CATALOG 1953

PEERLESS
TRANSFORMERS

PEERLESS ELECTRICAL PRODUCTS • A DIVISION OF ALTEC LANSING CORPORATION

INDEX TO PEERLESS TRANSFORMERS

NOTE: Separate price list includes a page index of individual items.

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Peerless Electrical Products Division of Altec Lansing Corporation reserves the right to modify or withdraw any catalog item without notice.

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INTRODUCTION

Over the past few years Peerless transformers have achieved the reputation of being the finest transformers available on the market. This enviable reputation has been maintained solely through constant engineering and continued attention to quality control on the production line.

The remarkable new transformers described in this catalog are the result of continuing research towards product improvement. This research is also responsible for Peerless' ability to manufacture custom transformers of the most difficult design. The scope of this operation is fully covered on Page 14.

New 20-20 PLUS

These transformers represent the most important development in the Peerless line for 1953. They continue to include all the famous features of the well known Peerless 20-20 line, PLUS wider frequency range, PLUS improved efficiency, PLUS smaller size, PLUS increased power rating, PLUS greater value.

For example, the new input transformer occupies less than half the space of its predecessor, yet it will handle one hundred times the power, and has a frequency range extending from 10 cycles to 30,000 cycles. In addition the balance on the primary winding has been improved to provide a line termination of repeating coil quality. Combined with all this, it has a streamlined case with the simplest of terminal and mounting arrangements. Suggested uses for this versatile input transformer include low level output and bridging service.

Although there are only six transformers in this new 20-20 PLUS group, their design is such as to provide a wide range of application.

New Super Standard Audio

In addition to the other transformers listed in the "Audio" section on Page 7, there are three new output transformers indicated by the symbol

A careful examination of the characteristics and specifications of these new units will prove interesting to the most critical user.

New Miniaturized Power

Small size is ever more important with the increased complexity of electronic equipment. Four new plate and filament transformers in the "R" series have been miniaturized as far as possible without making a single concession to temperature rise, reliability or economy of cost. They are identified on Page 4 by the symbol . For those who have miniaturization problems, these new units will prove invaluable.

New 400 Cycle Hermetically Sealed Power

On Page 15 are listed six special additions to the already extensive Peerless line. These 400 cycle hermetically sealed power transformers which are available for both single phase and three phase circuits, meet all JAN-T-27 and MIL-T-27 requirements and have proven their acceptance through wide use by the aviation industry.

POWER PEERLESS TRANSFORMERS

COMBINATION PLATE and FILAMENT TRANSFORMERS

R ** †

Type Number	High Voltage Secondary A.C. Volts	High Voltage Secondary D.C. MA	Filament Current, Amperes 5 V.	Filament Current, Amperes 6.3 V.-C.T.	Dimensions, In. H	Dimensions, In. D	Dimensions, In. W	Wt. Lb.
‡ R-080-A	275-0-275	20		2.	3⅛	2⅞	2 5/16	2¼
R-320-A	325-0-325	70	3.	3.	3½	3⅝	2⅞	4
(P) R-340-F	325-0-325	100	3.	5.	4⅜	3 1/16	2¾	3½
R-400-A	350-0-350	90	3.	4.	4 3/16	3⅝	3¾	6¼
R-480-A	350-0-350	120	3.	5.	4	3½	3¼	4
R-480-Q	350-0-350	120	3.	5.	5	4 5/16	4 1/16	8
R-482-A	350-0-350	120	3.	3. - 3.	4	3½	3¼	4
(P) R-490-F	350-0-350	200	3.	6.	5 5/16	3 15/16	3⅜	5½
R-560-A	400-0-400	200	3.	6.	5	4⅞	4⅜	11¾
(P) R-562-F	400-0-400	220	3.	6.	5 5/16	3 15/16	3⅜	6½
(P) R-630-F	500-435-0-435-500 (Has 100 V tap for C bias)	225	3.	6.	5⅜	4 5/16	3 13/16	8
R-800-A	400-0-400	300	4.	4. - 5.	5	6¼	4⅜	16½

FILAMENT TRANSFORMERS

F

	Secondary Current, Amperes 2.5V.C.T.	5.V.C.T.	6.3V.C.T.	7.5V.C.T.	10.V.C.T.	Test Volts R.M.S.	PRI. Volts 60 Cycle	Dimensions, In. H	D	W	Wt. Lb.
F-012-X			1.			2000	117	1⅝	2⅞	1⅝	½
F-037-X			1-1 (2 Windings)[5]			2000	117	2	3½	2	1
F-073-X			2-2 (2 Windings)[5]			2000	117	2⅜	3¾	2¼	1½
F-096-X	10.					7500	117	2⅝	4¼	2½	2⅛
F-139-E			8			2000	117	3½	3⅛	2⅞	3½
F-140-E					5	2000	117	3½	3⅛	2⅞	3½
F-155-E		15				10,000	117	3⅞	3½	3¼	6
F-168-E					10	2000	117	4 1/16	3⅛	2⅞	5¼
F-342-E				26		2000	117	4⅝	4½	3⅞	11

ISOLATION TRANSFORMERS

T †

	Primary Volts A.C. 60 C.	Secondary Volts A.C.	V. A. Continuous	H	D	W	Wt. Lb.
T-311-L	117	117	150	4⅝	4¼	3⅞	10
T-312-L	234	117	150	4⅜	4¼	3⅞	10

(Continued on Page 5)

PEERLESS TRANSFORMERS

POWER

PLATE TRANSFORMERS — P

Wt. Lb.	Dimensions, In. H	D	W	PRI Volts 60 Cycle	Secondary A.C. Volts	Rectifier Arrangement	D.C. MA⊖ CCS[1]	ICAS[2]	D.C.⊖ Volts	Secondary Test Volts RMS	Type Number
12	7	5	4	117	900-0-900 900-0-900 (2 Windings) Parallel connection	Full wave	360	500	600-750	10,000	P-705-N
					Parallel connection	Bridge	200	280	1200-1500		
					Series connection	Full wave	180	250	1200-1500		
					Series connection	Bridge	100	140	2400-3000		
35	10	7	5	117-234	2850-2275-1725-0-1725-2275-2850	Full wave (2 simultaneous loads)				10,000	P-710-N
					Load 1 2850-2275-0 -2275-2850	Load 1 Full wave	Load 1 400	Load 1	Load 1 2000-2500		
					Load 2 1725-0-1725	Load 2 Full wave	Load 2 100	Load 2 300	Load 2 1500		

SMOOTHING CHOKES — C

				Test Volts R.M.S.	Resistance Ohms	Inductance Henrys	Current D.C. MA	
1½	2⅜	3¾	2¼	1500	285	10	90	C-305-X
1¾	2⅜	3¾	2½	1500	80	3	225	C-315-X
2¾	3¼	3 1/16	2¾	1500	240	10	120	C-325-F
2⅛	2⅝	4¼	2½	1500	240	10	120	C-325-X
6	4 13/16	3 5/16	3 5/16	1500	150	10	200	C-390-F
6½	4 5/16	3¾	3¾	2500	110	10	250	C-455-A
25	7	7¼	5¾	6500	65	10/8.5	450/500	C-585-K

AUTOFORMERS — A

				V. A. Continuous	Input Volts A.C. 60 C.	Output Volts A.C.	
3½	3⅜	3⅛	3⅛	150	234	117	A-028-L
5¼	4	3⅝	3¼	300	234	117	A-042-L
					Voltages A.C. 60 Cycles		
9½	5½	4¾	4⅜	500	0-100-105-110-115-120-125		A-084-K

DATA POWER TRANSFORMERS

Most of the published characteristics of a power transformer can be verified with a voltmeter. If the transformer delivers rated current at the rated voltage, without undue temperature rise, it is probably satisfacto.y. Safe operation temperatures are limited by the properties of insulating materials, and are influenced by two factors: the heat generated by power losses, and the ability to dissipate this heat. For any temperature, the quantity of heat that can be dissipated is a function of size.

All Peerless power transformers are designed so as to operate within the 55° C. maximum temperature rise recommended by the A.I.E.E., when used on 60 cycle lines.

All ratings assume that the transformer is to be operated in substantially free air. Peerless engineers urgently recommend installation which allows for efficient cooling. Avoid: poor ventilation, high air temperatures, close proximity to other sources of heat, etc. If such a condition cannot be avoided, choose a transformer of higher current rating (larger size). This precaution is especially important for reliability. A transformer, unless it is grossly overloaded, seldom burns out immediately. Less severe overloading results in slow deterioration which may extend over a period of many months before eventual failure.

(P) New, Special Feature, item.
** All primaries are 117V, 60 cycle.
† All transformers in this group are supplied with electro-static shield.
‡ Low flux-density core for pre-amplifiers.

[1] CCS—Continuous duty.
[2] ICAS—Intermittent duty (20% duty cycle).
[3] No center tap on second winding.
⊖ Choke input to filter.

AUDIO PEERLESS TRANSFORMERS

INPUT TRANSFORMERS

K

	Type Number	Descriptive Data	Impedance, Ohms Pri.	Impedance, Ohms Sec.	Turns Ratio	Freq. Range ±1db	Dimensions, In. H	D	W	Wt. Lb.
	K-007-X	Single-Button Microphone to 1 or 2 Grids.	100	700,000 C.T.	1:84	Voice	1⅝	2⅞	1⅝	½
	K-021-X	Double-Button Microphone or Line to 1 or 2 Grids.	200 C.T.	100,000 C.T.	1:22½	100 5000	2	3½	2	1
low level	K-044-D	Line, Mixer, or Microphone to Single Grid. Max. Level: —20 dbm▲. 60 db. Magnetic Shielding. Can be rotated in clamp ring for null. Has Electro-Static Shield. 6" Leads.	600-250 and 30-50	70,000		30 15,000	1¾	1⅝	Round	½
	K-049-D	Line, Mixer or Microphone to Single Grid. Max. Level: +8 dbm▲. 30 db Magnetic Shielding.	500 C.T.-333 250-200 C.T. 125-50	60,000		20 20,000	2⅞	1¾	1¾	1
	K-049-Q	Same as K-049-D except has 90 db Magnetic Shielding.	500 C.T.-333 250-200 C.T. 125-50	60,000		20 20,000	3½	2⅜	2½	1½
	K-054-Q	Line, Mixer, or Microphone to 2 Grids. Max. Level: +18 dbm▲. 30 db Shielding.	500 C.T.-333 250-200 C.T. 125-50	70,000 •		20 20,000	3½	2⅜	2½	1½
high level	K-063-A	Line to push-pull Grids. Max. Level: +42 dbm.▲	500 C.T. 125	12,500 •		30 15,000	3⅛	3	2 5/16	2½

INTERSTAGE TRANSFORMERS

G

	Type Number	Descriptive Data	Impedance, Ohms Pri.	Impedance, Ohms Sec.	Turns Ratio	Freq. Range ±1db	Dimensions, In. H	D	W	Wt. Lb.
	G-306-X	Single Plate to 1 or 2 Grids.	10,000	96,000 C.T.	1:3.1	100 5000	1⅝	2⅞	1⅝	½
	G-318-D	Single Plate to Single Grid. Maximum Level: +8 dbm▲. 30 db Magnetic Shielding.	10,000	60,000		20 20,000	2⅞	1¾	1¾	1
	G-322-Q	1 or 2 Plates to 2 Grids. Max. Level: +18 dbm▲. 30 db Shielding.	20,000 •	70,000 •		20 20,000	3½	2⅜	2½	1½
	G-336-A	Push-pull Plates to 1 or 2 Grids.	20,000 C.T.	30,000 C.T.		40 10,000	2 13/16	2 11/16	2¼	1⅝

IMPEDANCE MATCHING TRANSFORMERS

E repeat coil

	Type Number	Descriptive Data	Audio Watts Max.	Audio Watts 70 V Line	Impedance, Ohms Pri.	Impedance, Ohms Sec.	Freq. Range	H	D	W	Wt. Lb.
	E-372-Q	Electro-static Shield. 60 db Magnetic Shield.	+18 dbm▲	—	500C.T.-333 250-200C.T. 125-50	500C.T.-333 250-200C.T. 125-50	20 20,000	3½	2⅜	2½	1½
■	E-374-X	Line to Speaker—RTMA Standardized line. Insertion Loss 0.6 db—¼ watt tap for lines of 500 or less ohms.	4	¼-½ ⅔-1 2-4	10,000 C.T. 7500 5000 C.T. 2500 1250	16-12-8 4-2 ★	30 15,000	2⅜	3¾	2¼	1¾
	E-377-X	Line to Speaker.	5	—	500	16-8	40 10,000	2	3½	2	1
■	E-383-X	Line to Speaker—RTMA Standardized line. Insertion loss 0.6 db. 2½ watt tap for lines of 500 or less ohms. Rated 20 watts 50-15,000 cps. 40 watts 150-15,000 cps.	10	1¼-2½ 3⅓-5 10-20 40 (See Data)	4000 C.T. 2000 C.T. 1500 1000 C.T. 500-250 125	16-12-8 4-2 ★	30 15,000	2⅝	4⅛	2⅞	2½

(Continued on Page 7)

PEERLESS TRANSFORMERS

AUDIO

IMPEDANCE MATCHING TRANSFORMERS (continued)

Wt. Lb.	Dimensions, In. H	D	W	Freq. Range	Impedance, Ohms Pri.	Sec.	Audio Watts Max.	70 V Line	Descriptive Data	Type Number
4¼	3⅞	3	3¼	30 15,000	1600 C.T. 1200 800 C.T. 400-200	16-12-8 4-2 *	24	3-4 6-12 24	Line to Speaker—RTMA Standardized line. Insertion Loss 0.6 db. Max.	E-386-E ■
9	4¾	4⅞	3⅞	30 15,000	625C.T.-470 312C.T.-156 78	16-12-8 4-2 *	64	8-11 16-32 64	Same Data as E-386-E.	E-392-E ■

REACTOR EQUALIZING L

				D.C. MA Normal	Max.	Ind. Henrys	Res. Ohms		Type Number
⅜	1¾	1⅝	Round	0	10	4	725	Low Pass Filter.	L-370-D

STANDARD OUTPUT TRANSFORMERS S

Wt. Lb.	Dimensions, In. H	D	W	Audio Watts	Impedance, Ohms Primary	Secondary	Pri. D.C. MA Per Winding Max.	Unbal.	Freq. Range ±1 db		Type Number
1½	3½	2⅜	2½	+ 18 dbm ▲	20,000 C.T. 12,500 C.T. 5000 3125	500 C.T. 200 C.T. 333-250 125-50	15	2	20 20,000	Single or push-pull plates to line. 30 db hum bucking.	S-448-Q
1¾	2 1⅜	2 1⅜	2¼	10	8000 C.T.	16-12-8-4	45	5	30 15,000	Push pull plates to speaker.	S-508-A
2	2⅞	2¾	2½	10	10,000 C.T. 8000 C.T.	16-8 *	40	4	20 30,000	Push pull plates to speaker.	S-510-F (P)
2½	3⅛	3	2 9/16	20	6600 C.T.	16-12-8-4	70	7	30 15,000	Push-pull plates to speaker.	S-516-A
3	4⅜	3 1/16	2¾	20	6600 C.T. 5000 C.T.	16-8-4 *	60	6	20 30,000	Push pull plates to speaker.	S-526-F (P)
3	3½	3¼	2⅞	20	5000 C.T. 3000 C.T.	500 C.T. 125 16-12-8-4	90	9	30 15,000	Push-pull plates to speaker or line.	S-530-A
2½	3⅛	3	2 9/16	20	5000 C.T. 3000 C.T.	16-12-8-4	90	9	30 15,000	Push-pull plates to speaker.	S-532-A
5½	4 11/16	3 9/16	3 9/16	40	5000 C.T. 4000 C.T.	16-8-4 *	140	14	20 30,000	Push pull plates to speaker.	S-542-F (P)
9	4¾	4⅝	3⅞	60	3800 C.T. 3200 C.T.	330, 82½ 16-12-8-4-2	250	25	30 15,000	Push-pull plates to speaker or line.	S-552-A ■

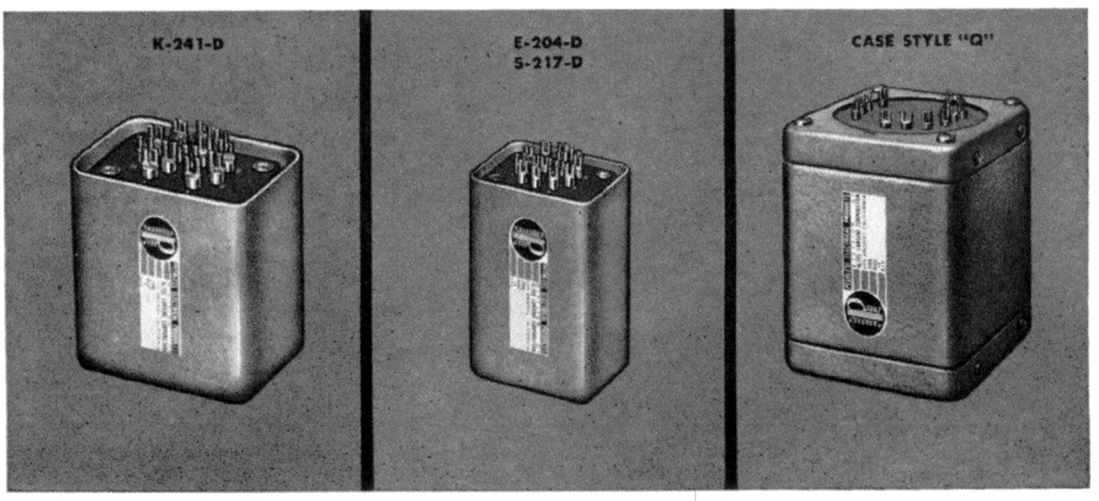
▲ Maximum operating level, 1 mw reference.
● Impedance is total of two separate windings.
* All low-impedance windings of high-level output and impedance matching transformers may be worked into loads within ±20% of the rated impedance.
■ For RTMA standardized 70 volt line. See "Data", Page 13.
(P) New, Special Feature item.

20-20 PLUS PEERLESS TRANSFORMERS

AT NEW

	Type Number	Descriptive Data	Impedance, Ohms Pri.	Impedance, Ohms Sec.	Max. Level ▲	PRI. D.C. MA Per Winding Max.	PRI. D.C. MA Per Winding Unbal.	Dimensions, In. H	Dimensions, In. D	Dimensions, In. W	Wt. Lb.
INPUT TRANSFORMERS **K** **low level**	K-241-D	Frequency response, ±1 db: 10-30,000 cps. Primary balanced to attenuate longitudinal currents in excess 50 db. Secondary may be used single ended or in push-pull. Has 2 secondary windings with balanced capacitance to ground. Electrostatic shield is provided between primary and secondary. Has 90 db electromagnetic shielding. Insertion loss 1¼ db. Transformer will operate into open circuit or resistive load. Frequency response down less than 1 db at 15 KC, when operated into resistive load shunted with 120 MMFD, capacitance. High power rating makes transformer suitable for use as output transformer.	500 280 125 31 or 600 340 150 37.5	70,000 • or 84,000 •	+8 dbm	0	—	2¾	1½	2	¾
OUTPUT TRANSFORMERS **S** **line level**	S-217-D	Frequency response: ±1 db: 5-65,000 cps. Primary may be used single ended or push-pull. Secondary windings have balanced capacitance to ground. Has center-tapped tertiary of 24.5 ohms which may be used for feedback or grounded for electrostatic shield. Parallel feed is required. Astatic balance and electromagnetic shield provide approx. 50 db of shielding. Insertion loss 0.5 db. Transformer may be used as excellent input transformer to either single or push-pull grids. When used this way balanced low impedance winding provides excellent line termination.	12,500 3125 Tert—See Data	600 300 150 75	+20 dbm	25	0	3¼	1½	2	1¼
MATCHING TRANSFORMERS **E** **repeat coil**	E-204-D	Frequency response, ±1 db: 5-85,000 cps. Electrostatic shield. Astatic balance and electromagnetic shield provide approx. 50 db magnetic shielding. Attenuates longitudinal currents 80 db in balanced circuit in frequency range up to 70,000 cps. Insertion loss 0.4 db.	500 C.T. 125 C.T. or 600 C.T. 150 C.T.	500 C.T. 125 C.T. or 600 C.T. 150 C.T.	+23 dbm	100	0	3¼	1½	2	1¼
	As a Hybrid Transformer	This precise matching transformer is an excellent hybrid unit for operation from two 250/300 ohm sources. Balancing resistor of approximately 125/150 ohms required in primary circuit. For maximum attenuation between sources the exact value of resistor should be determined from measurements made in circuit where transformer is used. Correct value will yield average attenuation of 27 to 30 db with a maximum attenuation of approximately 50 db at some point between 500 cps and 1,000 cps.	Impedance, Ohms Total Pri.: 500 or 600	Pri. 1: 250 or 300	Pri. 2: 250 or 300	Sec.: 500 125 or 600 150					Maxi. Level ▲: +23 dbm

(Continued on Page 9)



PEERLESS TRANSFORMERS — NEW 20-20 PLUS

Wt. Lb.	Dimensions, In. H	D	W	PRI. D.C. MA Per Winding Max.	Unbal.	Maximum Level ▲	Impedance, Ohms Pri.	Sec.	Descriptive Data	Type Number
3¼	4⅛	3 5/16	3 1/16	70	7	+43 dbm (20 watts) See Data	6600 C.T. 1650 C.T.	16, 12 8, 4, 2	Frequency response, ±1 db: 10-100,000 cps. Power rating, at 15 cps., 10 watts; at 10 cps., 5 watts. Insertion loss 0.5 db. Can be used between half and double of rated impedances. For half impedances, power ratings are doubled. For doubled impedances, power ratings are halved. Secondary may be operated with one end, or C.T. grounded.	S-226-Q Ⓟ
6½	4⅝	3⅝	3½	120	12	+46 dbm (40 watts) See Data	5000 C.T.	16, 12 8, 4, 2	Same as S-226-Q, except: Power rating, at 15 cps., 20 watts; at 10 cps., 10 watts. Insertion loss, 0.4 db.	S-256-Q Ⓟ
14	5¾	4½	4⅜	125 250	12 25	+49 dbm (80 watts) See Data	8000 C.T. 2000 C.T.	16, 12 8, 4, 2	Same as S-226-Q, except: Frequency response ±1 db: 8-80,000 cps. Power rating, at 15 cps., 40 watts; at 10 cps., 20 watts. Insertion loss, 0.3 db.	S-268-Q Ⓟ

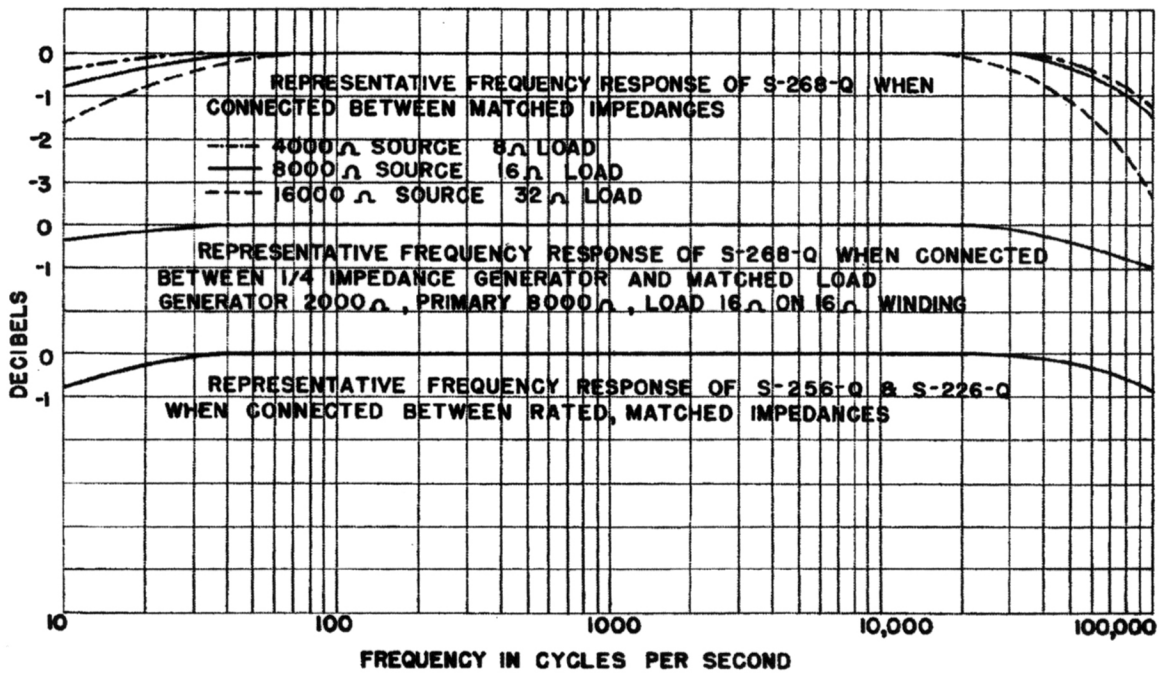
OUTPUT TRANSFORMERS

high level **S**

Ⓟ New, Special Feature, item.

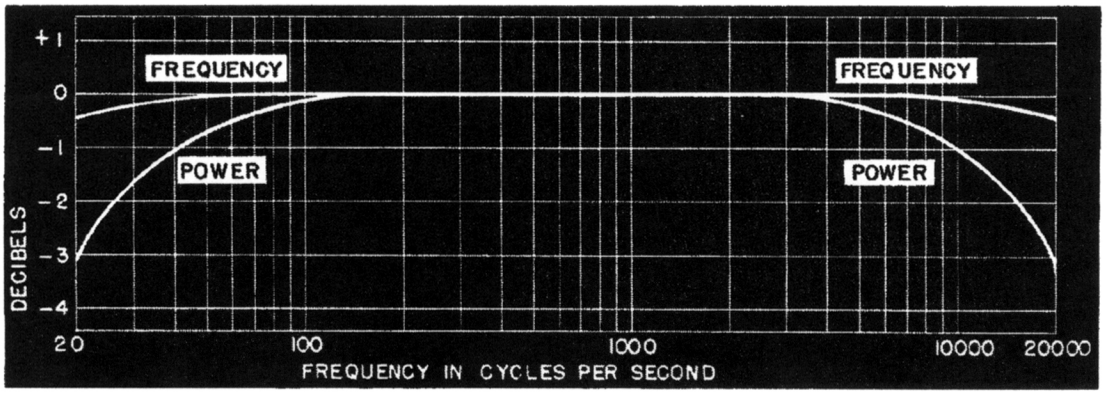
▲Maximum operating level, 1 mw reference.

●Secondary impedance is total of two separate windings.



20-20 PEERLESS TRANSFORMERS

AUDIO TRANSFORMERS



This curve represents the maximum expected power and frequency deviation from the rated mid-range value for Peerless 20—20 transformers.

	Type Number	Descriptive Data	Impedance, Ohms Pri.	Impedance, Ohms Sec.	Max. Level	PRI. D.C. MA Per Winding Max.	PRI. D.C. MA Per Winding Unbal.	Dimensions, In. H	Dimensions, In. D	Dimensions, In. W	Wt. Lb.
INPUT TRANSFORMERS K											
low level	K-221-Q	Secondary may be used single ended or in push-pull—has two secondary windings with balanced capacitance to ground. Electro-static shield is provided between primary and secondary. Has 90 db electro-magnetic shield.	500 250 30 or 600 300 36	70,000 • or 84,000 •	−12 dbm	0		3½	2⅜	2½	1⅝
line level	K-251-Q	Same as K-221-Q except has 30 db electro-magnetic shield.	500, 250 125, 62½ or 600, 300 150, 75	40,000 • or 48,000 •	+23 dbm	0		4⅛	3 3/16	3 1/16	2⅜
high level	K-281-Q	For push-pull arrangement only—has two secondary windings with balanced capacitance to ground.	500, 220 125,56,14 or 600, 265 150, 67 17	30,000 • or 36,000 •	+38 dbm	0		4⅝	3⅜	3½	5½
INTERSTAGE TRANSFORMERS G											
low level	G-212-Q	Both primary and secondary may be used single-ended or in push-pull—has two secondary windings with balanced capacitance to ground—has electro-static shield between primary and secondary—parallel feed is recommended. Has 90 db electro-magnetic shield.	10,000 2,500	40,000 10,000	−12 dbm	5	0.5	3½	2⅜	2½	1⅝
line level	G-252-Q	Same as G-212-Q except has 30 db electro-magnetic shield.	10,000 2,500	40,000 10,000	+23 dbm	10	1.0	4⅛	3 3/16	3 1/16	2⅜

(Continued on Page 11)

PEERLESS TRANSFORMERS 20-20

Wt. Lb.	Dimensions, In. H	D	W	PRI. D.C. MA Per Winding Max.	Unbal.	Maximum Level ▲	Impedance, Ohms Pri.	Sec.	Descriptive Data	Type Number	
2¾	4⅛	3 5/16	3 1/16	12	12	+26 dbm	8000 2000 or 9600 2400	500, 250 125, 62½ or 600, 300 150, 75	Primary may be used single ended or in push-pull. Will carry tube plate current. Two secondary windings with balanced capacitance to ground. 40 db electro-magnetic shield.	S-225-Q	line level
6	4⅝	3⅝	3½	50	5	+43 dbm (20 watts)	10,000 C.T.	16, 8 4, 2 *	Secondary may be operated with one end grounded.	S-227-Q	high level
6	4⅝	3⅝	3½	70	7	+43 dbm (20 watts)	6600 C.T.	16, 8, 4, 2, *	Same as S-227-Q.	S-230-Q	
6	4⅝	3⅝	3½	70	7	+43 dbm (20 watts)	6600 C.T.	500, 250 125, 62½	Secondary should be operated balanced to ground.	S-235-Q ■	
6	4⅝	3⅝	3½	90	9	+43 dbm (20 watts)	5000 C.T.	16, 8, 4 2, *	Same as S-227-Q.	S-240-Q	
6	4⅝	3⅝	3½	90	9	+43 dbm (20 watts)	5000 C.T.	500, 250 125, 62½	Same as S-235-Q.	S-242-Q ■	
6	4⅝	3⅝	3½	110	11	+43 dbm (20 watts)	3000 C.T.	16, 8 4, 2 *	Same as S-227-Q.	S-245-Q	
6	4⅝	3⅝	3½	110	11	+43 dbm (20 watts)	3000 C.T.	500, 250 125, 62½	Same as S-235-Q.	S-250-Q ■	
10	5	4 5/16	4 1/16	110 220	11 22	+46 dbm (40 watts)	10,000 C.T. 2500 C.T.	16, 8, 4, 2 *	Two center-tapped primaries may be used in series or parallel. Secondary may be operated with one end grounded.	S-265-Q	
10	5	4 5/16	4 1/16	110 220	11 22	+46 dbm (40 watts)	10,000 C.T. 2500 C.T.	500, 250 125, 62½	Same as S-265-Q except secondary should be operated balanced to ground.	S-270-Q ■	

▲ Maximum operating level, 1 mw reference.

● Secondary impedance is total of two separate windings.

* All low-impedance secondary windings of high-level output and impedance matching transformers may be worked into loads within ± 20% of the rated impedance.

■ For RTMA standardized 70 volt line. See "Data", Page 13.

20-20 PEERLESS TRANSFORMERS

BRIDGING TRANSFORMERS

K, G

Type Number	Descriptive Data	Impedance, Ohms Sec.	Impedance, Ohms Pri.	Unmatched Bridging 500/600 Ohm Line: Bridged Line Max. Level▲	Unmatched Bridging 500/600 Ohm Line: Bridging Loss db	Matched Bridging 500/600 Line: Bridged Line Max. Level▲	Matched Bridging 500/600 Line: Bridging Loss db	Matched Bridging 500/600 Line: Resist. 2 Reqd. (1 watt)	Dimensions, In. H	D	W	Wt. Lb.
K-221-Q	Has electrostatic shield and 90 db electro-magnetic shield.	500/600 250/300 30/36	70,000 17,500	+9 dbm +3 dbm	21½ 15½	+15 dbm +8 dbm	28½ 21	33,000 7500	3½	2⅜	2½	1⅝
G-212-Q	Same data as K-221-Q.	40,000 10,000	10,000	+1 dbm	+6 db (Gain)	+8 dbm	0	4150	3½	2⅜	2½	1⅝
G-252-Q	Has electrostatic shield and 30 db electro-magnetic shield.	40,000 10,000	10,000	+36 dbm	+6 db (Gain)	+43 dbm	0	3600	4⅛	$3\frac{3}{16}$	$3\frac{1}{16}$	2⅝

IMPEDANCE MATCHING TRANSFORMERS

E

Type Number	Descriptive Data	Impedance, Ohms Pri.	Impedance, Ohms Sec.	Maximum Level▲	Pri. D.C. MA. Max.	Pri. D.C. MA. Unbal.	Watt Power RMA 70v Line	Dimensions, In. H	D	W	Wt. Lb.
E-214-Q	For use between line and speaker.	1000 500 250	16, 12 8, 4, 2 ★	+40 dbm (10 watts)	—	—		4⅛	$3\frac{3}{16}$	$3\frac{1}{16}$	2¾
■ E-233-Q	Line to speaker. Primary impedances for RTMA 70v line. Insertion loss less than 1¼ db. Flanged mounting plate furnished.	4000 C.T. 3000 2000 C.T. 1000 500	16, 12 8, 4, 2 ★	+40 dbm (10 watts)	—	—	1¼, 1⅔ 2½, 5 10	4⅛	$3\frac{3}{16}$	$3\frac{1}{16}$	2¾
■ E-243-Q	Same data as E-233-Q except insertion loss less than ¾ db.	1000 C.T. 750, 500 C.T. 250, 125	16, 12 8, 4, 2 ★	+43 dbm (20 watts)	—	—	5, 6⅔ 10, 20	4⅝	3⅝	3½	6

▲ Maximum operating level, 1 mw reference.

★ All low-impedance secondary windings of high-level output and impedance matching transformers may be worked into loads within ± 20% of the rated impedance.

■ For RTMA standardized 70 volt line. See "Data", Page 13.

PEERLESS TRANSFORMERS DATA

RTMA 70v. LINE

The RTMA has standardized the output circuits of power amplifiers for sound distribution systems on the basis of a 70-volt loudspeaker line. This means that an amplifier should have an output impedance such that, under test conditions, it will supply 70 volts of single frequency power at its maximum rated output. The 70-volt system works as follows:

1.) A matching transformer is required for each loudspeaker. The secondary of the transformer is tapped to match the loudspeaker impedance (such as 4, 8, 12, and 16 ohms).

2.) The primary of the transformer is tapped over a suitable range of impedances which are bracketed somewhat by the power rating of the unit. Depending upon the power required by the loudspeaker, the proper primary impedance tap is chosen so that the loudspeaker will draw the required watts when 70 volts is applied to it. In practice, the connection for a number of loudspeakers then becomes simple. First, the power needed for each loudspeaker location is determined. Second, a matching transformer of adequate power rating is chosen. Third, the primary impedance is selected which will give the desired power when connected across a 70-volt circuit.

3.) The power requirements for all loudspeakers are added up and an amplifier chosen which is capable of supplying at least this power. All loudspeaker transformer inputs may then be connected in parallel to the 70-volt output of the amplifier.

4.) The use of this system implies that the output operates at substantially a constant potential. That is, if all the loads are disconnected, the output voltage will not rise more than 3 db. Therefore, amplifiers used for this service should have an internal impedance sufficiently low to meet this requirement.

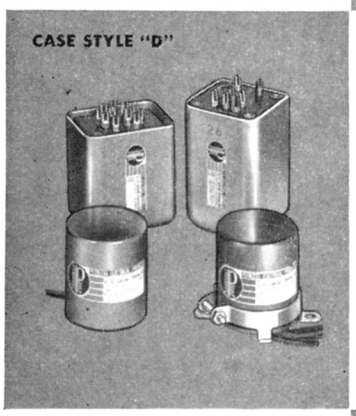
Output (S) and Matching (E) Transformers suitable for 70-volt line operation, are identified by (■) in the page margin and correlated footnote. They will be found on Pages 6, 7, 11 and 12.

CATALOGUE CASE STYLES

CASE STYLE "A"

CATALOGUE CASE STYLES

CASE STYLE "D"



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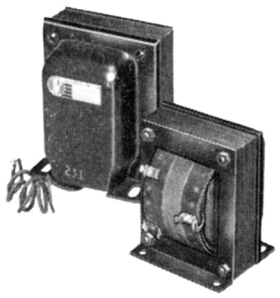
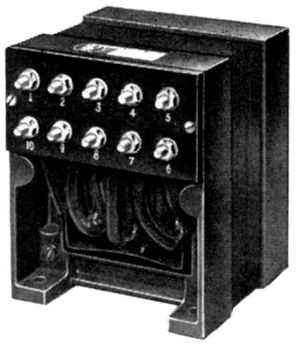


CASE STYLE "F"

CASE STYLE "K"



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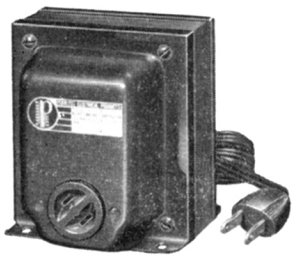

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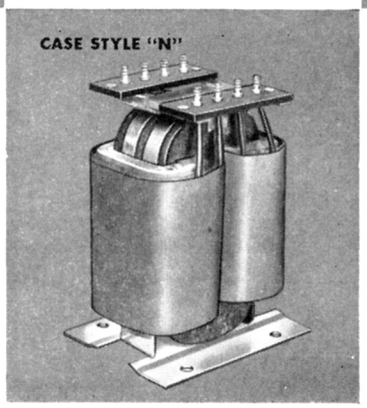
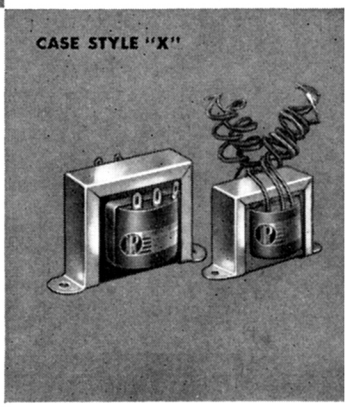


CASE STYLE "Q"

CASE STYLE "X"



CUSTOM TYPES

PEERLESS TRANSFORMERS

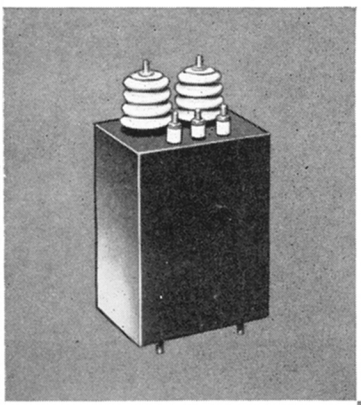
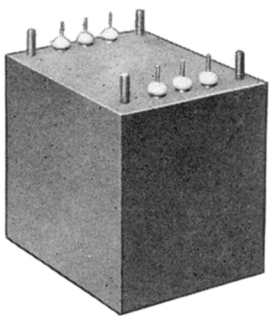
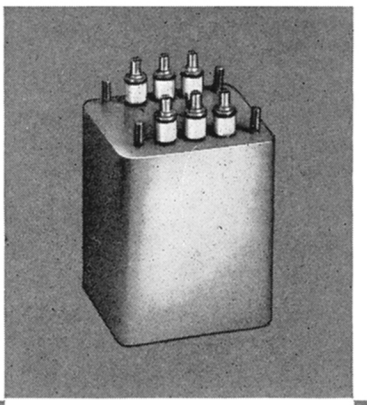
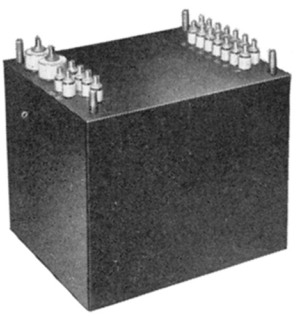
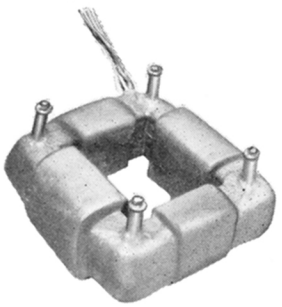
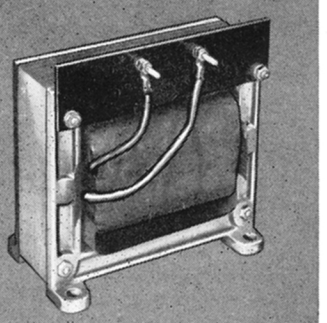
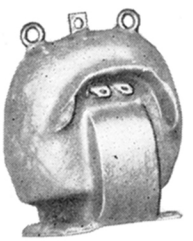
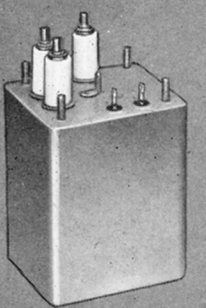
In the custom transformer field, Peerless has established an enviable reputation as a result of continuing to design transformers to meet the most unusual and stringent specifications submitted by civilian manufacturers and government contractors, and then manufacturing these transformers with tight quality control. Peerless engineers are experienced through years of transformer application involving thousands of designs. Peerless manufacturing facilities are equipped to handle the most difficult problems of transformer manufacture—from single units to quantities in thousands.

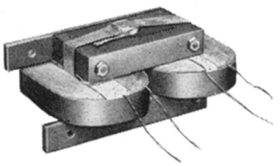
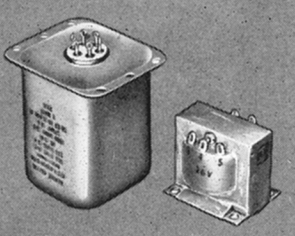
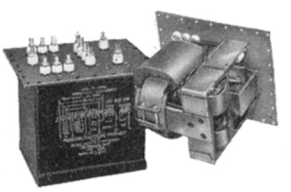
Built to meet all JAN-T-27 and MIL-T-27 specifications, many of these transformers are being used in radar, sonar, guided missiles, radio communications and many other applications. They are available in such types as high voltage and filament supply, charging chokes, saturable reactors, pulse transformers, etc.—in power range from microvolts to 30,000 volts and from 1 milliwatt to 25 KVA; and in several types of construction such as hermetically sealed oil filled heliarc cases—hermetically sealed potted cases—solder sealed metal cases—and Fosterite treated transformers with thermosetting resin.

In addition to the transformers described above which meet Class A and Class B requirements, Peerless manufactures units in accordance with the requirements of Class H. Class H transformers will operate in ambient temperatures up to +200 degrees centigrade and will function satisfactorily in temperatures as low as —70 degrees centigrade.

All insulating materials are inorganic, and include glass, asbestos, ceramics, Silicone varnishes and Silicone oils. Class H transformers are used where extreme miniaturization is the paramount requirement.

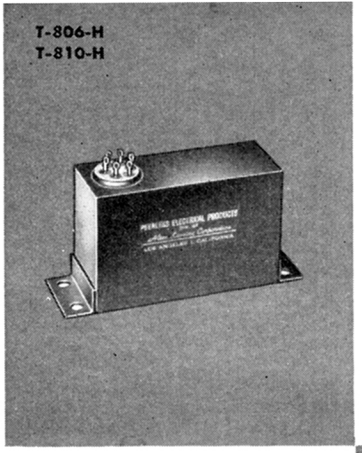
If you have need for custom transformers for either civilian or government requirements you will find it profitable to contact Peerless with complete assurance that they can design to any given specification and manufacture in whatever quantities are desired.

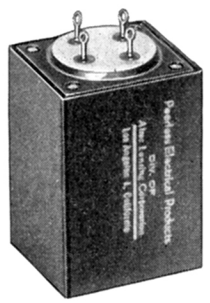




SPECIAL TYPES

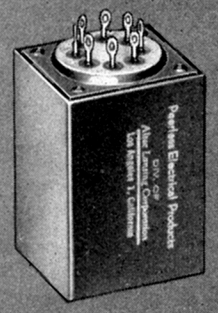
T-806-H
T-810-H



T-805-H

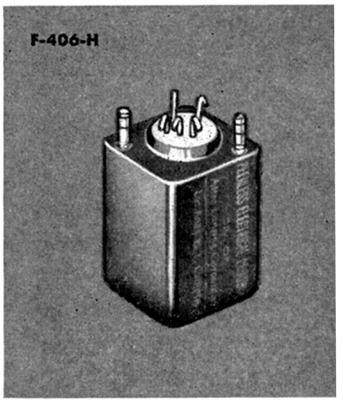


F-410-H



R-895-H

F-406-H



All transformers on this page in "H" style cases, as illustrated, are made in accordance with the requirements of specification MIL-T-27, Grade 1, Class A. Cases are finished in black. A fungicidal coating can be furnished at an additional charge.

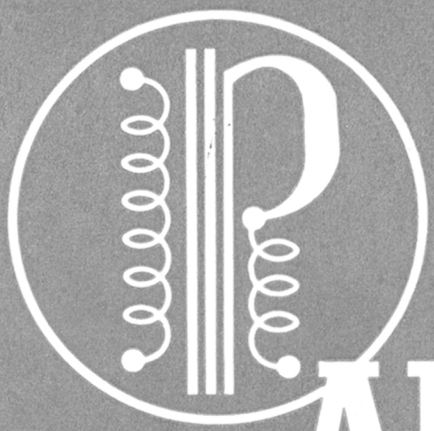
Wt.	Dimensions, In.			Secondary		Primary			VA	Type Number
Lb.	H¶	D	W	Volts	Amp.	Volts	Freq. cps	Phase		
.37	1¾	1¼	1¼	6.3 C.T.	0.8, A.C.	115	380-1000	1	5	F-406-H
.75	2½	1 7/16	1⅝	6.3/6.0 C.T. Current is total at either voltage or both in combination.	6.6, A.C.	115	380-1000	1	42	F-410-H
1.7	2¾	2	2⅛	300-0-300 6.3 6.3	.05, D.C. 2.25, A.C. 2.25, A.C.	115	380-1000	1		R-895-H
.88	2¾	1 7/16	1⅝	26	1.9, A.C.	115	380-1000	1	50	T-805-H
1.95	2½	4 (5 over flanges)	1½	26	0.65, A.C. per ϕ wye	115	380-1000	3 delta	50	T-806-H
2.4	3½	4 (5 over flanges)	1½	26	1.3, A.C. per ϕ wye	115	380-1000	3 delta	100	T-810-H

¶ Height of case only. Does not include terminals or studs.

F

R

T



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