3.95	10.0K...3.95	30.1K...3.95	78.7K...3.95	249K...4.95	576K...4.95	3.01M...6.25
15.0Ω...7.50	249Ω...3.95	1.21K...3.95	3.32K...3.95	6.65K...3.95	10.5K...3.95	31.6K...3.95	82.5K...3.95	261K...4.95	604K...4.95	3.32M...6.25
22.1Ω...7.50	301Ω...3.95	1.31K...3.95	3.48K...3.95	6.81K...3.95	11.0K...3.95	33.2K...3.95	86.6K...3.95	274K...4.95	619K...4.95	4.02M...6.25
24.9Ω...7.50	332Ω...3.95	1.40K...3.95	3.65K...3.95	6.98K...3.95	12.1K...3.95	34.0K...3.95	90.9K...3.95	287K...4.95	649K...4.95	4.99M...6.25
30.1Ω...4.95	365Ω...3.95	1.50K...3.95	3.83K...3.95	7.15K...3.95	13.0K...3.95	35.7K...3.95	95.3K...3.95	301K...4.95	681K...4.95	7.49M...6.25
40.2Ω...4.95	402Ω...3.95	1.62K...3.95	4.02K...3.95	7.32K...3.95	14.0K...3.95	38.3K...3.95	100K...4.95	316K...4.95	715K...4.95	10.00M...6.25
49.9Ω...4.95	475Ω...3.95	1.74K...3.95	4.32K...3.95	7.49K...3.95	15.0K...3.95	41.2K...3.95	110K...4.95	332K...4.95	750K...4.95	
60.4Ω...4.95	499Ω...3.95	1.80K...3.95	4.53K...3.95	7.68K...3.95	16.2K...3.95	44.2K...3.95	121K...4.95	348K...4.95	806K...4.95	
68.1Ω...4.95	549Ω...3.95	1.82K...3.95	4.75K...3.95	7.87K...3.95	17.4K...3.95	47.0K...3.95	130K...4.95	365K...4.95	845K...4.95	
75.0Ω...4.95	602Ω...3.95	1.91K...3.95	4.99K...3.95	8.06K...3.95	18.2K...3.95	49.9K...3.95	140K...4.95	383K...4.95	909K...4.95	
84.5Ω...4.95	649Ω...3.95	2.00K...3.95	5.11K...3.95	8.25K...3.95	19.1K...3.95	52.3K...3.95	150K...4.95	402K...4.95	953K...4.95	
90.0Ω...4.95	681Ω...3.95	2.10K...3.95	5.23K...3.95	8.45K...3.95	20.0K...3.95	54.9K...3.95	162K...4.95	422K...4.95	1.00M...6.25	
100Ω...3.95	715Ω...3.95	2.21K...3.95	5.36K...3.95	8.66K...3.95	21.0K...3.95	57.6K...3.95	174K...4.95	453K...4.95	1.21M...6.25	
110Ω...3.95	749Ω...3.95	2.32K...3.95	5.49K...3.95	8.87K...3.95	22.1K...3.95	60.4K...3.95	187K...4.95	475K...4.95	1.50M...6.25	
121Ω...3.95	806Ω...3.95	2.49K...3.95	5.62K...3.95	9.09K...3.95	24.9K...3.95	64.9K...3.95	200K...4.95	499K...4.95	1.74M...6.25	

CADDOCK TF020 Ultra-Precision Film Resistor

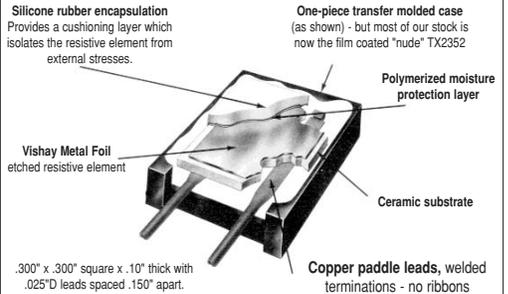
- * Non-Inductive oxide design, 15ppm/°C TCR, 1% tolerance, .33 Watt to 70° Centigrade, 300V maximum operating voltage.
- * Constructed with Caddock Tetrinox film for long term stability of .01%/1000 hours, tinned copper round wire radial leads.
- * Excellent alternative to the more costly Vishay S102, and preferred over the S102 by some, particularly at higher Ω values where there is also a considerable cost savings. This is absolutely the most transparent resistor Caddock manufactures and ideal for ultra critical applications where the best possible sound is required. Values below 1.00K are identical USF340, but 0.1% & 5ppm
- Please take careful note of large physical size (.750" wide by .375" high). Deduct 10% for 10+ per value.



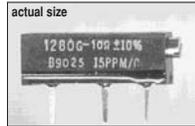
50Ω...\$6.95	1.82K...6.50	4.02K...6.50	6.81K...6.50	9.76K...6.50	27.4K...6.50	66.0K...6.50	162K...7.25	365K...7.25	715K...9.25
100Ω...6.95	1.91K...6.50	4.32K...6.50	6.98K...6.50	10.0K...6.50	28.7K...6.50	68.1K...6.50	174K...7.25	383K...7.25	750K...9.25
200Ω...6.95	2.00K...6.50	4.53K...6.50	7.15K...6.50	10.5K...6.50	30.1K...6.50	71.5K...6.50	187K...7.25	402K...7.25	787K...9.25
350Ω...6.95	2.10K...6.50	4.75K...6.50	7.32K...6.50	11.0K...6.50	31.6K...6.50	75.0K...6.50	200K...7.25	422K...7.25	806K...9.25
400Ω...6.95	2.21K...6.50	4.99K...6.50	7.49K...6.50	12.1K...6.50	33.2K...6.50	78.7K...6.50	210K...7.25	453K...7.25	845K...9.25
500Ω...6.95	2.32K...6.50	5.11K...6.50	7.68K...6.50	13.0K...6.50	35.7K...6.50	82.5K...6.50	221K...7.25	475K...7.25	909K...11.50
700Ω...6.95	2.49K...6.50	5.23K...6.50	7.87K...6.50	14.0K...6.50	38.3K...6.50	86.6K...6.50	232K...7.25	499K...7.25	953K...11.50
1.00K...6.50	2.74K...6.50	5.36K...6.50	8.06K...6.50	15.0K...6.50	41.2K...6.50	90.9K...7.25	249K...7.25	523K...9.25	976K...11.50
1.10K...6.50	2.87K...6.50	5.49K...6.50	8.25K...6.50	16.2K...6.50	44.2K...6.50	95.3K...7.25	261K...7.25	549K...9.25	1.0M...11.50
1.21K...6.50	3.01K...6.50	5.62K...6.50	8.45K...6.50	17.4K...6.50	47.0K...6.50	100K...7.25	274K...7.25	562K...9.25	1.21M...11.50
1.30K...6.50	3.16K...6.50	5.76K...6.50	8.66K...6.50	18.2K...6.50	49.9K...6.50	110K...7.25	287K...7.25	576K...9.25	1.50M...11.50
1.40K...6.50	3.32K...6.50	6.04K...6.50	8.87K...6.50	19.1K...6.50	54.9K...6.50	121K...7.25	301K...7.25	604K...9.25	1.74M...11.50
1.50K...6.50	3.48K...6.50	6.19K...6.50	9.09K...6.50	20.0K...6.50	57.6K...6.50	130K...7.25	316K...7.25	619K...9.25	2.00M...11.50
1.62K...6.50	3.65K...6.50	6.49K...6.50	9.31K...6.50	22.1K...6.50	60.4K...6.50	140K...7.25	332K...7.25	649K...9.25	
1.74K...6.50	3.83K...6.50	6.65K...6.50	9.53K...6.50	24.9K...6.50	64.9K...6.50	150K...7.25	348K...7.25	681K...9.25	

TX2352 "Nude" VISHAY Bulk Foil Resistors

- *S102 chip non-inductive bulk metal foil resistor, TCR $\pm 2.0\text{ppm}$ max, radial lead package, copper leads.
- *Nominal tolerance is 1% but measures typically $\leq 25\%$, Current noise $< 0.25\mu\text{V/volt}$ of applied voltage.
- *Values below 100K = .6W/70°C, values above 100K = .4W/70°C, 300VDC maximum voltage.
- *All values below are stock, any custom value from 1 Ω -250K is available as a special order, allow two - four week lead time. Most of our stock is now the "nude" type without the epoxy case for better sonics.



Vishay 1280G trimming potentiometers: Bulk metal foil pc mount type, much superior to any cermet or conductive plastic trimmer, the best available... .75W, 15ppm, 26 turns for ultra-precise adjustment... \$12.50 each except 10 Ω @\$13.50
 10 Ω 20 Ω 50 Ω 100 Ω 200 Ω 500 Ω 1.0K 2.0K 5.0K 10.0K 20.0K



All values below stock as a "nude" TX2352, but we do have limited epoxy encased S102K stock, or can special order them for you, most values at a +\$4 premium - ask. We also stock most values as ultra low TCR "nude" Z-foil TX2575 (\$6 to \$10 premium) and can special order any value to 100K - ask if these are of interest to you.

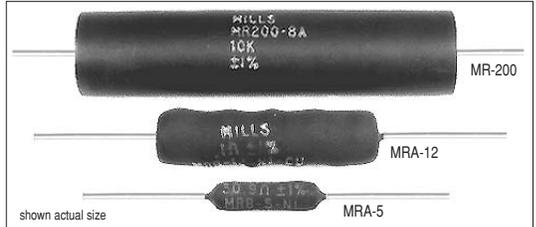
1.00 Ω\$11.95	121 Ω.....11.95	499 Ω.....11.95	1.10K.....11.95	2.49K.....11.95	6.19K.....11.95	13.0K.....11.95	33.2K.....13.95	115.0K.....23.95
4.99 Ω.....11.95	130 Ω.....11.95	511 Ω.....11.95	1.15K.....11.95	2.74K.....11.95	6.49K.....11.95	14.0K.....11.95	38.3K.....13.95	121.0K.....23.95
10.0 Ω.....11.95	150 Ω.....11.95	549 Ω.....11.95	1.21K.....11.95	2.87K.....11.95	6.81K.....11.95	15.0K.....11.95	44.2K.....13.95	127.0K.....23.95
15.0 Ω.....11.95	174 Ω.....11.95	562 Ω.....11.95	1.31K.....11.95	3.01K.....11.95	6.98K.....11.95	16.2K.....11.95	47.0K.....13.95	130.0K.....23.95
20.0 Ω.....11.95	200 Ω.....11.95	619 Ω.....11.95	1.37K.....11.95	3.32K.....11.95	7.15K.....11.95	17.4K.....11.95	49.9K.....13.95	137.0K.....23.95
25.0 Ω.....11.95	210 Ω.....11.95	681 Ω.....11.95	1.40K.....11.95	3.65K.....11.95	7.49K.....11.95	17.8K.....11.95	53.6K.....17.95	140.0K.....23.95
30.0 Ω.....11.95	221 Ω.....11.95	698 Ω.....11.95	1.50K.....11.95	3.90K.....11.95	7.87K.....11.95	18.2K.....11.95	54.9K.....17.95	150.0K.....23.95
35.0 Ω.....11.95	249 Ω.....11.95	715 Ω.....11.95	1.54K.....11.95	4.02K.....11.95	8.06K.....11.95	19.1K.....11.95	57.6K.....17.95	162.0K.....35.50
40.0 Ω.....11.95	274 Ω.....11.95	750 Ω.....11.95	1.62K.....11.95	4.32K.....11.95	8.25K.....11.95	20.0K.....11.95	64.9K.....17.95	174.0K.....35.50
50.0 Ω.....11.95	301 Ω.....11.95	787 Ω.....11.95	1.74K.....11.95	4.75K.....11.95	8.45K.....11.95	21.5K.....12.95	68.1K.....17.95	182.0K.....35.50
60.0 Ω.....11.95	332 Ω.....11.95	825 Ω.....11.95	1.82K.....11.95	4.99K.....11.95	9.09K.....11.95	22.1K.....12.95	75.0K.....17.95	200.0K.....35.50
68.1 Ω.....11.95	374 Ω.....11.95	845 Ω.....11.95	1.91K.....11.95	5.11K.....11.95	9.53K.....11.95	24.9K.....12.95	82.5K.....23.95	249.0K.....39.50
75.0 Ω.....11.95	390 Ω.....11.95	866 Ω.....11.95	2.00K.....11.95	5.22K.....11.95	10.0K.....11.95	25.5K.....12.95	90.9K.....23.95	
90.9 Ω.....11.95	402 Ω.....11.95	909 Ω.....11.95	2.10K.....11.95	5.49K.....11.95	10.5K.....11.95	27.4K.....12.95	94.5K.....23.95	10+ per value deduct 10%
100 Ω.....11.95	432 Ω.....11.95	976 Ω.....11.95	2.21K.....11.95	5.62K.....11.95	11.0K.....11.95	28.7K.....12.95	100.0K.....23.95	S102/TX only
110 Ω.....11.95	475 Ω.....11.95	1.00K.....11.95	2.40K.....11.95	6.04K.....11.95	12.1K.....11.95	31.6K.....13.95	110.0K.....23.95	

Vishay VSH bulk foil radial lead resistors, available in most of the values above from 5.0 Ω to 120K, .3W

Compact with a conformal coating, excellent sonics, super value - check stock as we have limited inventory... 5 Ω to $\leq 50\text{K}$ @\$3.95 $\geq 51\text{K}$ to $\leq 75\text{K}$ @\$4.95 $\geq 76\text{K}$ to 120K @\$6.50

MLLS Non-Inductive Wire Wound Resistors

- * MR-200-8 (2 watt) low reactance type for high speed pulse, minimum phase shift applications 1% tolerance copper leads, 1000V Maximum, 10ppm TCR, .50" Diameter x 2.0" Long
- * MRA-5 (5watt) non-inductively wound, very compact size for its power rating, copper leads 1% tolerance, 50ppm TCR $< 10\Omega$, 20ppm $> 10\Omega$, .167" Diameter x .650" Long
- * MRA-12 (12W) non-inductively wound, very compact size for its power rating, copper leads, 1% tolerance, 50ppm TCR $< 10\Omega$, 20ppm $> 10\Omega$, .312" Diameter x 1.28" Long
- * Superb resistors for electronics and loudspeaker crossovers. Deduct 10% for 25+ pieces per value.

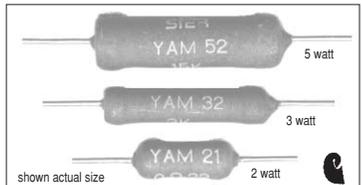


MR-200	499K...\$7.95	MRA-5	17.5 Ω ...\$3.95	402 Ω ...\$3.95	2.21K...\$4.75	10.0K...\$5.25	MRA-12	6.0 Ω ...\$4.95	60.4 Ω ...\$4.95	909 Ω ...\$5.45	14.0K...\$7.25
2.49K...\$5.95	549K...7.95	.10 Ω ...\$3.50	20.0 Ω ...3.95	453 Ω ...3.95	2.49K...4.75	11.0K...5.25	.10 Ω ...\$4.95	6.5 Ω ...4.95	68.1 Ω ...4.95	1.00K...5.45	15.0K...7.25
3.01K...5.95	604K...9.50	.15 Ω ...3.50	22.1 Ω ...3.95	475 Ω ...3.95	2.74K...4.75	12.1K...5.25	.22 Ω ...4.95	7.0 Ω ...4.95	75.0 Ω ...4.95	1.50K...5.45	16.2K...7.25
3.32K...5.95	750K...9.50	.22 Ω ...3.50	24.9 Ω ...3.95	499 Ω ...3.95	3.01K...4.75	13.0K...5.25	.33 Ω ...4.95	7.5 Ω ...4.95	90.9 Ω ...4.95	2.00K...5.45	17.4K...7.25
4.99K...5.95	1.0M...14.95	.27 Ω ...3.50	30.9 Ω ...3.95	549 Ω ...4.25	3.32K...4.75	14.0K...5.25	.50 Ω ...4.95	8.0 Ω ...4.95	100 Ω ...4.95	2.21K...5.45	18.2K...7.75
7.50K...5.95		.33 Ω ...3.50	40.2 Ω ...3.95	576 Ω ...4.25	3.65K...4.75	15.0K...5.25	.75 Ω ...4.95	9.0 Ω ...4.95	121 Ω ...4.95	2.49K...5.75	20.0K...7.75
12.1K...5.95		.39 Ω ...3.50	47.0 Ω ...3.95	602 Ω ...4.25	4.02K...5.25	16.2K...5.25	1.00 Ω ...4.95	10.0 Ω ...4.95	150 Ω ...4.95	3.01K...5.75	22.1K...7.75
17.4K...5.95		.47 Ω ...3.50	49.9 Ω ...3.95	649 Ω ...4.25	4.32K...5.25	18.2K...5.25	1.25 Ω ...4.95	11.0 Ω ...4.95	174 Ω ...4.95	3.32K...5.75	24.9K...7.75
20.0K...5.95		.68 Ω ...3.50	60.2 Ω ...3.95	698 Ω ...4.25	4.75K...5.25	20.0K...5.25	1.50 Ω ...4.95	12.0 Ω ...4.95	200 Ω ...4.95	4.02K...5.75	27.4K...7.75
22.1K...5.95		.75 Ω ...3.50	75.0 Ω ...3.95	750 Ω ...4.25	4.99K...5.25		1.75 Ω ...4.95	13.0 Ω ...4.95	221 Ω ...4.95	4.75K...6.75	30.1K...7.75
27.4K...5.95		1.0 Ω ...3.95	90.9 Ω ...3.95	825 Ω ...4.25	5.11K...5.25		2.00 Ω ...4.95	14.0 Ω ...4.95	249 Ω ...4.95	4.99K...6.75	33.2K...7.75
30.1K...5.95		1.5 Ω ...3.95	100 Ω ...3.95	909 Ω ...4.25	5.36K...5.25		2.2 Ω ...4.95	15.0 Ω ...4.95	301 Ω ...4.95	5.49K...6.75	36.5K...7.75
38.3K...5.95		2.0 Ω ...3.95	121 Ω ...3.95	953 Ω ...4.25	5.49K...5.25		2.5 Ω ...4.95	16.0 Ω ...4.95	332 Ω ...4.95	6.49K...6.75	40.2K...7.75
61.9K...5.95		2.5 Ω ...3.95	150 Ω ...3.95	1.00K...4.25	5.62K...5.25		2.7 Ω ...4.95	18.0 Ω ...4.95	402 Ω ...5.45	7.49K...6.75	44.2K...7.75
75.0K...5.95		3.0 Ω ...3.95	174 Ω ...3.95	1.10K...4.25	6.04K...5.25		3.0 Ω ...4.95	20.0 Ω ...4.95	453 Ω ...5.45	8.25K...7.25	49.9K...7.75
174K...5.95		4.0 Ω ...3.95	200 Ω ...3.95	1.21K...4.25	6.19K...5.25		3.3 Ω ...4.95	22.1 Ω ...4.95	475 Ω ...5.45	8.66K...7.25	54.9K...7.75
187K...5.95		5.11 Ω ...3.95	221 Ω ...3.95	1.30K...4.25	6.49K...5.25		3.5 Ω ...4.95	24.9 Ω ...4.95	499 Ω ...5.45	9.09K...7.25	60.4K...7.75
200K...6.50		6.00 Ω ...3.95	249 Ω ...3.95	1.37K...4.25	6.81K...5.25		4.0 Ω ...4.95	30.9 Ω ...4.95	549 Ω ...5.45	9.53K...7.25	68.1K...7.75
221K...6.50		7.50 Ω ...3.95	274 Ω ...3.95	1.43K...4.25	7.49K...5.25		4.5 Ω ...4.95	34.8 Ω ...4.95	604 Ω ...5.45	10.0K...7.25	75.0K...7.75
301K...6.95		10.0 Ω ...3.95	301 Ω ...3.95	1.50K...4.25	8.25K...5.25		4.7 Ω ...4.95	40.2 Ω ...4.95	681 Ω ...5.45	11.0K...7.25	82.5K...7.75
402K...7.95		12.5 Ω ...3.95	332 Ω ...3.95	1.74K...4.25	8.66K...5.25		5.00 Ω ...4.95	47.0 Ω ...4.95	750 Ω ...5.45	12.1K...7.25	90.9K...7.75
475K...7.95		15.0 Ω ...3.95	374 Ω ...3.95	2.00K...4.75	9.53K...5.25		5.5 Ω ...4.95	49.9 Ω ...4.95	825 Ω ...5.45	13.0K...7.25	

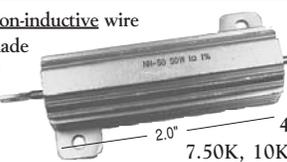
BE YAMAMURA Wirewound Resistors:
 Manufactured by the SFernice division of Vishay to the specifications of Be Yamamura, these superb resistors are very popular with Japanese audiophiles. Three types represented here, the YAM-22 two watt, YAM-32 three watt, and YAM-52 five watt, all 5%.

0.10 Ω 2W...\$7.50	5.0K 3W...14.95
0.10 Ω 5W...9.95	5.6K 3W...14.95
0.22 Ω 5W...9.95	
0.50 Ω 2W...9.95	
2.0 Ω 2W...7.50	
3.0 Ω 2W...9.95	
30 Ω 2W...9.95	
33 Ω 2W...9.95	
300 Ω 2W...9.95	

Quantities limited and these resistors are no longer in production, so best to check before ordering.



50W NI POWER RESISTORS: 1%, 50ppm, 50 watt, 890VDC, non-inductive wire wound resistors with gold anodized aluminum finned case custom made for us. 50 watt rating at 25°C applies only if mounted on a 12" x 12" x .059" aluminum panel or equivalent heat sink. Derate to 20 watts at 25°C if not mounted on a heat sink. Tinned copperweld eyelet terminals, .625" Diameter x 2.0" Long.



.50 Ω , 1.0 Ω , 1.5 Ω , 2.0 Ω , 2.5 Ω , 3.0 Ω , 3.5 Ω , 4.0 Ω , 5.0 Ω , 5.5 Ω , 6.0 Ω , 6.5 Ω , 7.0 Ω , 7.5 Ω , 8.0 Ω , 9.0 Ω , 10 Ω , 12 Ω , 14 Ω , 15 Ω , 16 Ω , 18 Ω , 20 Ω , 22 Ω , 25 Ω , 30 Ω , 40 Ω , 50 Ω , 60 Ω , 75 Ω , 100 Ω , 121 Ω , 150 Ω , 174 Ω , 200 Ω , 221 Ω , 249 Ω , 300 Ω , 400 Ω , 499 Ω , 600 Ω , 750 Ω , 875 Ω , 1.0K, 1.5K, 2.0K, 3.01K, 4.99K, 7.50K, 10K, 15K, 20K, 33K, 50K... \$6.95 each Deduct 10% for 10+ per value.

ROTARY SWITCHES/ATTENUATOR KITS

ATTENUATORS: I stock 45 position Shallco and 24 position Elma rotary switches for building attenuators. There are three configurations commonly used that you may opt for in building attenuators with these controls. Any of these assembled with Holco/PRP and or Vishay resistors will outperform an off the shelf pot from any manufacturer (P&G included)! Enclosed with any attenuator kit are instructions and a spreadsheet showing the correct resistor for each position and a graph of the attenuator taper. We have a good selection of tapers and resistance values available.

*Ladder L-Pad: usually constructed as a pair of mono controls, this type control features a switchable series and shunt resistor for each position so the audio signal passes through only a single series element no matter how many dB of attenuation, input impedance is constant, output impedance varies, absolutely the best choice for interstage use in electronics where constant load is desired, excellent for passive preamps too, Vishays can be used for primary positions.

*Fixed series/variable shunt: stereo or dual mono commonly used, eliminates switch contacts for the series element which is permanently soldered single resistor, making use of a Vishay cost effective, switches only the shunt element, purist design, but input impedance varies with every setting, not desirable interstage in electronics but workable in a passive design, particularly with more limited ranges of attenuation. For budget applications this design is occasionally used with a pot for the shunt element rather than a costly rotary switch and discrete resistors.

*Series Attenuator: for compact stereo attenuators, a string of resistors encircles the control, the sum of which equals the impedance of the control, the greater the degree of attenuation, the greater the number of resistors the signal must pass through, input impedance is constant so use interstage in electronics is a common application, good for passive preamps also and the sonics are surprisingly good if quality resistors are used, practical budget alternative to an L-Pad.

Please note that assembling an attenuator with either the Shallco or Elma switches requires a high degree of soldering skill and a great deal of care and precision!

SHALLCO rotary switches: For constructing mono L pads, series style attenuators, and selector switches, I stock the 45 position two deck, single pole per deck shorting type featuring solid silver contacts, silver alloy bifurcated wipers, 10A rating $\leq 002\Omega$ contact resistance, 3/8" bushing mount, 1/4" shaft. Standard taper for attenuators is 1db per step starting from 0dB attenuation with a few bigger steps at the lowest volume settings. Fully assembled each Shallco attenuator requires a footprint 2.25" square by 4.50" deep behind your faceplate. Six position selector can be implemented as shorting or non-shorting.

*45 position shorting switch for attenuators (2.25" square x 3.75" deep)... \$139.00 each *6 position two pole single deck for selector... \$135.00

*Complete dual mono ladder L-Pad attenuator kit with two 45 position switches and 176 Holco/PRP resistors, specify impedance... \$358.00

*Stereo series attenuator kit with one 45 position switch and 90 Holco/PRP resistors, specify impedance... \$180.50

ELMA rotary switches: Compact Swiss made rotary switches with 10 μ m silver coated, .2 μ m gold flashed copper and brass contacts, 2A rated, <10m Ω R, 32-33mm D, 3/8"+ bushing mount, 6mm shaft diameter, available in single pole per deck to 24 positions, and up to six poles per deck with fewer positions, shorting and non-shorting. Excellent for selector switches and for building more compact attenuators Below are stock, others are available with 2-3 week lead time (send S.A.S.E. for data sheet). Several 24 position types are stocked for attenuator applications. The 04-2130 features their standard premium grade construction but does exhibit some slight contact bounce which may cause varying degrees of transient noise when switching between positions, usually insignificant but this could be a problem in some applications so beware! The BV switches were specifically designed for attenuator applications and have no contact bounce: they utilize PC boards for each deck with special trace material for the contacts.

*(BV22561) 24 position special attenuator switch for mono fixed or series resistor control, shorting type single pole per deck, single deck... \$39.00

*04A2R00 @\$138.00 (four deck for 2 channel L-pad)

04A2A00 @\$86.00 (two deck 2 channel series attenuator) please ask for further details on the 04R & 04A switches rotary switches

*(04-2133) two deck shorting 24 position for mono L-Pads or stereo series attenuators, see note above regarding contact bounce... \$85.00

Dual mono L-Pad kit with two 04-2133 Elma's and 92 Holco/PRP resistors... \$183.00 (requires 2.25" depth, 1.25" diameter when assembled)

Stereo series attenuator with a single 04-2133 Elma and 46 Holco/PRP resistors... \$106.00 (requires 2.125" depth, 1.25" diameter when assembled)

*(04-1130) single deck shorting 24 position for mono series attenuators or fixed series/variable shunt type, see note above... \$38.00

*(04-1121) 12 position, useful as a mono selector, switching hot of a single channel, non-shorting, single pole, single deck... \$37.50

*(04-2121) 12 position, useful as a stereo selector switch, non-shorting, single pole per deck, two deck... \$61.50

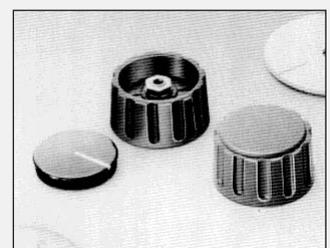
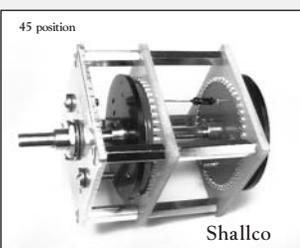
*(04-1264) 6 position, useful as a stereo selector switch, non-shorting, two pole per deck, single deck... \$47.50 (most popular selector switch)

*(04-2264) 6 position, useful as a stereo selector switch for those who wish to switch both hots and grounds or for use in balanced equipment as a stereo selector switching inverting and non inverting signals, non-shorting, two pole per deck, two deck... \$86.95

*(04-4121) 12 position, stereo selector switch for those who wish to switch both hots and grounds or for use in balanced equipment as a stereo selector switching inverting and non inverting signals, non-shorting, single pole per deck, four deck... \$110.00

ELMA knobs: 36mm D, matte black finish, collet fixture (not a set screw!) for positive non slip attachment, specify 6mm (Elma, Alps, & Noble) or 1/4" (Shallco & most US rotaries) shaft diameter... \$5.75 each 28mm D smooth finish black knob for 6mm shaft with clear dial & black numbers 1-24... \$5.95

Note that we stock (and have stockpiled) where possible the now discontinued Elma 04 switches with the gold flash over silver plated contacts (part #'s ending in "0" or "1"), in preference to the hard gold over nickel plated contact type (part #'s ending in "3" or "4"). We believe the gold flash over silver plated contacts have better sonics (and lower \$\$) than those with the magnetic nickel sub-plating, but unfortunately they are no longer manufactured.



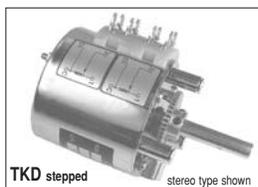
TKD Stepped Attenuator: Highly regarded assembled attenuator. Discrete resistive elements are used for each position in a series configuration assuring very precise tracking between channels. Mounting is accomplished by three standoffs and screws on the front of the control so only a hole large enough for the 6mm shaft is required in your faceplate. Each mono control requires a footprint 2.125" H x 1.75" W and 1.6" deep behind your front panel. The shaft length is 1", less the thickness of your faceplate. 40 steps (1dB steps to -24dB, 1.5dB steps to -31.5dB, -33.5, -37.5, -39.5, -42, -45, -48.5, -53, -58, -65dB)
no more stereo's available - mono only 100K @\$195.00/mono attenuator (one piece 10K & 50K available @\$95)

TKD Potentiometers: Conductive plastic element CP2500 series volume and balance controls, 25mm square by 27mm deep with 9mm threaded bushing mount, solder lugs, no-detents, log taper 10K, 25K, 50K, 100K, 250K, 500K... \$85/stereo \$52/mono \$98/balance (no 500K) \$129.00/10K, 25K, 50K, 100K motorized 16mm square CP600 series 10K, 50K, 100K mono @\$24.95 each stereo @\$29.95 each

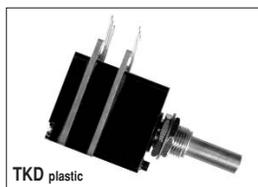
ALPS Black Beauty Potentiometers: Popular 40mm high end potentiometer, some are detented, some smooth, no longer manufactured: 34mm high x 40mm wide x 30mm deep, 8mm threaded bushing mount, 6mm D x 32mm L solid round aluminum shaft, solder lug eyelets, easily cut to desired length. 250K mono potentiometer... \$30.00 100K/250K balance controls... \$39.00 sorry - no more stereo pots available

T

NOBLE AP25 Potentiometers: Excellent low cost stereo potentiometer, 27mm square x 30mm deep black metal case, 8mm threaded bushing mount, 6mm solid round aluminum shaft that extends .75" past bushing, no detents, pc mount, log taper, with loudness tap - 250K stereo @\$24.95 100K balance @\$24.95



TKD stepped stereo type shown



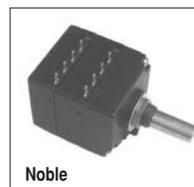
TKD plastic



TKD motorized



Alps motorized



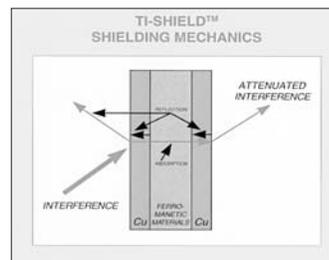
Noble

TOCOS Toggle Switches: Superior quality silver contact, 6A/125V, 3A/250V rated, solder lug terminal miniature toggle switches, available with short or long chrome paddle handles (no long handle SPDT). Short handle type supplied if you do not specify. Tocos jointly owned the switch patents with Sagami, and the latter company went bankrupt, so these superb switches are not currently in production - get them while you can!
~~SPDT on/on... \$3.95 DPDT on/on... \$5.95~~ DPDT on/off/on... \$6.50 4PDT on/on... \$11.50 4PDT on/off/on... \$11.50

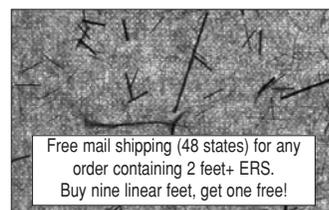


TI SHIELD: Unique composite shielding material from Texas Instruments for blocking EMI & RFI interference. Conventional shielding materials excel either in electrical conductivity or magnetic permeability, but not both. Steel is not conductive enough to be effective at blocking high frequencies, while copper and aluminum are not effective at absorbing low frequency EMI. No single material met both of these requirements until TI developed this copper/alloy 49/copper composite material. TI Shield is effective from below 10Hz up to 10GHz and is currently available only in .014" thickness (28-29ga). Counterpoint utilized similar technology in construction of their chassis' and found significant audible benefits were to be derived from surrounding audio circuitry with materials that shield against both EMI & RFI. Unlike Mu-Metal, this material may be cut and bent into convenient shapes without requiring annealing to restore its shielding properties.

~~12" x 12" / \$32.50, 12" x 24" / \$64.50, 12" x 48" / \$127.00 ... NOT CURRENTLY IN PRODUCTION~~



Stillpoints ERS EMI/RFI Suppression Cloth: In appearance a grey cloth like material impregnated with carbon fibres that are wash coated with metals in a proprietary process. This material not only shields from and reflects EMI/RFI, but absorbs it, so merely laying a sheet on top of, or wrapping, noise emitting components (anything digital, AC junction boxes, power supplies, transformers) can have dramatic results. Even speaker drivers, crossovers, and turntable platters may benefit with this treatment. Users have reported spectacular reductions in glare, hash, background noise, etc. The polyester fabric will insulate the core of ERS, to some degree, but can be easily penetrated with sharp edges. Caution should be exercised when used in close proximity to circuitry. See Positive Feedback & Stereo Times articles. 11" wide by any length @\$2.95 per linear inch



Free mail shipping (48 states) for any order containing 2 feet+ ERS. Buy nine linear feet, get one free!

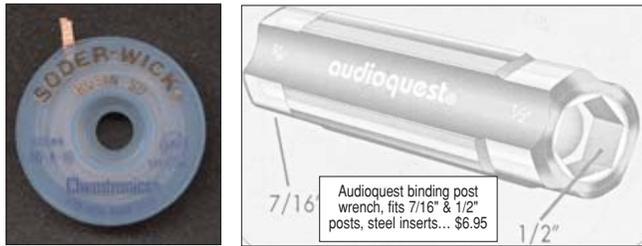
AQ RF Stoppers: RF suppressing ferrite clamps to fit around power and signal cables; they add 240Ω of impedance at 100MHz which AQ claims is 40% more attenuation than the TDK and similar products... Jr.'s fit cables to 9mm \$31.50/set 8 Sr.'s fit cables to 10mm \$45.95/set of 4 12.5mm ID one piece EMI suppressor core with heat shrink @\$4.95 each This is the RF Stopper Audioquest used on their AC-12 power cord.

SIDEWINDER POWER RESISTORS: Economical choice for speaker system crossovers, useful for experimentation parallel two for higher wattages and to achieve other values. 25W ceramic encapsulated wire wounds, 5% axial leads, .5" square by 2.5" long... 95¢ each 2.7Ω 3.3Ω 5.6Ω 7Ω 8.2Ω 12Ω 15Ω 20Ω 25Ω

Picofarad values: Poly-styrene/propylene types (almost all are styrene) surplus from various manufacturers, all copper leads, most are 500/630V 2-5%, a few are 10%, where marked with a * they are ≤160V, 85¢ each. Please note that as these are surplus purchases, the stock varies and values come and go as available!
47pF, 71pF*, 73pF*, 76pF, 80pF, 82pF, 86pF, 88pF, 89pF, 91pF*, 100pF, 100pF*, 120pF, 130pF*, 133pF, 150pF*, 180pF*, 240pF*, 270pF*, 330pF, 330pF*, 360pF, 360pF*, 365pF*, 430pF*, 453pF, 536pF*, 560pF*, 604pF, 604pF*, 619pF, 750pF*, 787pF*, 820pF*, 820pF, 909pF*, 931pF, 1000pF*, 1100pF*, 1200pF*, 1210pF, 1300pF, 1500pF, 1600pF*, 1690pF*, 1800pF, 1800pF*, 1910pF*, 2200pF, 2700pF, 3000pF, 3900pF, 4700pF, 5600pF, 6800pF, 8200pF, 10,000pF*, 12000pF*

SOLDERING AIDS & TOOLS

Soder-Wick: Flux impregnated copper braid for removing solder from circuit boards and connectors. Quite frankly, no desoldering tool works better than solder wick, and it functions as a heat sink while you are desoldering board components. Essential if you are doing rework on older equipment and replacing circuit board components or cleaning up connectors for reuse... 10' spool of .110" wide desoldering braid... \$6.75 each



Arctic Silver 5 High Performance Thermal Grease

*A unique high-density filling of micronized silver and enhanced thermally conductive ceramic particles providing superior level of performance and stability. For critical applications where maximum thermal protection is required, Arctic Silver 5 thermal grease will ensure thermal transfer to your heat sink with efficiency far greater than any silicone or similar compound. Customers report significantly improved heat dissipation with this product. For those expensive heat sinkable Caddock resistors, Schottky and other bridges and diodes, mosfets, etc. this product will help protect your investment. For best performance where there is pre-existing thermal grease, it must be removed - use the two part ArctiClean kit - no other solvents will properly and completely remove silicone grease.

3.5gr Arctic Silver 5 syringe @\$8.50 12gr Arctic Silver 5 syringe @\$23.50 2 part 60ml ArctiClean kit @\$6.95



Silver Conductive Ink, Grease, Epoxy, Flux Remover

*Conductive Epoxy: Two part quick setting silver bearing epoxy for solderless connections, high strength bonding of heat sensitive components that cannot withstand the thermal stress of soldering or won't solder easily (aluminum ribbons), trace repair, etc.... \$ask

*Conductive Grease: Silver bearing grease with excellent electrical and thermal conductivity (252°C rated), 6.5grams... \$25.95

*Rosin Flux Dispensing Pen: applies noncorrosive type R flux, 9 grams... \$9.95

*Flux Remover Pen: For spot removal of solder fluxes from circuit boards, types, for water soluble flux type only now so not suitable for the solders we currently stock... \$5.00



Wonder™ Solder Signature: An audibly superior solder with superb working properties and a pleasure to use. While the exact blend is proprietary I understand the alloy mix is similar to SN62 (tin-lead-silver) in a close to eutectic mix with a moderately active rosin flux. Several audio manufacturers have reported, after listening tests using Wonder Solder, significant sonic improvements over identical components assembled with their prior favorite solders. Use of Wonder Solder will provide greater transparency without the glare and brightness often associated with silver bearing solders. All our roll solder stock is now the most recent "Signature" version that features exotic new conductor micro-metallurgy for improved transparency (except small amount of 16ga lead free).

Wonder Solder Signature 16ga	\$55/pound	\$29/.5 pound	\$15.50/.25 pound
Wonder Solder Signature lead free 16ga	\$64/pound	\$33/.5 pound	\$17/.25 pound
Wonder Solder Signature 21ga	\$59/pound	\$31/.5 pound	\$16/.25 pound
Wonder Solder Signature lead free 21ga	\$69/pound	\$36/.5 pound	\$19/.25 pound
Wonder bar solder for solder pots...	\$11.00/ 5+ ounce	Wonder bar solder Signature - lead free...	\$31.00/ 7+ ounce bar
Cardas bar solder...	7+ ounce bar/\$9.50	Cardas rosin flux...	2 ounce jar/\$10.00

CARDAS SOLDER: George Cardas' own proprietary SN62 blend, tin, lead, silver, copper, 20ga. eutectic with low 338°F melting point, excellent working properties and sonics, very little shrinkage as it cools, so especially useful for large solder joints and heavy gauge wire terminations... Quad-Eutectic \$63.50/pound, \$32.50/half pound, \$17.00/quarter pound Cardas Tri-Eutectic lead free solder... \$86/pound, \$45/half pound, \$24.00/quarter pound

MusiCoat: Unique fluid product from TRT, the developers of the InfiniCap and Wonder Solder. Use this product to coat resistors, transistors, IC's, even circuit boards, cure the aggressive artificial glare of solid state and digital gear, and transform the sound of your system. It works by compensating for the poor dielectric properties of the materials used to encapsulate circuit components and reduce the multiple internal reflections that create glare. While extremely costly and time consuming to manufacture, only a tiny amount is required to adequately treat a single hi-fi component. One small vial (about the size of a very small perfume sample) will adequately treat a typical preamp or CD player. This would be the coup de grâce after finishing a capacitor and other parts upgrade to a high end component... \$99.00 per vial of MusiCoat Deluxe

NON-INDUCTIVE DUMMY LOAD: 8Ω, 250 watt power resistor in gold aluminum heat sink case for amplifier dummy loads. This high power non-inductive resistor is a perfect choice for an amplifier load during critical distortion testing, setting AC balance, testing frequency response, etc.... \$74.95 each

TUBES

I carry a small selection of the most popular tubes in current manufacture from RAM Labs and a few n.o.s. Gold Aero as well as an occasional other type or two. Neither of these companies are tube manufacturers as such, both specialize in purchasing tubes in large quantities from various sources they believe to manufacture the best tube of a particular type, then they test and match these tubes to a very high standard. This process assures you of the lowest noise possible in their highest grade tubes, as well as very close matching and extremely low gas for power tubes, all backed by a 90 day warranty. My primary stock is from RAM Labs as they offer the best pricing on graded



tubes and Gold Aero is out of business. A RAM Labs "LN" grade 6DJ8, for example, is typically the best one in ten; a "SLN" would perhaps be the best of a hundred tubes tested. Even their Standard grade tubes are quieter than an average off the shelf tube. You may find the same tube for less elsewhere but you have no guarantee as to its noise level and might have to purchase several to find a quiet one. RAM Labs publishes a very informative white paper on the necessity of careful power tube matching even if you have individual bias for each tube, copies on request.

RAM Labs Twin Triodes			
Triode	Super Low Noise	Low Noise	Standard
6DJ8.....	\$50.00	\$25.00	\$16.95
6922.....	\$63.00	\$39.00	\$21.95
12AX7.....	\$50.00	\$25.00	\$16.95
12AU7.....	\$50.00	\$25.00	\$16.95
12AT7.....	\$50.00	\$25.00	\$16.95
12BH7.....	\$41.95	\$33.50	\$25.00
5751.....	\$50.00	\$25.00	\$16.95
5965.....	\$50.00	\$25.00	\$16.95
6FQ7.....	\$41.95	\$33.50	\$25.00
7044.....		\$33.50	\$25.00

Matched Pair Power Tubes & Others			
6550 (RAM)...	China/\$60	Russia/\$80	*** 6AS7 are new stock from Atmosphere
6SN7 tested (not matched)	singles		\$20
5AR4 (RAM) one single left			\$30.00
6AS7G singles ***			\$20.00

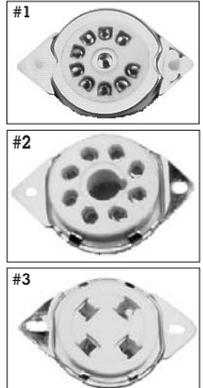
6DJ8 are mostly Russian, a few Yugo, all 6922's are Russian, 12AX7/AU7/AT7's are Yugo & other. SLN, LN, S grades reflect individual section grades of dual triodes. The Standard grade is a good choice for high level stages and cathode followers and is quieter than a typical ungraded tube. If lowest possible noise is not required do not spend unnecessarily on a higher grade tube!

RAM matched pair power tubes are computer matched for bias current ($\pm 5\%$) and transconductance ($\pm 10\%$) to a very tight standard. Close matching under in circuit simulation at typical working voltages is essential for amplifiers even with AC balance and bias adjustment for each tube, otherwise asymmetrical clipping and power loss may occur.

NOS TUBES: Philips USA 6922: Industrial grade 6DJ8 equivalent, untested, sold "as is"... \$6.95 ea.

TUBE SOCKETS

- 9 Pin Miniature Azuma chassis mount (figure #1), gold or silver plated contacts in a white glazed ceramic base, requires .725" chassis hole for top mounting with 1.125" spacing for mounting screws... ~~\$7.50/gold~~ or \$6.95/silver (10+ deduct 10%)
- 9 Pin Miniature Azuma PC mount type, plated contacts, white glazed ceramic, ... \$8.95/gold or \$6.95/silver (10+ less 10%)
- 9 Pin Shielded Miniature chassis mount phenolic with tinned copper contacts and aluminum shield... \$3.50 each (10+ less 10%, 25+ less 25%)
- 7 Pin Miniature Azuma chassis mount top mount to fit 0.625" hole with 0.825" screw spacing, plated contacts... \$7.95/gold or \$6.95/silver
- 5P UY, 6P UZ five and six pin chassis mount glazed ceramic sockets with silver plated contacts... \$6.50 each (10+ less 10%, 25+ less 25%)
- Octal: Chassis mount white glazed ceramic (figure #2) with gold or silver plated contacts, mounts from underneath the chassis and requires 1.10" diameter chassis hole with mounting screw holes spaced on 1.5" centers... \$10.95/gold or \$7.95/silver (10+ less 10%)
- UX4 Sockets: Chassis mount white glazed ceramic, bottom mount, four pin ceramic (figure #3) with plated contacts... \$9.95/gold or \$7.95/silver
- Yamamoto Sockets & Plate Caps: Where only the very best in the world will do! Machined Teflon or epoxy impregnated wood laminate, 9 pin chassis mount, octal, UX4 and many other types with removable gold plated machined phosphor bronze or silver plated brass contacts, call for \$\$.
- Teflon Tube Sockets: Reasonably priced Teflon chassis mount sockets with gold plated contacts, 9 pin, Octal, UX4... \$22.95 each (see below).



A few other ceramic types with silver contacts available, 7PMT, 6PUZ, 5PUY... ask for quote

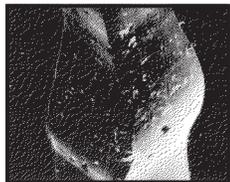
PEARL TUBE COOLERS: Heat sinks for tubes! In some circumstances, particularly for amplifier power tubes, these can greatly extend tube life. Along with the general destructive properties of high temperatures, there is evidence that the tube glass envelope becomes somewhat porous at high temperatures allowing the penetration of air into the envelope, which greatly hastens the tube deterioration. Coolers are available for a variety of octal and nine pin types. The octal power tube coolers come in a standard (PSF) and close spacing (PCF) type; if your power tubes have less than 1.05" inch spacing between each glass envelope or less than .95" spacing between them and a nine pin type on which you have installed a cooler, then specify the PCF close fitting style coolers. The PCF close fitting coolers work with envelope



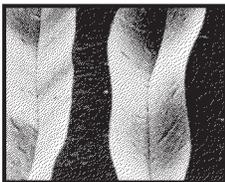
spacing as close as .60". The 9 pin coolers will work with envelope spacing as close as .60" with the outer band removed or .85" with bands installed. Specify type carefully! Two bands are supplied for use with each standard fitting Tube Cooler. They are not used with the close fitting types, thereby allowing very tight spacing between tubes. Our prices about 50% less than elsewhere!

- *OSF-8 (fits octal small signal tubes, 6CN7, 6SL7, 6BL7, 6BX7, 5691, 5692) \$5.95 ea
- *PSF-200 & PCF-200 (fits 2"D bottles)... \$8.95 each
- *PSF-150 & PCF-150 (fits 1.5"D bottles)... \$8.95 each
- *PSF-125 & PCF-125 (fits 1.25" bottles)... \$8.95 each
- *PCF-250 (fits 2.5" D bottles, 211, 813, 845 tubes)... \$11.95 each
- *MSF-9 (fits 9 pin small signal tubes, 12AX7, 12AU7, 12AT7, 6DJ8, 7199)... \$5.95 each
- *MPSF-9 (fits 9 pin power tubes, 6BQ5, 6FQ7, EL84, 7119)... \$5.95 each

Tube Dampers: High temperature 0.75" ID (450° F) silicone rings which fit 1" diameter triodes such as 6DJ8, 12AX7 etc. to mitigate the microphonic properties of tubes. These won't dry out and crack like the neoprene types (some neoprene available on closeout @25¢ each). Two per tube will reduce vibrational feedback and reduce hysteresis distortion... 60¢ each or ten pieces for \$5.00. We also have a 1.0625" ID silicone rings which fits 1.25" diameter tubes perfectly... 95¢ each or ten pieces for \$8.00



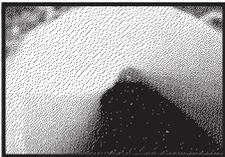
Untreated record groove after 50 plays



LAST treated record after 200 plays



Stylus tip with "baked on" deposits



STYLAST prevents this stylus tip wear

RECORD, CD & TAPE TREATMENT

LAST Power Cleaner: New record cleaner for first play (will remove mold release) and extra strength cleaning; 1/2oz size with microfiber applicators... \$43.50

LAST Formula 2: Record preservative, reduces friction between stylus and record groove for better tracking and virtual elimination of record wear 2 oz... \$49.50 16 ounce/\$350.00

LAST Formula 3: All purpose record cleaner for gentle cleaning anytime... \$26.50

LAST Formula 4: Stylus cleaner for safely cleaning of stylus and cantilever assemblies without attacking the elastomer suspension; 1/4 ounce size with cleaning brush... \$24.50

LAST Formula 5: STYLAST stylus treatment, reduces stylus tip/record groove friction and extends stylus tip life up to 10X normal; 1/4 ounce size with applicator... \$35.50

LAST 4+5 Kit: Combination kit with 1/4 ounce each cleaner & Stylast... \$53.50

LAST Formula 6: CD/Video disc cleaner with applicators for cleaning all digital discs & treating to reduce errors caused by minor scratches and surface imperfections... \$10.95

~~LAST Formula 9: INTERLAST Tape Head treatment, for application to open reel or cassette tape heads, extends head life, reduces flutter & IM distortion, 1/4 oz... \$31.95~~

~~LAST Formula 10: Tape preservative, cleans, preserves audio/video tape, 2 oz. w/applicators... \$38.50~~

LAST Applicators: For cleaning LP's, same as included with PC and #2 kits... \$34.50/ten



ProGold is the only product that actually penetrates plated surfaces, molecularly bonds to the base metals and seals & protects both surfaces. **NEW Mini-Spray!**



CAIG LABS DEOXT GOLD (PROGOLD), DEOXT, CAILUBE

Caig DeoxIT Gold is a super high performance metal contact conditioner. It deoxidizes, cleans surface contamination, improves conductivity, penetrates plated surfaces, molecularly bonds to the base metals, and seals out oxygen to prevent oxidation.

DeoxIT Gold Spray: contact enhancement 5% solution in a purified naphtha solvent cleaner (rated to 200°C). 5 ounce spray can/\$24.95, 20ml mini-spray can/\$10.95 (24" extension tube @50¢) (foam swabs @35¢)

DeoxIT Gold liquid: 100% solution (rated to 200°C)... 7.4ml bottle with brush applicator/\$29.95, 2ml tube liquid/\$6.95 7ml pen type applicator for easy spot treatment/\$21.95 small nylon connector cleaning brush for RCA's, etc. @50¢

GxL DeoxIT Gold: GX high temp formulation for use up to 400°C, best for extreme heat applications. 225ml 5% spray/\$39.95 20ml 5% mini-spray/\$13.95 7.4ml 100% GX100L liquid with brush applicator/\$32.95 cloth wipes 1.5" square saturated with 100% concentrate liquid. 45¢ each (50 for \$16)

DeoxIT: Surface cleaner & preservative with highly concentrated deoxidizing action (20% deoxidizing ability vs. .5% for DeoxITGold) follow with DeoxIT Gold for maximum performance... 200ml 5% spray/\$16.95 or 100% liquid 7.4ml bottle w/brush/\$17.95

CaiLube MCL/FaderLube: Specifically to clean and lubricate plastic and carbon pots and sliders, unlike DeoxIT & ProGold which are only for metal contacts. 5% solution 200ml spray can/\$16.95, 14gr spray/\$11.95, or 2ml liquid tube/\$5.95

CaiKleen 41: No residue contact cleaner/degreaser... 14 oz spray/\$14.95 CaiKleen AV head cleaner 118ml bottle/\$15.50

Spray cans and flammables may not be shipped outside the USA --- Inside the USA we must use surface mail

CONTACT CLEANERS & ENHANCERS

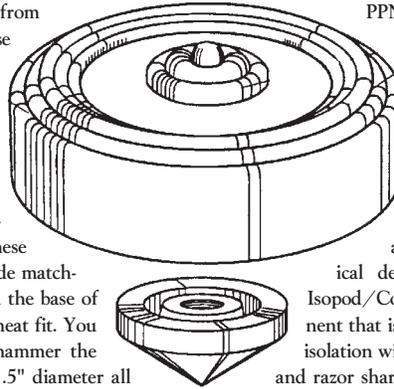
Titan Audio oil: Pure titanium contact cleaning and enhancing oil from Wakø Technical of Japan, 30cc plastic bottle... \$30.00

Socket Savers: Specially designed pair of nylon brushes for cleaning octal & miniature tube sockets, use with solutions above... \$12.95 set two

XLO Sytem Tune-Up CD: This 24K gold disc is the successor to their out of print best selling collaboration with Sheffield Labs. A step by step guide lead by Roger Skoff of XLO and Keith Johnson of Reference Recordings and other tracks on this disc will provide component demagnetization & burn-in, allow you to check absolute phase, soundstaging, speaker placement, wiring & polarity, and balance. It is surround sound compatible and ideal for home theater setups with Dolby Pro-Logic or similar systems. There are also six classical and jazz selections recorded by Keith Johnson, some with HDCD ... \$29.95 Auric Illuminator; CD treatment kit, surface and edge treatment for better sound @\$34.95



SIMPLY PHYSICS TONECONES: Molded from Polypropylene (PPN) with replaceable aluminum tips, these cones are far more inert than an all metal design, more attractive, and they won't corrode. The largest size Tone Cone features a hollow spoked body which can be filled with your choice of damping material, or Simply Physics molded Santoprene insert material. The large (2" H by 1.5" D) hollow Tone Cones, and the medium size cone (1.5" x 1") feature aluminum tips and are drilled to accept the optional 1/4"-20 machine thread studs so that you may attach these cones securely to your speakers and turntables. I can provide matching brass female threaded inserts which can be installed in the base of your speakers or turntable plinth with an absolutely flush neat fit. You need only drill a 5/16" hole 1/2" deep and press or hammer the insert into place. Also available is a small 1/2" high by 1.5" diameter all

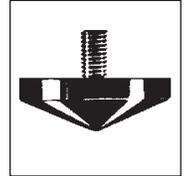


PPN Tone Cone with optional 1/4-20 stud which can be used on its own or in combination with the Simply Physics Isopod. The Isopods are 2-1/2" diameter by 1" thick "vinylex" feet which have a cutout sized to receive the small Tone Cone or Tone Cup in its base. This combination is known as a Cone Couple (shown here) and is Simply Physics ultimate isolation product for use under audio electronics. If you need to protect your floor or furniture from the sharp point of your cones Tone Cups are available, 1.5" diameter PPN or aluminum pucks with a conical depression in which to rest the cone point. Using the Isopod/Cone Cup version of the Cone Couple underneath a component that is perched on Tone Cones will provide a very high degree of isolation with great rigidity for tightly controlled deep bass performance and razor sharp imaging.



Large 2" Tone Cone with 1/4-20 stud... \$9.00
 Large cone w/Santoprene inserts and stud... \$13.75
 Medium 1.5" Tone Cone with 1/4-20 stud... \$7.50
 Small .5" plain Tone Cone without stud... \$4.50
 Small Tone Cone with 1/4-20 stud... \$5.00

protective polypropylene Tone Cup... \$4.00
~~plain aluminum Tone Cup... \$ask~~
~~Isopod/small Tone Cone "Cone Couple"... \$13.50~~
~~Isopod/Tone Cup "Cone Couple"... \$13.50~~
~~Isopod only... \$9.50~~ (1/4-20 female brass threaded insert... 50¢)



Thread Adaptors: Converts all cones that accept a 1/4-20 stud to either 10-32, 5/16-18, 3/8-16, 6mm, or 8mm thread... \$6.80/4 pcs.

SIMPLY PHYSICS V2 DECOUPLER: The ultimate height adjustable isolation foot! Comprised of four parts, a female threaded polypropylene cup, male threaded aluminum alloy foot, brass lock ring, and replaceable aluminum or heat treated stainless tip. These are height adjustable and available in two sizes, V2 and V2 Jr. The V2 size which has a 2" diameter polypropylene cup adjusts overall foot height from 3" - 3.5" and the smaller 1.25" diameter V2 Jr. adjusts height from 2.35" - 2.65". The polypropylene cup is attached to the component with a bolt and washer or threaded fastener (to 1/2" D for V2, to 3/8" for V2 Jr.) of your choice. The polypropylene cups are black and the feet clear anodized. Black anodizing (add \$6 each) and heat treated stainless points (add \$20 each) are available options at additional cost. Presently I stock the V2 Jr., with the larger V2 feet available as required on a special order basis with approximately a 10 day lead time.

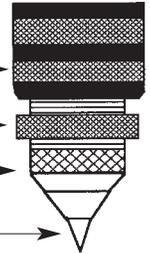
V2 Jr. Decoupler... \$ask each V2 Decoupler... \$ask each UNAVAILABLE AT THIS TIME

Machined PPN Cap is attached with appropriate thread bolt and washer to component and is internally threaded for alloy foot allowing height adjustment.

Brass locking ring locks alloy foot to Delrin cup for maximum rigidity.

Alloy foot is threaded to mate PPN cup and is knurled for easy adjustment.

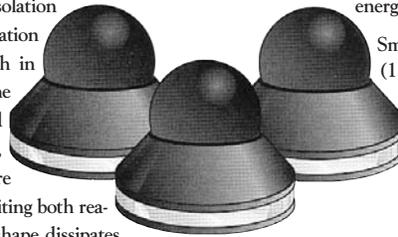
Replaceable aluminum tip, or optional heat treated stainless at extra cost.



Vibrapod Isolators: Polymer cones and isolation cups for use under electronic components and speakers. The cups come in five weight ranges - #1 for 2-3 pounds per isolator, #2 for 4-8 pounds per isolator, #3 for 8-12 pounds per isolator, #4 for 14-18 pounds per isolator, #5 for 22-28 pounds per isolator, all are 2.5" diameter x 9/16" high. The cones are 1.6" diameter x 1.0" high.
 Vibrapod Isolators (specify #)... \$21.50/set of four Vibrapod Cones... \$6.95 each



ISO-BEARING SUPPORT GLOBES: Uniquely shaped isolation feet for audio components. Each Iso-Bearing is a sphere of vibration absorbing elastomer material, cradled in a Delrin cup, which in turn rests on a thin mat of the same elastomer material as the sphere itself. The cups for the larger feet (shown) are trimmed in polished brass. The elastomer material used is rather dense, exhibits almost no rebound, and is extremely inert. These are one of the most effective isolation foot designs available, exhibiting both reasonable rigidity and a very high damping factor. The round shape dissipates



energy with greater efficiency than more conventional designs.

Small size suitable for loads up to 4.5 pounds per globe (1" sphere in a 1.4" cup, 1.2" overall height)

Large size appropriate for loads up to 17 pounds per globe (1.3" sphere in a 2.0" cup, 1.7" overall height)

Large Iso-Bearing... \$29.00 each

Small Iso-Bearing... \$19.95 each

SPIKE FEET: An effective but economical choice for use beneath speakers, especially on thick carpet where a cone type foot won't penetrate to flooring below.

* small 1.50" L x 5/32" D steel spikes, .5" of it has 1/4-20 thread, supplied with nuts and .5" long press type female threaded brass inserts... \$5.00/four

* large 2.50" L x 1/4" D steel spikes, 1" of it has 3/8-16 thread, supplied with nuts and 1" long screw in type female brass inserts... \$7.50/four

Also available is an import gold plated .80" H x 1" D brass cone with 4mm metric female thread and protective disc for a bargain \$5.95 each.

DAMPING SHEETS, COMPOUNDS, MOUNTING HARDWARE

SORBOTHANE: Adhesive backed .1" thick 6" square sheets of Sorbothane which you can slice up and apply to tonearms, cartridge bodies, etc., especially effective in constrained layer applications where it is sandwiched between other materials... \$18.95 each

EAR ISODAMP SD: Self-adhesive semi-rigid damping sheets from the industry leader in vibration, shock, and motion control. Maximum performance with minimum weight and thickness, low memory, resists cracking in tightly angled spaces, meets UL 94V-O certification for flame resistance. The best material available for free air damping of metal parts, circuit boards, and chassis covers and enclosures. SD-40 is greenish brown in color, SD-125 is black. Three variations of this material are available:

*SD40... .040" thick sheet, .37 pounds per square foot: 12" x 27"/\$35.00 or 9" x 12"/\$13.00

*SD40AL... .040" thick w/ 5 mil aluminum constraining foil for increased damping and flame resistance: 12" x 27"/\$58.00 or 9" x 12"/\$20.00

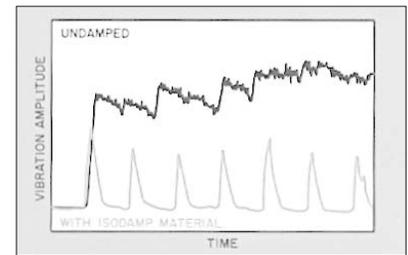
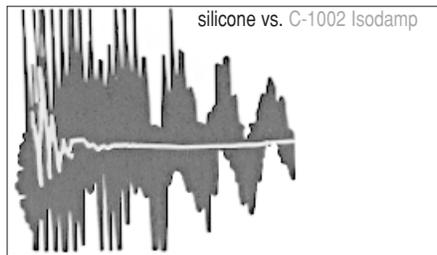
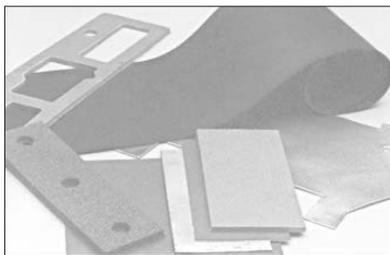
*SD125... 0.125" thick sheet, 1.11 pounds per square foot: 12" x 27"/\$60.00 or 9" x 12"/\$22.00 or 9" x 6"/\$12.00 (my first choice for damping metal chassis)

EAR TAD Damping Foils: Composite extensional damping sheet consisting of viscoelastic pressure sensitive adhesive constrained by an aluminum foil layer, very light and flexible for weight sensitive applications, the .005" thickness is excellent for damping tone arms, .005" x 9" x 12"/\$3.50 each

EAR C-1002 ISODAMP: Compliant sheet material for high performance constrained layer damping, low rebound, excellent for making shock mounts, turntable and isolation bases, available in a variety of thicknesses to accommodate any need, tough yet soft and flexible, blue color, not adhesive backed.

.015"... 12" x 27"/\$14.95, 12" x 13"/\$8.00 .030"... 12" x 27"/\$16.95, 12" x 13"/\$9.50 .062"... 12" x 27"/\$29.95, 12" x 13"/\$15.50

.125"... 12" x 27"/\$44.95, 12" x 13"/\$23.50 .250"... 12" x 27"/\$89.95, 12" x 13"/\$46.50, 9" x 12"/\$31.50, 6.5" x 12"/\$23.50, 6.5" x 6"/\$12.50



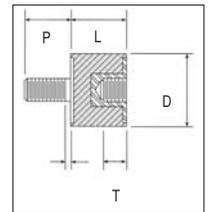
EAR Isoloss Sandwich Mounts: Male/female thread isolation mount which is ideal for mounting circuit boards or any component assembly that would benefit from vibration isolation. The soft Isoloss SL201 material is used in the construction of the #4-40 mounts, and the SL252 material for the #6-32, while the 1/4-20 mount uses the denser H material. The male/female style of these mounts permits attachment to chassis' of any thickness with the appropriate length screw, and you may stack these on top of conventional standoffs if you need more clearance below your circuit board than a single mount will provide. Best for compression load, limited shear strength for vertically mounted boards. (10+ deduct 10%, 25+ -15% - per size)

#4-40 thread, dimensions P = .200", L = .320", D = .280", T = .110", maximum compression load per mount 6oz., \$3.95 each

#6-32 thread, dimensions P = .375", L = .500", D = .405", T = .160", maximum compression load per mount 10oz., \$4.95 each

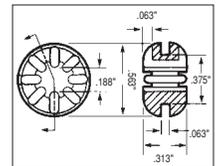
1/4-20 thread, dimensions P = .50", L = .625", D = .600", T = .360", maximum compression load per mount 12 pounds, \$5.95

Add 5¢ per mount if you wish a nut & screw 4-40 & 6-32 only.



EAR G411 Isoloss Grommets: Fabricated from Isoloss SL201 and HD urethane elastomers, a far more effective isolation material than used in any rubber or silicone grommet. Isoloss isolators act much like shock absorbers. The isolators start out stiffer at the beginning of an impact and become increasingly softer to bring motion to a controlled stop. They provide controlled deceleration, reducing peak forces during sudden stops and eliminate excessive rebound. These grommets feature a ribbed surface and are sized for a 3/8" hole and will accept screws up to 1/4". The maximum load per grommet for the softer, "lossier" SL201 type is 5 ounces, for the harder HD type it is two pounds. Use enough grommets so as not to exceed the maximum load per unit, and do not overcompress the grommets by excessively tightening your hardware.

Specify SL or HD type \$.95 each 50+/85¢

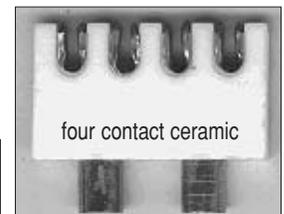
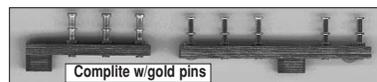


EAR Equipment Feet: Replaces standard single screw mount rubber feet commonly found on most audio equipment. Formed from black EAR Isodamp C1002 material. MF-1010 are 1.0" D x .5" H, accept 3mm D screw, load range 5-15 pounds... 75¢ each - L-021 are 1.5" D x .75" H, accept 5mm D screw, load range 10-20 pounds... \$3.00 each

Deflex Washers: 25mm diameter x 11mm thick washer with an 8mm center hole comprised of Deflex damping material - excellent for isolating transformers, circuit boards, and other components from vibration... 75¢ each deduct 10% for 10+, 20% for 25+ pieces

Terminal Strips: High quality ceramic terminal strips with two to eleven silver plated horseshoe style contacts and female threaded metric standoffs, and a variety of insulated ceramic posts in various configurations... \$2.95/two contacts, \$3.95/four contacts (actual size shown at right), \$4.95/six contacts, \$6.25/eight contacts, and \$8.50/eleven contacts. Also available are the Yamamoto terminal strips formed from Teflon or Complate (resin impregnated wood laminate) with gold pins (examples pictured are smaller than actual size). In addition we have the Grennan Teflon strips with OFHC twist eye contacts that mount with two screws... four contact/\$13.25, five contact/\$14.95, and six contact/\$16.95.

Please email for further pricing, images and/or request enclosure of a descriptive data sheet with any order.





Hi-Fi Tuning Fuses
(see page 21)

SPECTRA DYNAMICS DEFLEX DAMPING

Deflex Corner Blocks: Designed for use with the Deflex Panels, Corner Blocks will fit into any enclosure with unreinforced square corners. Every corner in an enclosure has the potential of reflecting sound back on its original path. 75mm size only \$2.50 each

Deflex Wrap: This is a ribbed damping material 15mm thick and is intended for damping flat panels in horn loaded and transmission line speaker systems and for wrapping port tubes or any curved surface inside speakers, easily bent to shape and cut, 8.25" x 11" sheets... \$22.50 each 10+ deduct 10%

Magnapad Gold: A complementary product from Spectra Dynamics designed to be glued to the back of speaker magnets and absorb unwanted vibration at the magnet structure and prevent further sound reflection. Advanced polymer material 8mm thick with the same concentric ring surface emulation characteristics as their Deflex Panels, available in three diameters... 75mm/\$2.50 175mm/\$4.95 225mm/\$9.95 each

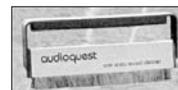
Hexi-Flex Tiles: 100mm diameter x 6mm thick hexagonal Deflex tiles, excellent for automotive h-fi applications or covering any irregular surface... \$3.75 each

Isolation Blocks: Made of the same Deflex low reilience polymer, these blocks are superb isolators for applications ranging from speaker crossovers to electronic components. Four shapes available... 43mm round x 26mm H/\$2.95 75mm² x 20mm H/\$7.50 150mm² x 20mm H/\$21.50 120mm round x 30mm thick with 35mm D center hole (intended to isolate a torroidal transformer) @\$9.00

TURNTABLE ACCESSORIES

~~Spectra Dynamics Turntable Mat: A 375 gram, 4mm thick x 11 7/8" diameter laminated mat comprising several materials and incorporating their polymer Deflex damping material, somewhat firmer to touch than the AQ Sorbothane mat, the best of the softer mats... \$69.00~~

Audioquest Record Brush: An indispensible accessory for removing dust from your records before each play. With over one million conductive fibres, the bristles of this brush will penetrate to the bottom of the record groove to scoop out dust particles and help discharge static buildup. Pads and cloths can only remove dust from the surface of the record, carbon fibre brushes are the only dry treatment that will reach deep into the record groove... \$15.95



DB Phono Alignment Protractor: The most versatile cartridge overhang alignment tool available. If you care to experiment with various alignment geometries this gauge can be used to optimize overhang for any two points on the record. There is no need to be able to find the center of your arm pivot with this gauge, but a cartridge body with parallel sides will make using this device somewhat easier. Excellent instructions are provided... \$46.95



Shure Stylus Force Gauge... Non-magnetic balance for adjusting cartridge tracking force, easy and quick to use, still my first choice for fast setup, nothing else really works better, final adjustment should always be by observing cantilever deflection anyway... \$24.95

Cardas Sweep Record: Newly revised 180gr LP produced by George Cardas, and mastered by Stan Ricker on a Neumann VM66 lathe with helium cooled SX-74 cutter head, using console and cutter head electronics designed by Keith Johnson. The record contains a series of standard tones, locked white noise grooves that repeat endlessly, tracks for degaussing your cartridge and playback chain, ultrasonically cleaning your cartridge, polarity checks, absolute phase, even a sync label to check platter speed... \$17.95



Allsop Orbitrac 2... Very popular out of production manual cleaning device for LP's - we found some stock I thought was long gone - get them while you can! \$63.00 for the complete kit with two extra pair cleaning pads (3 pair total)

Notes on Export Shipments:

All prices listed in my catalog, and shipping charges, are based on delivery to destinations within the USA. Extra funds must be included with your order for shipping to other countries. You are encouraged to email with a list of items and a complete shipping address and I will reply with a price quote which will include freight cost. Terms are prepayment in US \$\$ funds by PayPal (3% fee), International Money Order, bank check payable on a US bank, or Western Union. Sorry - no direct credit card payments. You may also wire funds to my bank but you must allow \$27.00 additional for fees charged to me in the US by my bank, and the originating US bank. Any excess will be credited.

In order to avoid the excessive customs' duties imposed by many countries I normally list a declared value much less than the retail value of the goods shipped., This can result in a substantial savings for you. We are now able to insure international shipments to most countries except Greece and the Balkan states for their full value while still declaring low value for customs. We will always quote with full value insurance where possible unless you request otherwise. Any shipments that are not insured, either due to your request, or because our insurer will not insure to that destination, are sent entirely at your risk of loss. All insurance claims must be made within 90 days of ship date.

I ship almost all overseas packages by First Class Intl. Mail, or in small flat rate Priority Mail boxes. While not trackable these are the most effective options. For shipments over four pounds, particularly those of higher value I favor standard Priority Mail Intl., or Express Mail, both of which are trackable. We can also ship by United Parcel Service or Federal Express if you prefer, but expect the freight and custom's clearance costs to be very significantly higher. If you have any specific shipping instructions, state them; otherwise I will use my best judgement in determining the least expensive method and ship with full value insurance where possible, and a low value declaration for customs.

RETURNS: Most items are acceptable as a return for full credit toward other merchandise up to 60 days after purchase. If a cash refund is preferred a 10% restocking fee may apply. Please inquire before returning any item if you wish a cash refund. Metal film resistors, IC's, and cut lengths of wire, braid, etc. are not returnable. Any items which show obvious signs of wear or abuse, or have been soldered are not returnable unless defective. Tubes within warranty are exchangeable with the manufacturer. Replacement of IC's or parts that are static sensitive you believe defective should be returned to the manufacturer for inspection and replacement. Credit for returned capacitors does not include any fee charged for 1% matching or custom selecting to specific value. Please consult with me prior to returning any item to avoid possible misunderstanding. All returns must be packaged carefully! You must provide adequate packaging for returned parts. I've received any number of returns in plain unpadding envelopes with the contents damaged or torn out of the envelope by postal sorting machinery. If your return is damaged or lost in shipping you will not receive credit for it!

IEC POWER PLUGS: These are the type of connectors used on virtually all audio components that have detachable power cords. I have both the commonly used 10-15 amp style and the much better 20 amp connectors. Unfortunately almost no one uses the 20 amp type which has much larger, higher pressure, lower resistance contacts, but is not interchangeable with the 10 amp types. If you are converting equipment to utilize a detachable power cord, or are willing to replace the male connector on equipment that uses a 10 amp IEC connector, then by all means use the 20 amp style. The 20 amp male requires a 33mm x 25mm hole with 42mm hole centers for the mounting screws. This means enlarging the main opening significantly over the 10 amp type but the mounting screw holes need only be widened 1mm each beyond the normal spacing for the 10A type IEC so they can be reconfigured with little difficulty. Deduct 10% for ten or more pieces per individual type.

*10A Swiss made female for end of power cord, straight... ~~\$8.95~~ SPECIAL \$5.95 10A male panel mount connector... \$2.95 each
 *H320C, Hubbell 20A female for end of power cord, straight, clam shell case... \$10.50 H320B, Hubbell 20A male chassis mount... \$7.95

CORD STRAIN RELIEFS: Collet type strain relief for power cords or other cables, black nylon body with internal rubber seal, three sizes:
 (cable size .16" to .31"/requires .60" chassis hole/\$4.15) (cable size .24" to .47"/.80" hole/\$5.95) (cable size .51" to .71"/1.12" hole/\$8.50)



KIMBER WATTGATE POWER CONNECTORS

Model 320i Economy IEC: At last, a 15A IEC that will accept cable diameters over 16mm and 10ga conductors easily, and perhaps up to 6ga with modification. ... clear or black housing @\$19.95 (also available is the 320iHC 20A style @\$30.95)
 Model 350i IEC: Same as 320i but with triple plated OFC/Electroless Nickel/24K Gold contacts and Blue Star Audio Grade marking. Same 15A/125V, 10A/250V rating as the 320, but yields superior sonic performance... black only @\$77.00
 Model 330i male Power Plug: Same Audio Grade Blue Star construction as the 350 IEC in a NEMA 5-15P power plug @\$77.00
 Model 5266i male Power Plug: NEMA 5-15P plug that will accept up to 16mm cable & 10ga conductors, clear or black @\$12.95
 Model 381 Receptacle: 20A Duplex receptacle, grey color glass-filled nylon front and gold plated heavy duty contacts @\$147.00
 Deduct 10% for six or more Wattgates, 20% for twelve or more, mix ok.

OYAIDE POWER CONNECTORS

P-037 AC power plug, silver/rhodium @~~\$95.00~~ SALE! \$75.00 **C-037** IEC female 10/15A cable mount plug, silver/rhodium @~~\$95.00~~ SALE! \$75.00
P-079 AC power plug, direct gold plate @~~\$99.00~~ SALE! \$75.00 **C-079** IEC female 10/15A cable mount plug, direct gold plate @~~\$99.00~~ SALE! \$75.00
SWO-DX 15A duplex receptacle, Ag/Rh plated phosphor bronze contacts @~~\$90.00~~ SALE! \$70.00, or **SWO-CX** with 24K direct gold plate @~~\$95.00~~ SALE! \$75.00

FURUTECH

FL-11 (Cu) copper IEC-320 female cord mount connector... @\$29.50 "sale"
FL-11M (Cu) copper male cord mount NEMA 5-15P... @\$29.50 "sale"
FL-11 (G)...gold plated IEC-320 female cord mount connector... @\$49.50 "sale"
FL-11M (G)...gold plated male cord mount NEMA 5-15P... @\$49.50 "sale"
FL-03(G) gold plated, 15A IEC male panel mount inlet, 5x20mm fuse @\$21.50
FL-03(R) Rh plated, 15A IEC male panel mount inlet, 5x20mm fuse @\$27.50
FL-09(G) gold plated, nylon body 15A IEC male panel mount inlet @\$85.00
FL-09(R) rhodium plated, nylon body 15A IEC male panel mount inlet @\$105.00
FL-10 (G) gold plated eutectic brass 15A IEC male panel mount @\$27.00
FL-10 (R) rhodium plated eutectic brass 15A IEC male panel mount @\$35.00
FL-31 (G)...gold plated male cord mount 20A female IEC... @\$139.00
FL-8N C7 IEC style cord mount @\$56.50 gold, or \$70.00 rhodium
AC INLET (G) basic gold plated 15A IEC male panel mount inlet @\$12.50
AC INLET (R) basic rhodium plated 15A IEC male panel mount inlet @\$17.00
FP-15A-N1 duplex receptacle @\$59.95 copper, or \$79.95 gold, or \$103 rhodium
 Deduct 10% for 6+ any Furutech - mix ok (20% for 12+ FL-11 Cu types only)
 Items above are stock, but we can obtain any Furutech item you require.

2A 10mm x 38mm fuse for CJ amplifier @\$35 - special - 2 available **Hi-Fi Tuning Fuses** Hi-Fi Supreme Fuse 5x20mm @59.95 6.5x32mm @\$89.95
Audiophile Fuses: Hand made in Germany, pure silver wiring, gold over silver end caps, ceramic casing, cryogenically treated 5x20mm @\$25 or 6.3x32mm @\$35
 Subject to stock on hand as only the Hi-Fi Supreme fuses (small @\$59.95 & large @\$89.95 - special order) remain in production
 Most fuses in our stock are the original gold over silver element, and some with unplated silver burn wire - ask about available values.

5 x 20mm Fast Blow "F"	5 x 20mm Slow Blow "T"	6.3mm x 32mm Fast Blow "F"	6.3mm x 32mm Slow Blow "T"
125mA, 200mA, 250mA, 315mA, 400mA 500mA, 630mA, 800mA, 1A, 1.25A, 1.6A 2A, 2.5A, 3A, 3.15A, 4A, 5A, 6.3A, 8A 10A, 12.5A, 15A, 20A	50mA, 80mA, 100mA, 125mA, 160mA 200mA, 250mA, 315mA, 400mA, 500mA 630mA, 800mA, 1A, 1.25A, 1.6A, 2A 2.5A, 3A, 3.15A, 4A, 5A, 6.3A, 7A, 8A 10A, 12.5A, 15A, 16A, 20A	250mA, 315mA, 400mA, 500mA, 630mA 800mA, 1A, 1.25A, 1.6A, 2A, 2.5A, 3A 3.15A, 4A, 5A, 6A, 6.3A, 7A, 8A, 10A 12A, 12.5A, 13A, 15A, 16A, 20A	250mA, 315mA, 400mA, 500mA, 630mA 800mA, 1A, 1.25A, 1.6A, 2A, 2.5A, 3A 3.15A, 4A, 5A, 6A, 6.3A, 7A, 8A, 10A 12A, 12.5A, 13A, 15A, 16A, 20A

WA - QUANTUM CHIPS

We don't understand the technology behind these, but our customers have requested we stock these "bio-energetic chips". Adhesive backed, they are affixed to various components, such as fuses, capacitors, and transformers, and are reputed to influence the efficiency and current flow and signal transmission on a subatomic level, with a net result of greater definition, more natural sound, and improved separation according to user reviews. Here is what is currently available:
 6mm Fuse Chip @\$9.00 5mm Capacitor Chip @\$10.00 20mm Capacitor Chip @\$28.00 5mm Headshell/Tonearm Chip @\$10.00 Semiconductor Chip @\$12.50
 As an introductory special we are offering these at 15% off the above pricing until further notice.

Kiwame Carbon Film Resistors: Compact 1000VDC rated 5% 2W @70°C and 1200VDC rated 5% 5W @70°C types especially suited for tube electronics, low noise, very natural sound. Actual tolerance measures typically 0.5%. Both have 0.030" tinned copper leads. My customers rave about these! 10% discount for 25+ per value
2W (.16" D x 0.50" L) @\$\$.95 each except those marked ** @\$\$.49 5W (.32" D x 0.95" L) @\$1.95 each except those marked ** @\$\$.95

Kiwame 2W .150" D x .50" L	110Ω	120Ω	130Ω	150Ω**	160Ω	180Ω	200Ω	220Ω	240Ω	300Ω	330Ω	360Ω	390Ω	470Ω	560Ω	620Ω	750Ω	820Ω	1.00K	1.10K	1.20K	1.30K	1.50K	1.60K	1.80K	2.00K	2.20K	2.40K	2.70K	3.00K	3.30K	3.60K	3.90K	4.30K	4.70K	5.10K	5.60K	6.20K	6.80K	7.50K	8.20K	9.10K	10.0K	11.0K	12.0K	13.0K	15.0K**	16.0K	18.0K	20.0K	22.0K**	24.0K	27.0K	30.0K	33.0K	36.0K	39.0K	43.0K	47.0K**	51.0K	56.0K	62.0K	68.0K**	75.0K	82.0K	91.0K	100K**	110K	120K	130K	150K	160K	180K	200K	220K**	240K	270K	300K	330K	360K	390K	430K	470K	510K
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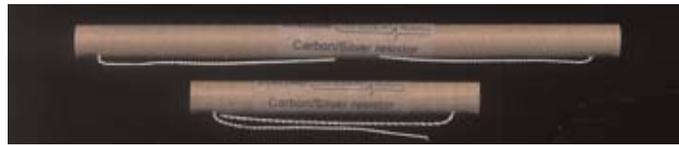
Kiwame 5W .35" D x 1.0" L	13Ω	15Ω	16Ω	2.2Ω	2.4Ω	2.7Ω	3.0Ω	3.3Ω	3.9Ω	4.7Ω	5.1Ω	5.6Ω	6.2Ω	6.8Ω	7.5Ω	8.2Ω	9.1Ω	10Ω**	11Ω	12Ω	150Ω	180Ω	200Ω	220Ω	240Ω	270Ω	300Ω	330Ω	390Ω	470Ω**	510Ω	560Ω	620Ω	680Ω	750Ω	820Ω	910Ω	1.00K**	1.10K	1.20K	1.30K	1.50K	1.60K	1.80K	2.00K**	2.20K	2.40K	2.70K**	3.00K	3.30K	3.60K	3.90K	4.30K	4.70K**	5.10K	5.60K	6.20K	6.80K	7.50K	8.20K	9.10K	10.0K**	11.0K	12.0K	13.0K	15.0K**	16.0K	18.0K	20.0K**	22.0K	24.0K	27.0K**	30.0K**	33.0K**	36.0K	39.0K**	43.0K	47.0K**	51.0K	56.0K	62.0K	68.0K**	75.0K	82.0K	91.0K	100K**	120K	150K**	200K	220K	240K	270K	470K	1.0M
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Strikeout items are currently out of stock, but will be available again.

Duelund Coherent Resistors

Superb non-inductive paper encased graphite element resistor with pure silver leads, all natural materials and completely non-magnetic. Designed for speaker crossovers, this resistor displays a negative temperature coefficient meaning it will counteract the rising impedance of the voicecoil when used in series. \$17.95 each

0.47Ω 5W (67mm L) ~~1.0Ω 10W (135mm L)~~ ~~1.5Ω 10W~~ ~~2.2Ω 10W~~ ~~3.3Ω 10W~~ ~~4.0Ω 10W~~ 4.7Ω 10W 5.6Ω 10W 6.8Ω 10W ~~8.0Ω 10W~~



Auricap metallized polypropylenes	0.68μF .....600V \$20.50 .....1.1" x 1.2"	6.0μF .....200V \$29.50 .....1.1" x 1.4"
0.007μF 1% .....600V \$22.95 .....50" D x .55" L	1.0μF .....200V 17.95 ......66" x .78"	7.0μF .....200V 24.95 .....1.1" x 1.4"
0.01μF .....1500V 11.25 .....50" x .70"	1.0μF .....400V 15.25 ......77" x .90"	8.0μF .....200V 25.50 .....1.2" x 1.4"
0.0206μF 1% .....600V 18.50 .....42" x .53"	1.0μF .....600V 21.50 .....1.3" x 1.4"	9.0μF .....200V 26.50 .....1.3" x 1.4"
0.022μF .....600V 10.95 .....45" x .53"	1.5μF .....400V 19.95 ......76" x 1.2"	10μF .....200V 32.95 .....1.3" x 1.5"
0.047μF .....600V 13.50 .....52" x .65"	2.0μF .....200V 16.50 ......78" x .90"	12μF .....200V 35.50 .....1.4" x 1.6"
0.068μF .....600V 11.95 .....58" x .65"	2.0μF .....600V 39.95 .....1.5" x 1.7"	15μF .....200V 31.95 .....1.5" x 1.7"
0.10μF .....400V 15.50 .....42" x .53"	2.0μF .....1500V 57.95 .....2.4" x 2.3"	16μF .....200V 32.95 .....1.5" x 1.7"
0.10μF .....600V 13.75 .....65" x .78"	2.2μF .....200V 19.95 ......80" x .90"	20μF .....200V 46.95 .....1.7" x 1.7"
0.10μF .....1500V 16.75 .....86" x 1.0"	2.2μF .....400V 17.50 ......95" x 1.2"	22μF .....200V 48.95 .....1.7" x 1.8"
0.22μF .....400V 13.75 .....50" x .60"	3.0μF .....200V 21.95 ......90" x 1.0"	
0.22μF .....600V 15.50 .....75" x .94"	3.3μF .....400V 18.95 .....1.1" x 1.4"	
0.33μF .....400V 14.95 .....60" x .65"	4.0μF .....200V 20.95 ......96" x 1.2"	
0.33μF .....600V 15.25 .....1.8" x 1.2"	4.0μF .....400V 19.95 .....1.1" x 1.4"	
0.47μF .....400V 15.50 .....60" x .78"	4.0μF .....600V 52.50 .....1.9" x 2.3"	
0.47μF .....600V 19.95 .....1.0" x 1.2"	4.0μF .....1500V 82.95 .....2.8" x 3.0"	
0.47μF .....1500V 23.50 .....1.3" x 1.3"	4.7μF .....200V 25.50 .....1.0" x 1.2"	
0.68μF .....400V 13.95 .....69" x .87"	5.0μF .....200V 26.50 .....1.1" x 1.2"	
	5.0μF .....400V 22.95 .....1.2" x 1.5"	

Superior audio grade metallized polypropylenes. Black lead is outer foil, and manufacturer recommends this lead be source in coupling applications and at ground in power supply. Prices reflect 05/2007 price increase. All are 10% tolerance except where noted. **Deduct 10% for Auricap order over \$250.00, mix ok.**

About Bybee Technologies - And Bybee Quantum Purifiers

Jack Bybee, a theoretical physicist specializing in quantum mechanics and superconductivity, developed a series of esoteric wire and power purification technologies for the passive sonar systems of the U.S. Navy's atomic submarine fleet. Even the battery stored DC power used in these submarines required special filtration to lower the noise floor to a level that did not compromise sonar performance. Many of the military applications of this technology are still classified; however, continuing research has led Jack Bybee to the development of solutions specific to power and audio/video circuits: the Bybee Quantum Purifiers.

The Problem

There are many kinds of noise associated with electronics. In audio reproduction, electronic noise is often manifested as lack of detail, focus and resolution. In video, this noise creates obstacles to achieving industry standards for sharpness and color definition. The removal or reduction of noise in the conducting medium is our goal.

The Noise

Bybee Quantum Purifiers address several kinds of electronic noise. Thermal noise in electronic equipment is typically created by the excitation of phonons, which are resonances in conductors caused by the movement of electrons through the quantum well. Phonons are a type of noise in themselves; they are caused by a certain class of electrons colliding with the crystal lattice of conductors (silver, copper, etc.) through which they are being transmitted. Such phonons travel, not at the speed of light, but of sound, and therefore are instantly out of phase with the signal. Shot noise, which is generated by the operation of transistors, is similar in nature to thermal or white noise. Low-frequency ($1/f$) noise is always present, and increases as an inverse power of the frequency.

Electrons

The Bybee solution is based on principles derived from quantum mechanics, the study of how electrons behave at the subatomic level. Quantum physicists have learned that electrons have an intrinsic angular characteristic expressed in terms of spin (either up or down), which describes their orbital behavior around the nucleus of an atom. When subjected to Bybee's high-temperature near-superconductive material, electrons tend to join in a beneficial manner, increasing the velocity of propagation (VP) by forming what are known as Cooper's Pairs (one spin-up electron joined with a spin-down). Coopers' Pairs have the unique ability to tunnel through the crystal lattice of the conductor (such as a copper wire) essentially unimpeded, therefore eliminating virtually all quantum noise phenomena. To understand this effect, imagine a football game in which the player receiving the kick off could run straight down field to the goal line without being touched by any defenders.

The Bybee Quantum Purifiers

Bybee Technologies has developed devices fabricated from ceramics doped with oxides of rare-earth metals such as zirconium and neodymium. They achieve a VP of 92% of the speed of light, which is far higher than VPs of common conductors, which typically range from 50 to 70% of the speed of light.

In addition to being near-superconductive, Bybee Quantum Purifiers are electrically passive and stable in any circuit. They induce no phase shift whatsoever, and are totally non-reactive—meaning there is no reactance between capacitance and inductance.

These qualities are beneficial in numerous ways. When placed between an amplifier's power transformer and diode bridge, for example, the Quantum Purifier eliminates undesirable impedance mismatches. In an amplifier-to-speaker connection, the absence of reactance creates an optimal signal transfer and presents an easier load to the amplifier. When transmitting digital information, the Bybee Quantum Purifier eliminates the overshoot and ringing that can occur in the leading edge of the square wave. This type of distortion is a major contributor to the harshness and glare often associated with digital sound.

BYBEE QUANTUM PURIFIER DESCRIPTIONS

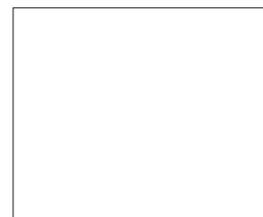
All Quantum Purifiers are specially shielded using ERS Stealth carbon fiber material and are cryogenically treated to enhance performance.

Large purifiers (typically used in AC applications, and with loudspeaker transducers): **\$170.00 each** (sorry recent huge price increase)

Length: 2 inches
 Diameter: 1/2 inch
 Leads: one inch, 14 gauge copper
 Current-handling: 15 A Voltage: >1000 V

Small Slipstream Purifiers (typically used in lower-current AC circuits, non-AC analog and digital circuits, and smaller midrange drivers and tweeters where limited space prevents use of the large purifiers): **\$83.50 each**

Length: one inch
 Diameter: 3/8 inch
 Leads: one inch, 18 gauge copper
 Current-handling: 4.3 A Voltage: >1000 V



New Technology:

Bybee MUSIC RAILS™

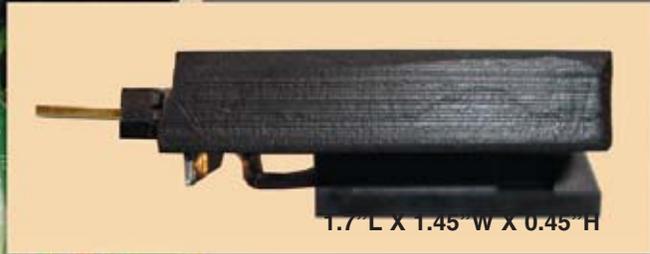
Reduce Power Supply Noise Up to 45 dB*

Bybee In! Noise Out!



"This device represents my most important breakthrough in music realism."

Jack Bybee



1.7" L X 1.45" W X 0.45" H
15 Amp Bybee Music Rail
side view including pin length.



2 Amp Bybee Music Rail
1.7" L X 1.45" W X 0.25" H

Never before have equipment manufacturers had such an efficient way to reduce signal and noise on the power supply rails *Not like this!* Our new technology is captured in a compact module that reduces power supply signal and noise up to 45 dB. *Hearing is believing.*

Suitable for a wide range of electronic devices, the **Bybee MUSIC RAILS™** are direct current power conditioners -- active electronic modules built on small circuit boards that measurably reduce all types of noise on power supply rails. With low noise-floor and low impedance, these exclusive devices produce a highly purified source of DC power.

Unwanted noise power is reduced by a factor of 32,000 times.* There is also measurably less interference among audio stages on the power supply rail due to nearly zero impedance output. Sonically, this results in a blacker background, faster transients, sharper image focus, better bass punch, more detail and improved definition.

* Suppression factors may vary. Output noise equals either raw supply noise minus suppression or DCPC noise floor, whichever is higher.

BONUS BENEFITS: Our exclusive **Bybee MUSIC RAILS** have shown that they can clean up what the filter capacitor is supposed to do, so fewer or less expensive capacitors can be utilized. This allows OEM equipment that uses the Bybee Music Rails to be small and often dramatically lower in cost.

APPLICATIONS: A Bybee Music Rail is a highly efficient polishing filter that reduces power supply noise throughout the audible spectrum and up to about 100 KHz. It is designed to be placed between the power supply rail and the load circuitry, providing 45dB of noise suppression to a limiting noise floor of less than 20nV/root Hz. With zero external parts counting for voltages up to 24V, and only three external parts for voltages up to 550V, it is ideal for equipment modifiers as well as OEM s. Two versions of the 15 Amp and two versions of the 2 Amp models are available covering positive and negative supply rails at both high and low current levels.

Please refer to or request technical data sheets.

2A positive Music Rails @\$58.50
2A negative Music Rails @\$58.50
15A positive Music Rails @\$65.00
15A negative Music Rails @\$65.00

Deduct 10% for 6+ mix.
Deduct 20% for 12+ mix.
Deduct 25% for 25+ mix.