

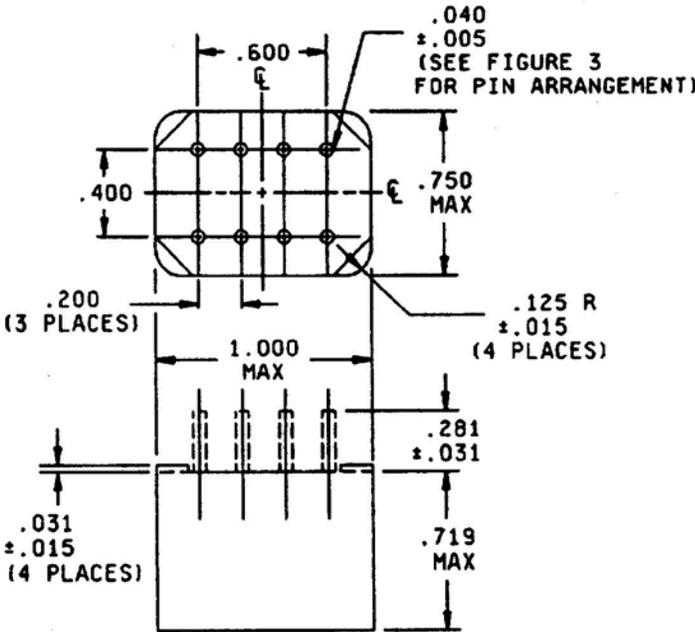
MIL-PRF-27/165E
 1 October 2010
 SUPERSEDING
 MIL-PRF-27/165D
 14 February 1995

PERFORMANCE SPECIFICATION SHEET

TRANSFORMER 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.



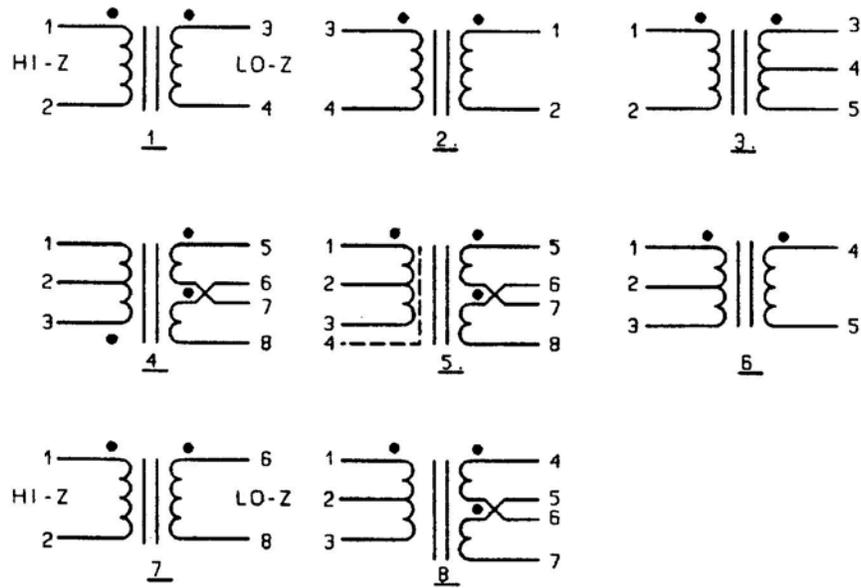
CIRCUIT DIAGRAM AND MARKING
 (SEE FIGURE 2 AND TABLE I)

Inches	mm
.005	0.13
.015	0.38
.031	0.79
.040	1.02
.125	3.18
.200	5.08
.281	7.14
.400	10.16
.600	15.24
.719	18.26
.750	19.05
1.000	25.40

NOTES:

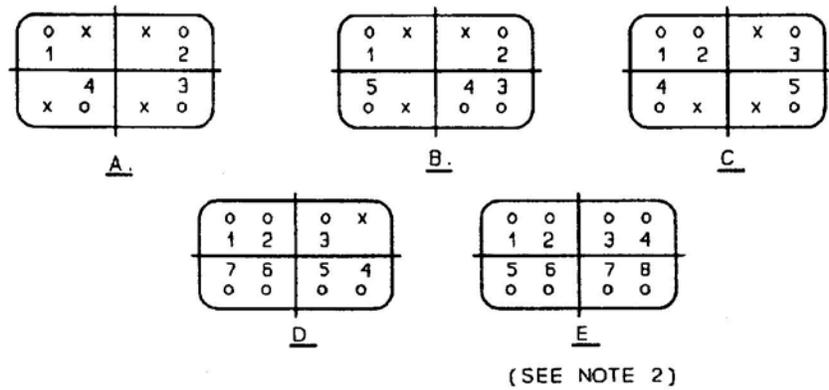
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Marking shall be on the side(s) and top of case, or both.
4. Unless otherwise specified, the tolerance shall be ±.010 (0.25 mm).

FIGURE 1. Dimensions and configurations.



NOTE: Dots indicate the same polarity on terminals.

FIGURE 2. Circuit diagram.



NOTES

1. Pins not used are removed. These are indicated by "X".
2. Pin numbers not shown in the circuit diagram (see figure 2) indicates that those pins will be missing.

FIGURE 3. Pin arrangement.

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: 175 volts.

Frequency range: See table II.

Duty cycle: Continuous.

Design and construction:

Dimensions and configurations: See figure 1.

Case: Plastic/molded.

Terminals: Pin type, .040 inch diameter (1.02 mm) (see figure 3 for pin arrangement)

Material: Type LW ()C5N in accordance with MIL-STD-1276.

Weight: 1.0 ounce maximum.

Altitude: 75,000 feet maximum.

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

Terminal strength: MIL-STD-202, method 211, test condition A, 2.0 pounds.

Vibration (high frequency): MIL-STD-202, method 204.

Dielectric withstanding voltage: Between split sections, 50 volts rms maximum.

At sea level: 500 V rms.

At reduced barometric pressure: 300 V rms.

Electrical characteristics:

Frequency response: See table II

Reference frequency: 1kHz

No load (center tap voltage unbalance only) ± 1 percent at 1 volt, 1 kHz across the primary.

Marking location: See figure 1.

Electrostatic shielding: Shielding ratio 5.1 minimum at 20 kHz applicable to circuit diagram 5 only.

Part or Identifying Number (PIN): M27/165-(dash number from table I).

NOTE: Where dual ratings are specified, only frequency response shall be tested in both modes of operation.

TABLE I Electrical ratings.

Dash 1/ no.	Primary 2/ impedance (ohms)	Secondary 2/ impedance (ohms)	Primary DCR $\pm 25\%$ (ohms)	Secondary DCR $\pm 25\%$ (ohms)	Power Level (mW)	Primary dc current (mA)	Pin arrangement (see figure 3)	Circuit diagram (see figure 2)
01	(1-3) 80 CT 100 CT	32 SPLIT 40 SPLIT	4.9	3.2	250	16	D	8
	(4-7) 32 SPLIT 40 SPLIT	80 CT 100 CT	3.2	4.9	250	25	D	8
02	(6-8) 200	250 k	16	2500	10	0	E	7
	(1-4) 250 k	200	2500	16	10	0	E	7
03	(1-3) 400 CT 500 CT	40 SPLIT 50 SPLIT	20	4.5	250	8	E	4
	(5-8) 40 SPLIT 50 SPLIT	400 CT 500 CT	4.5	20	250	25	E	4
04	(1-3) 400 CT 500 CT	120 SPLIT 150 SPLIT	20	12.5	250	8	E	4
	(5-8) 120 SPLIT 150 SPLIT	400 CT 500 CT	12.5	20	250	14	E	4
05	(1-3) 400 CT 500 CT	400 SPLIT 500 SPLIT	20	45	250	8	E	4
	(5-8) 400 SPLIT 500 SPLIT	400 CT 500 CT	45	20	250	8	E	4
06	(1-3) 500 CT	3.2	15	0.35	250	0	C	6
	(4-5) 3.2	500 CT	0.35	15	250	0	C	6
07	(1-3) 600 CT	600 SPLIT	35	60	250	6	D	8
	(4-7) 600 SPLIT	600 CT	60	35	250	6	D	8

See footnote at end of table.

TABLE I Electrical ratings - Continued.

Dash <u>1</u> / no.	Primary <u>2</u> / impedance (ohms)	Secondary <u>2</u> / impedance (ohms)	Primary DCR $\pm 25\%$ (ohms)	Secondary DCR $\pm 25\%$ (ohms)	Power Level (mW)	Primary dc current (mA)	Pin arrangement (see figure 3)	Circuit diagram (see figure 2)
08 <u>3</u> / 	(5-8) 600 SPLIT	10 k CT	80	1050	200	9	E	5
	(1-3) 10 k CT	600 SPLIT	1050	80	200	4	E	5
09 	(1-3) 2 k CT 4 k CT	8 16	290	2	250	4 2	C	6
	(4-5) 8 16	2 k CT 4 k CT	2	290	250	60	C	6
10 	(1-4) 2.5 k CT	2.5 k SPLIT	140	300	250	4	E	4
	(5-8) 2.5 k SPLIT	2.5 k CT	300	140	250	4	E	4
11 	(1-2) 10 k 25 k	200 500	1225	30	200	3 1.5	A	1
	(3-4) 200 500	10 k 25 k	30	1225	200	21 10	A	1
12 	(1-2) 10 k	2 k CT	1000	40	200	1	B	3
	(3-5) 2 k CT	10 k	40	1000	200	2.2	B	3
13 <u>3</u> / 	(1-3) 10 k CT 12 k CT	10 k SPLIT 12 k SPLIT	855	1080	200	1	E	5
	(5-8) 10 k SPLIT 12 k SPLIT	10 k CT 12 k CT	1080	855	200	1	E	5
14 	(3-4) 10 k	90 k	215	1850	100	0.25	A	2
	(1-2) 90 k	10 k	1850	215	100	0	A	2

See footnote at end of table.

TABLE I Electrical ratings - Continued.

Dash <u>1</u> / no.	Primary <u>2</u> / impedance (ohms)	Secondary <u>2</u> / impedance (ohms)	Primary DCR $\pm 25\%$ (ohms)	Secondary DCR $\pm 25\%$ (ohms)	Power Level (mW)	Primary dc current (mA)	Pin arrangement (see figure 3)	Circuit diagram (see figure 2)
15	(1-2) 20 k 30 k	800 1200	450	32	200	0.5	A	1
	(3-4) 800 1200	20 k 30 k	32	450	200	2.5	A	1
16	(1-4) 30 k	50	1850	3.8	200	1	E	7
	(6-8) 50	30 k	3.8	1850	200	24	E	7
17	(1-3) 50 k CT	600 SPLIT	2400	63	250	1	D	8
	(4-7) 600 SPLIT	50 k CT	63	2400	250	9	D	8
18	(1-4) 100 k	60	3400	3.7	200	0.5	E	7
	(6-8) 60	100 k	3.7	3400	200	20	E	7

- 1/ Dual rating for each dash number indicates that the transformer's winding can be used arbitrarily as primary or secondary.
- 2/ Impedance values written one above the other indicates a range of matching impedances over which the parts will give satisfactory performance as long as the impedance ratio is maintained.
- 3/ Electrostatic shield, shield ratio 5:1 minimum at 10 kHz.

TABLE II Electrical characteristics.

1/ Dash number	Frequency response at 200 Hz to 20 kHz ± 3 dB			Polarity same on terminals (see figure 2)
	Z _S (ohms)	Z _L (ohms)	E _L (ohms)	
01	(1-3) 80	32	2.8	1, 4, 5
	(4-7) 32	80	4.4	1, 4, 5
02	(6-8) 200	250 k	50	1, 6
	(1-4) 250 k	200	1.4	1, 6
03	(1-3) 400	40	3.16	3, 5, 6
	(5-18) 40	400	10	3, 5, 6
04	(1-3) 400	120	5.5	3, 5, 6
	(5-8) 120	400	10	3, 5, 6
05	(1-3) 400	400	10	3, 5, 6
	(5-8) 400	400	10	3, 5, 6
06	(1-3) 500	3.2	0.9	1, 4
	(4-5) 3.2	500	11	1, 4
07	(1-3) 600	600	12.2	1, 4, 5
	(4-7) 600	600	12	1, 4, 5
08	(5-8) 600	10 k	45	1, 5, 6
	(1-3) 100 k	600	12	1, 5, 6
09	(1-3) 2 k	8	1.4	1, 4
	(4-5) 8	2 k	22	1, 4
10	(1-4) 2.5 k	2.5 k	25	3, 5, 6
	(5-8) 2.5 k	2.5 k	25	3, 5, 6
11	(1-2) 10 k	200	6.3	1, 3
	(3-4) 200	10 k	40	1, 3
12	(1-2) 10 k	2 k	20	1, 3
	(3-5) 2 k	10 k	40	1, 3
13	(1-3) 10 k	10 k	45	1, 5, 6
	(5-8) 10 k	10 k	45	1, 5, 6
14	(3-4) 10 k	90 k	95	1, 3
	(1-2) 90 k	10 k	30	1, 3
15	(1-2) 20 k	800	12.6	1, 3
	(3-4) 800	20 k	60	1, 3
16	(1-4) 30 k	50	3.16	1, 6
	(6-8) 50	30 k	77	1, 6
17	(1-3) 50 k	600	12.2	1, 4, 5
	(4-7) 600	50 k	110	1, 4, 5
18	(1-4) 100 k	60	3.4	1, 6
	(6-8) 60	100 k	170	1, 6

1/ Qualification testing and approval to M27/165-12 shall be sufficient to grant qualification approval to M27/165-01 through M27/165-18.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. 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 and relationship to the last previous issue.

Referenced documents. In addition to MIL-PRF-27, this document references the following:

MIL-STD-202
MIL-STD-1276

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

Preparing activity:
DLA – CC

(Project 5950-2009-069)

Review activities:
Army – AR, CR4, MI
Navy – AS, MC, OS, SH
Air Force – 19, 99

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.daps.dla.mil>.