

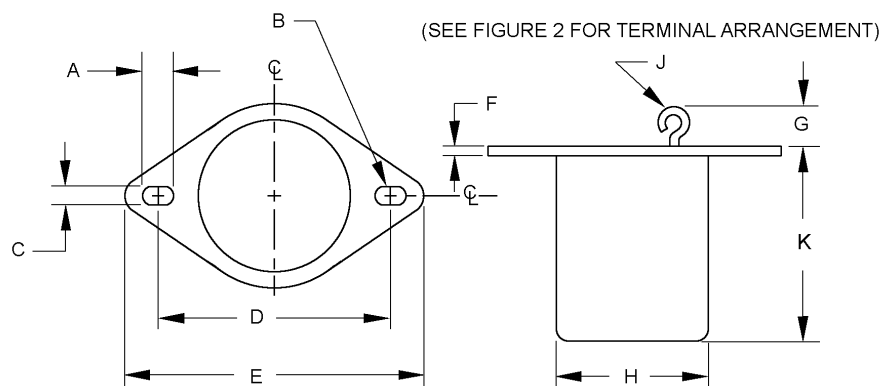
MIL-PRF-27/166B
w/AMENDMENT 2
20 June 2024
SUPERSEDING
MIL-PRF-27/166B
w/AMENDMENT 1
1 November 2016

PERFORMANCE SPECIFICATION SHEET

TRANSFORMERS, AUDIO FREQUENCY

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the products described herein shall consist of this specification and [MIL-PRF-27](#).



CIRCUIT DIAGRAM AND MARKINGS
(see TABLE I and FIGURE 3)

Dim	Inches	mm
A	.166	4.22
B	Slot Mounting (2-slots) Provided permits MTG. 1.125 to 1.219	Slot Mounting (2-slots) Provided permits MTG. 28.58 to 30.96
C	.120	3.05
D	1.172 ±.016	29.77 ±.41
E	1.422 Max.	36.12 Max.
F	.019	.48
G	.219 ±.031	5.56 ±.79
H	.953 Max.	24.21 Max.
J	Equally Spaced as for 8 on a .550 DIA P.C. Hook Terminals	
K	1.438 Max.	36.53 Max.

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Marking shall be on the side of the case.
4. Primary and secondary electrical values shall be marked as specified in table I, as applicable.

FIGURE 1. Dimensions and configurations.



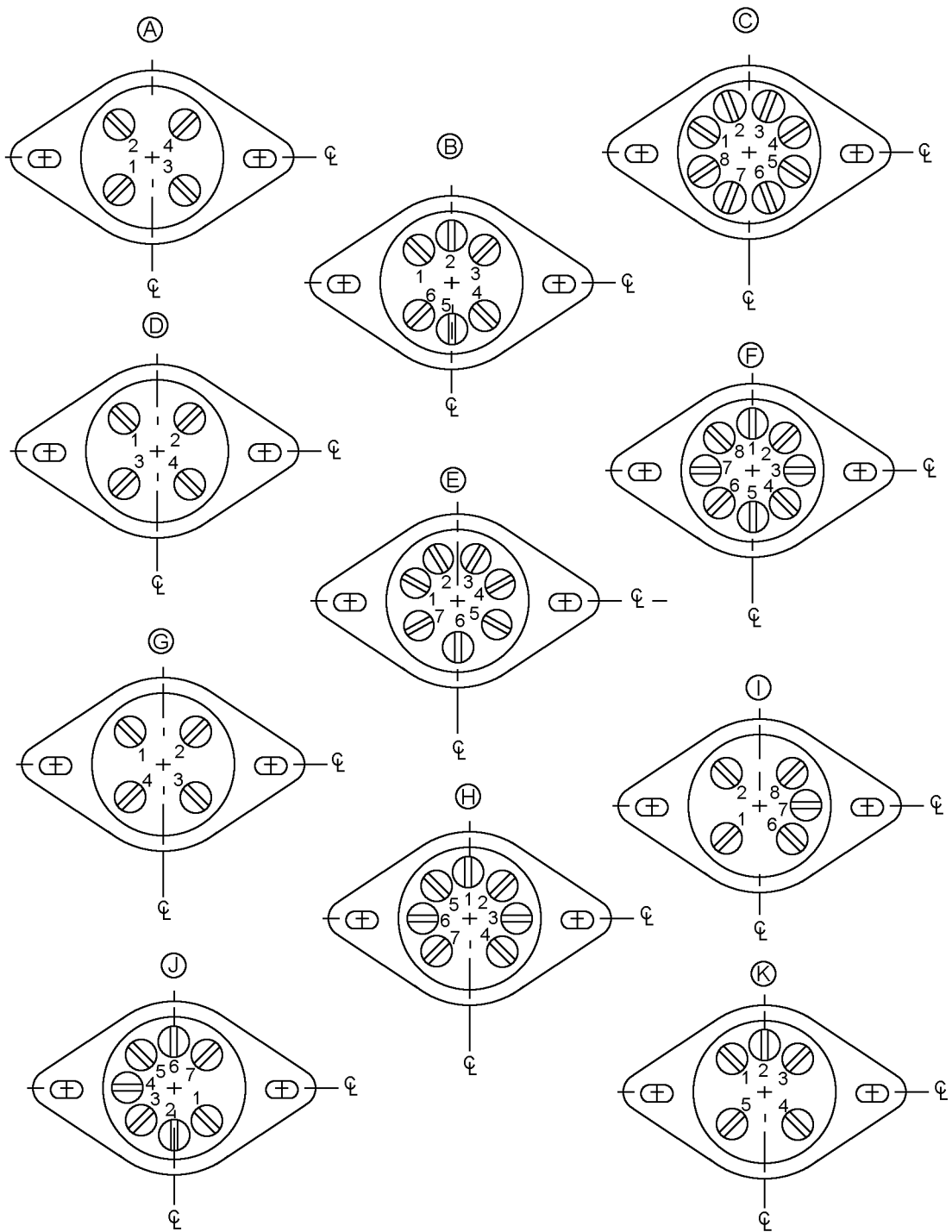


FIGURE 2. Terminal arrangement.

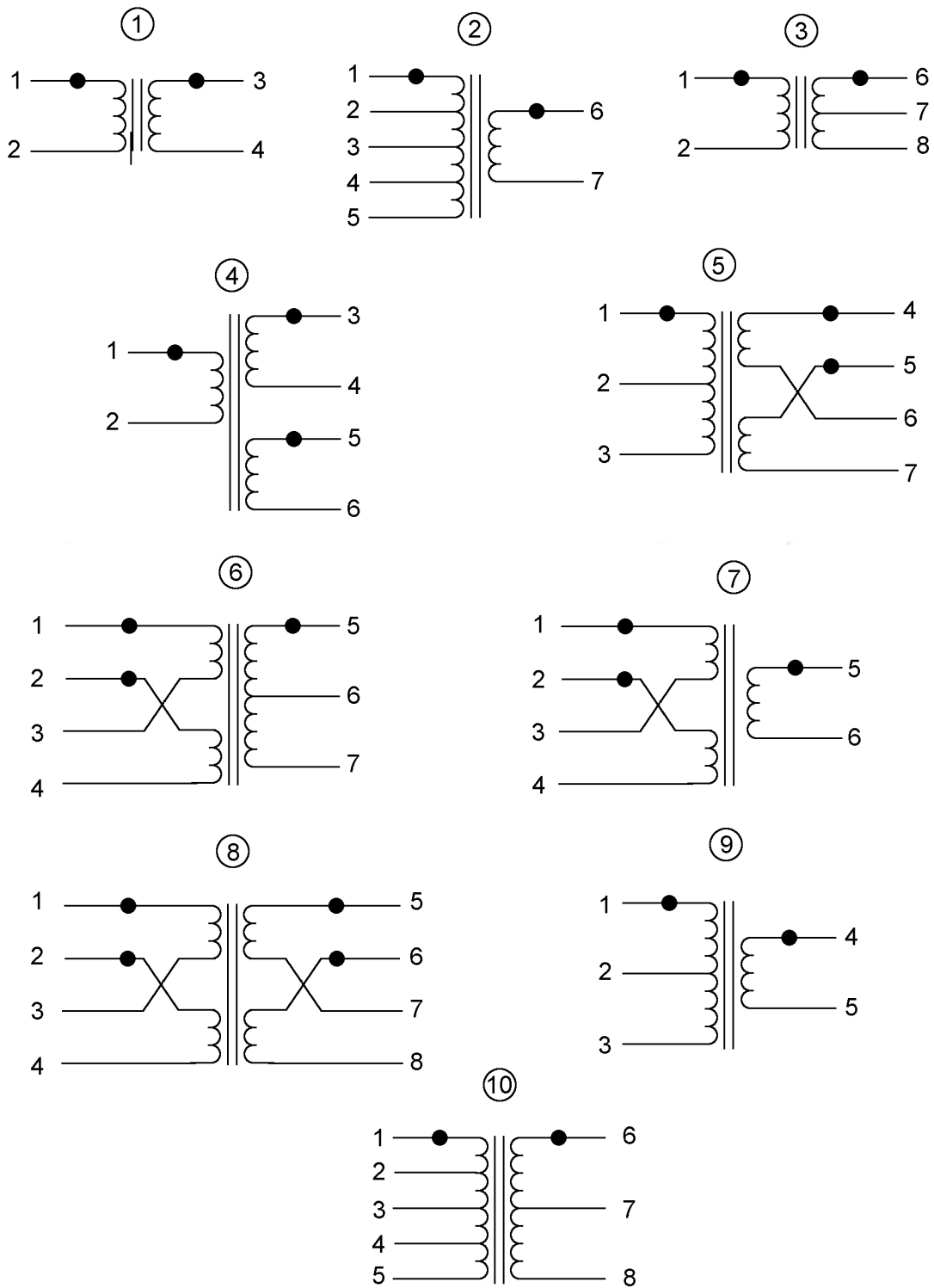


FIGURE 3. Circuit diagram.

TABLE I. Electrical ratings. 4/

Dash No.	Primary 1/ Impedance (ohms)	Secondary 1/ Impedance (ohms)	Primary DCR ±25% (ohms)	Secondary DCR ±25% (ohms)	Power Level (mW)	Primary dc current (mA)	Working voltage (volts)	Dielectric withstanding voltage 2/		Terminal arrangement (see figure 2)	Circuit diagram (see figure 3)
								Sea level	Reduced Barometric pressure		
01	82	135 k	14	6700	63	50	250	750	300	G	1
02	50, 200 CT 500 CT	50 k	54	3827	3	0	175	500	300	H	2
03	50, 200 CT 500 CT	50 k CT	54	3827	3	0	175	500	300	F	10
04	500/125 SPLIT	150/37.5 SPLIT	35	16	250 3/	20	175	500	300	F	8
05	500/125 SPLIT	500/125 SPLIT	37	67	250 3/	20	175	500	300	F	8
06	600/150 SPLIT	600 CT	39	29	6.3	0	175	500	300	J	6
07	600/150 SPLIT	2k/500 SPLIT	70	280	31	0	175	500	300	F	8
08	600/150 SPLIT	1 M	16.5	5100	10	0	175	500	300	B	7
09	1500 CT	500/125 SPLIT	100	35	100	8	175	500	300	J	5
10	2000 CT 4000 CT	8 16	200	0.9	100	4	175	500	300	K	9
11	10 k CT	500/125 SPLIT	750	52	100	4	175	500	300	E	5
12	10k/2.5k SPLIT	2k/500 SPLIT	780	195	100	4	175	500	300	C	8
13	10k/2.5k SPLIT	4k/1k SPLIT	800	350	100	4	175	500	300	C	1

TABLE I. Electrical ratings - Continued. 4/

Dash No.	Primary <u>1/</u> Impedance (ohms)	Secondary <u>1/</u> Impedance (ohms)	Primary DCR $\pm 25\%$ (ohms)	Secondary DCR $\pm 25\%$ (ohms)	Power Level (mW)	Primary dc current (mA)	Working voltage (volts)	Dielectric withstanding voltage <u>2/</u>		Terminal arrangement (see figure 2)	Circuit diagram (see figure 3)
								Sea level	Reduced Barometric pressure		
14	10 k	1 M	330	4875	10	0	175	500	300	A	1
15	15 k	60 k	690	3100	4	0	175	500	300	A	1
16	15 k	60 k	690	3100	25		175	500	300	D	1
17	15 k	95 k CT	673	3800	2	0	175	500	300	I	3
18	15 k	95 k SPLIT	1260	5800	12	4	175	500	300	B	4
19	20 k CT	600/150 SPLIT	930	45	125	4	175	500	300	J	5

1/ Impedance values written one above the other indicate a range of matching impedances over which the parts will give satisfactory performance as long as the impedance ratio is maintained.

2/ Dielectric withstanding voltage between split sections, 50 volts rms maximum.

3/ 250 mW at 100 Hz, 1 watt at 200 Hz.

4/ Qualification testing and approval to M27/166-01 shall be sufficient to grant qualification approval to M27/166-02 through M27/166-19, inclusive.

REQUIREMENTS: (When numbers in parentheses, i.e., (1-2) are used, they indicate the winding and the extreme terminals of the winding.)

Electrical ratings: See table I.

Working voltage: See table I.

Frequency range: See table II.

Design and construction:

Dimensions and configurations: See figure 1.

Duty cycle: Continuous.

Case: Steel drawn, hermetically sealed.

Terminals: Hooked pin with compressed glass bead header.

Weight: 2.0 ounces maximum.

Altitude: 50,000 feet maximum.

Operating temperature range: -55°C to +105°C.

Terminal strength: [MIL-STD-202-211](#), test condition A, 5 pounds.

Vibration (high frequency): [MIL-STD-202-204](#), test condition D.

Dielectric withstanding voltage: See table I.

Electrical characteristics: See table II.

Frequency response: See table II.

Reference frequency: 1 kHz.

Insertion loss: 3 dB at 1 kHz maximum.

Marking location: See figure 1.

Part or Identifying Number (PIN): M27/166-(dash number from table I).

TABLE II. Electrical characteristics.

Dash no.	No load (center-tap Voltage unbalanced only)		Frequency response			Resonance second resonant frequency (min) (kHz)	Polarity same on terminals (see figure 3)
	Potential at 1 kHz (volts)	Unbalanced ±%	Frequency range (Hz)	± (dB)	E _L (volts)		
01	---	---	250 – 8,000	2	92	8	1, 3
02	1.0	1.0	50 – 10,000	2	12.2	10	1, 6
03	1.0	1.0	50 – 10,000	2	12.2	10	1, 6
04	1.0	1.0	100 – 20,000	2	6.1	20	1, 2, 5, 6
05	1.0	1.0	100 – 20,000	2	11.2	20	1, 2, 5, 6
06	1.0	1.0	50 – 10,000	2	1.9	10	1, 2, 5
07	1.0	1.0	50 – 20,000	2	7.9	20	1, 2, 5, 6
08	1.0	1.0	200 – 3,000	4	100	3	1, 2, 5
09	1.0	1.0	100 – 10,000	2	7.1	10	1, 4, 5
10	1.0	1.0	100 – 10,000	2	0.9	10	1, 4
11	1.0	1.0	100 – 10,000	2	7.1	10	1, 4, 5
12	1.0	1.0	100 – 10,000	2	14	10	1, 2, 5, 6
13	1.0	1.0	100 – 10,000	2	20	10	1, 2, 5, 6
14	---	---	200 – 3,000	4	100	3	1, 3
15	---	---	50 – 10,000	2	15.5	10	1, 3
16	---	---	200 – 10,000	2	39	10	1, 3
17	1.0	1.0	50 – 10,000	2	17	10	1, 6
18	1.0	1.0	200 – 10,000	2	34	10	1, 3, 5
19	1.0	1.0	200 – 10,000	2	8.7	10	1, 4, 5

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents. In addition to [MIL-PRF-27](#), this document references the following:

MIL-STD-202-204 MIL-STD-202-211

Custodians:
Army – CR
Navy – EC
Air Force – 85
DLA – CC

Preparing activity:
DLA – CC

(Project 5950-2024-017)

Review activities:
Army – AR, CR4
Navy – AS, MC, OS, SH
Air Force – 19

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of this information above using the ASSIST Online database at <https://assist.dla.mil>.