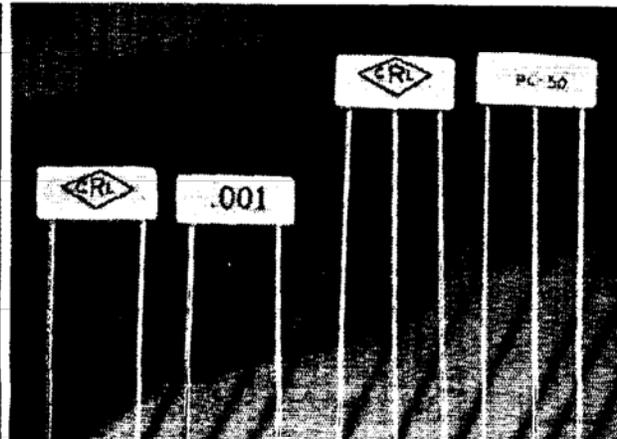
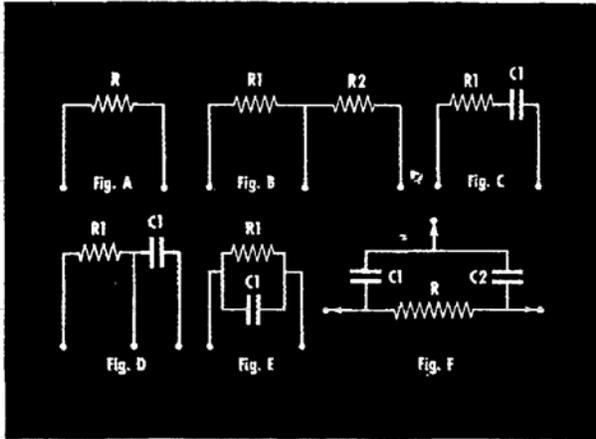


Centralab Announces

PRINTED ELECTRONIC CIRCUITS NOW AVAILABLE TO HAMS!



See technical data below

P. E. C. Units illustrated are exact size.

PRINTED ELECTRONIC CIRCUITS (P. E. C.)

Now — for the first time, Centralab's complete line of famous Printed Electronic Circuits are available as stock items to Hams. Everything from the tiny resistor and resistor-capacitor plates, described here, to complete 3 full-stage speech amplifiers are yours to use in your own rigs — miniature or not. Printed Electronic Circuits are tiny components pioneered exclusively by Centralab. Complete and ready to install. They consist of resistance materials and pure metallic silver circuits printed and fired on sturdy CRL Ceramic X plates with circuit leads attached. Units are protected with moisture-proof phenolic coating. Ideal components for low power applications . . . give you small size, easy assembly and the utmost in permanence and reliability. Ask your distributor about them today. *For complete information on the complete line of CRL PEC units available to you, see CRL Catalog 27.*

RESISTOR AND RESISTOR-CAPACITOR P.E.C. UNITS

Tiny units of this series are ideal in low voltage applications where miniaturization is essential.

SIZE PLATE

17/32" x 7/32" x 7/64" thick maximum.

LEADS

No. 26 tinned copper, 1 3/4" minimum length.

CAPACITOR RATINGS

All capacitor units are 150 volts d.c. working, 300 v.d.c. flash test. Tolerances: 1000 mmf. +50% -20%; 100 mmf. ±20%.

RESISTOR RATINGS

All ±20% tolerances, 1/5 watt.

CRL CAT. NO.	CIRCUIT DRWG.	CONSISTING OF
PC-2	FIG. A	Resistor: 2 megohms
PC-21	FIG. B	Resistors: 1/2 megohm; 110,000 ohms
PC-30	FIG. C	Res.: 240,000 ohms. Cap.: 1000 mmf.
PC-33	FIG. D	RES.: 1 megohm. Cap.: 1000 mmf.
PC-36	FIG. F	Res.: 100,000 ohms. Cap.: 100 mmf.

FILPEC BALANCED DIODE LOAD FILTER

In Centralab's P.E.C. construction, the Filpec unit is one of the smallest multi-value components available. Consists of two capacitors and one resistor, bonded to a high dielectric Ceramic X plate. Integral connections consist of metallic silver paths "printed" on the base. Filpec is specially designed for use as a balanced diode load filter, but adaptable to variety of circuits.

SIZE PLATE

17/32" x 9/32" x 7/64" thick maximum.

LEADS

No. 26 tinned copper, 1 3/4" minimum length.

CAPACITOR RATINGS

Capacitors are rated 100 volts d.c. working, 200 v.d.c. flash test; tolerance +50% -20%.

RESISTOR RATING

Tolerance ±20%, 1/5 watt.

CRL CAT. NO.	TYPE	CONSISTING OF (See Fig. F)
PC-50	FILPEC	C1 = 100 mmf. C2 = 100 mmf. R = 47,000 ohms.
PC-51	FILPEC	C1 = 150 mmf. C2 = 150 mmf. R = 47,000 ohms.

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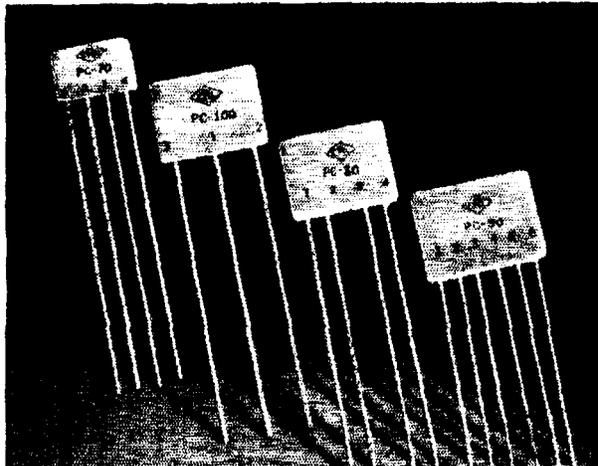
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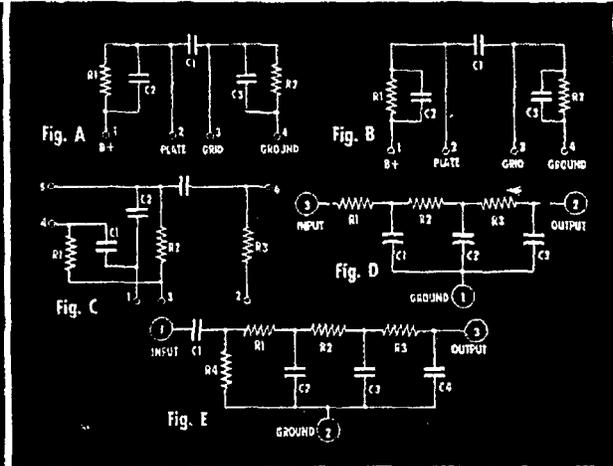
NOW Available to Hams

PRINTED ELECTRONIC CIRCUITS

FOR TV - AM - FM



P.E.C. Units illustrated are exact size



See technical data below

PRINTED ELECTRONIC CIRCUITS (P.E.C.) UNITS FOR TELEVISION AND RADIO APPLICATIONS

The Centralab P.E.C. units shown here are designed for specific radio and television circuit applications. They provide space saving and assembly convenience together with a high degree of permanence which is

not attained with ordinary components. These units are only a part of the complete CRL P.E.C. line available to you. For the complete line ask your distributor — or see CRL Catalog 27.

P.E.C. TRIODE COUPLATES

A Triode Couplate is a combination of three capacitors and two resistors bonded to a ceramic plate, connected by metallic silver paths fired to the base plate. It easily replaces the following components normally used in audio circuits when one tube is coupled to the grid of a following stage: Plate load resistor, grid resistor, coupling capacitor, plate r.f. bypass capacitor.

MIDGET No. 2 TRIODE COUPLATES

SIZE — $1\frac{3}{16}$ " x $\frac{1}{16}$ " x $\frac{1}{32}$ " thick.
LEADS — No. 24 tinned copper, $2\frac{1}{2}$ " long.
CAPACITOR RATINGS — 450 volts d.c. working, 800 v.d.c. flash test. Tolerances, .005 mfd. +80% -20%; 250 mmf. ±40%.
RESISTOR RATINGS — Tolerance ±20%, $\frac{1}{8}$ watt.

CAT. NO.	TYPE	CONSISTING OF (Diagram A)
PC-70	MIDGET #2 COUPLATE	C1 = .005 mfd. C2 and C3 = 250 mmf. R1 = 500,000 ohms. R2 = 500,000 ohms.
PC-71	MIDGET #2 COUPLATE	C1 = .005 mfd. C2 and C3 = 250 mmf. R1 = 250,000 ohms. R2 = 500,000 ohms.

STANDARD TRIODE COUPLATES (High Capacity)

SIZE — $1\frac{3}{16}$ " x $1\frac{1}{16}$ " x $\frac{1}{64}$ " thick.
LEADS — No. 22 tinned copper, $2\frac{1}{2}$ " long.
CAPACITOR RATINGS — 450 volts, d.c. working, 800 v.d.c. flash test. Tolerances, .01 mfd. +80% -20%; 250 mmf. +50% -20%.
RESISTOR RATINGS — Tolerance ±20%, $\frac{1}{8}$ watt.

CAT. NO.	TYPE	CONSISTING OF (Diagram B)
PC-80	STANDARD COUPLATE	C1 = .01 mfd. C2 and C3 = 250 mmf. R1 = 500,000 ohms. R2 = 500,000 ohms.
PC-81	STANDARD COUPLATE	C1 = .01 mfd. C2 and C3 = 250 mmf. R1 = 250,000 ohms. R2 = 500,000 mmf.

P.E.C. PENTODE COUPLATES

A Pentode Couplate replaces the following components normally used in audio circuits when one tube is coupled to the grid of a following stage: screen resistor, plate resistor, grid resistor, screen bypass capacitor, plate r.f. bypass capacitor, coupling capacitor.

SIZE — $1\frac{1}{4}$ " x $\frac{3}{8}$ " x .045" thick.
LEADS — No. 24 tinned copper, $2\frac{1}{2}$ " long.
CAPACITOR RATINGS — 450 volts d.c. working, 800 v.d.c. flash test. Tolerances, .005 mfd. GMV; 2000 mmf. and 100 mmf. +50% -20%; 50 mmf. ±20%.
RESISTOR RATINGS — Tolerance ±20%, $\frac{1}{8}$ watt.

CAT. NO.	TYPE	CONSISTING OF (Diagram C)
PC-90	PENTODE COUPLATE	C1 = .005 mfd. C2 = 50 mmf. C3 = 2000 mmf. R1 = 4.7 megohms. R2 = 1 megohm. R3 = 2.2 megohms.
PC-91	PENTODE COUPLATE	C1 = .005 mfd. C2 = 100 mmf. C3 = .005 mfd. R1 = 4.7 megohms. R2 = 1 megohm. R3 = 2.2 megohms.

P.E.C. VERTICAL INTEGRATOR PLATES

P.E.C. Vertical Integrator Plates are widely used in television vertical integrator networks. Two forms are available — see wiring diagrams D and E. Each has only three external leads.

SIZE — Cat. No. PC-100, $1\frac{3}{16}$ " x $1\frac{1}{16}$ " x $\frac{1}{16}$ " thick. Cat. No. PC-101, $1\frac{1}{16}$ " x $1\frac{1}{16}$ " x $\frac{1}{16}$ " thick.
LEADS — No. 22 tinned copper, $2\frac{1}{2}$ " long.
CAPACITOR RATINGS — 450 volts d.c. working, 800 v.d.c. flash test. Tolerances, +50% -20%.
RESISTOR RATINGS — Tolerance ±20%, $\frac{1}{8}$ watt.

CAT. NO.	TYPE	SEE DWG.	CONSISTING OF
PC-100	VERTICAL INTEGRATOR D		C1 = .002 mfd. C2 = .005 mfd. C3 = .005 mfd. R1 = 22000 ohms. R2 = 8200 ohms. R3 = 8200 ohms.
PC-101	VERTICAL INTEGRATOR E		C1 = .01 mfd. C2 = .002 mfd. C3 = .005 mfd. C4 = .005 mfd. R1 = 22000 ohms. R2 = 8200 ohms. R3 = 8200 ohms. R4 = 22000 ohms.

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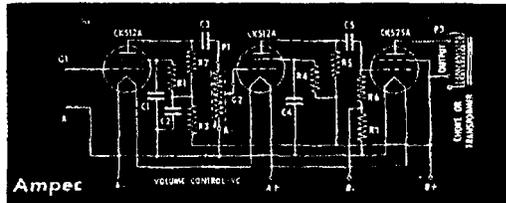
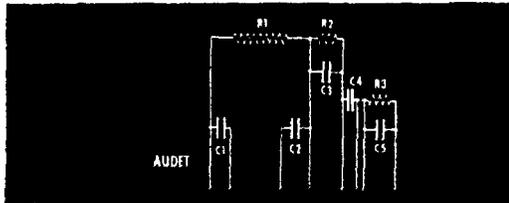
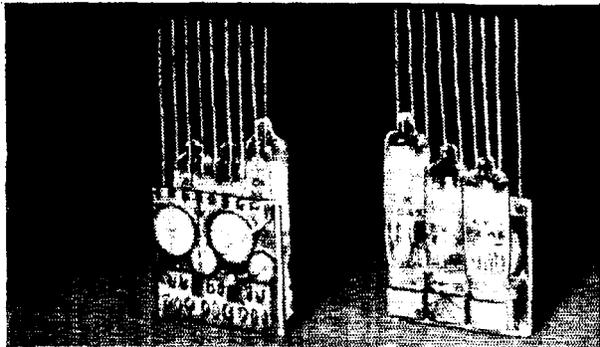
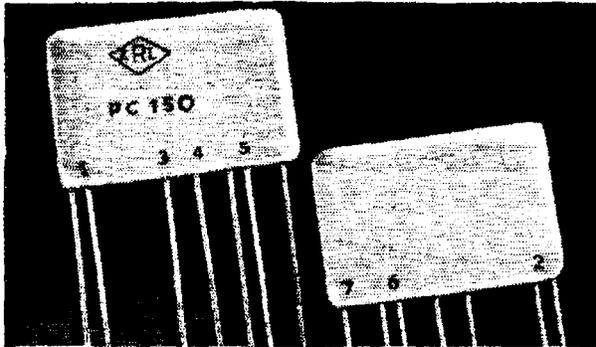
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NOW Available to Hams PRINTED ELECTRONIC CIRCUITS

For Miniature Work — Complete Audio Detector Stages and Speech Amplifiers



PRINTED ELECTRONIC CIRCUITS (P. E. C.) AUDET AND AMPEC Audet and Ampec represent Centralab's most advanced development of the printed electronic circuit art. They illustrate how complete circuits, or large parts of them can be produced with maximum compactness and long enduring permanence.

AUDET . . . Output Stage For AC-DC Radio Receivers

Audet — a P.E.C. audio-detector plate, with seven leads furnishes the values of all components which generally comprise output stage of AC-DC radio receivers. Where trouble occurs with old style components in this part of the set, you can replace the entire audio-detector stage with Audet.

SIZE — 1-5/16" x 7/8" x 1/8" thick.

LEADS — No. 24 tinned copper, 2 1/2" long.

CAPACITOR RATINGS— 450 volts d.c. working, 800 v.d.c. flash test. Tolerances, 220 mmf. $\pm 50\%$ -20%; .002 mfd. and .005 mfd. GMV.

RESISTOR RATINGS — tolerance $\pm 20\%$, 1/5 watt.

CAT. NO.	TYPE	CONSISTING OF (See drawing A)
PC-150	Audet	C1 = .002 mfd, C2 = 220 mmf. C3 and C5 = 220 mmf. C4 = .005 mfd. R1 = 6.8 megohms. R2 = 470,000 ohms. R3 = 470,000 ohms.

AMPEC . . . Complete Speech Amplifier

There's never been an electronic device like Centralab's Ampec. It is one compact unit permanently bonded to a master plate with all components of an audio amplifier — tube sockets, capacitors, resistors, wiring. It's a full three tube, three stage speech amplifier.

Centralab Ampecs are widely used in hearing aids, for the most trouble-free performance ever attained. Ampec has other interesting applications, as mike pre-amplifier, etc.

SIZE — 1 1/4" x 1 3/8" x .340" over tube sockets.

LEADS — No. 26 tinned copper, 1 1/2" long.

CAPACITORS — 100 volts d.c. working, 150 v.d.c. flash test.

RESISTORS — Tolerance $\pm 20\%$, 1/5 watt.

RECOMMENDED TUBE COMPLEMENT — Two Raytheon type CK512AX; one Raytheon type CK525AX.

GAIN FREQUENCY PERFORMANCE— A voltage 1.2; Input voltage, 1 millivolt; B voltage 22. 50,000 ohm load. At 1000 cycles per second, the amplification factor is 4000.

RECOMMENDED VOLUME CONTROL — (not furnished) See drawing, for control marked VC. The ideal unit is Centralab Model B16 Control, Cat. No. B16-124, 3 megohms. The switch type is Cat. No. B16-224.

CAT. NO.	TYPE	CONSISTING OF (See drawing B)
PC-200	Ampec	Complete Three Stage Speech Amplifier, including three built-in sockets, less tubes.
PC-201	Ampec	Same as PC-200, but furnished complete with tubes, two CK512AX and one CK525AX.

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