NOTE: The document identifier and heading have been changed on this page to reflect that this is a performance specification. There are no other changes to this document. The document identifier on subsequent pages has not been changed, but will be changed the next time this document is revised.

INCH-POUND

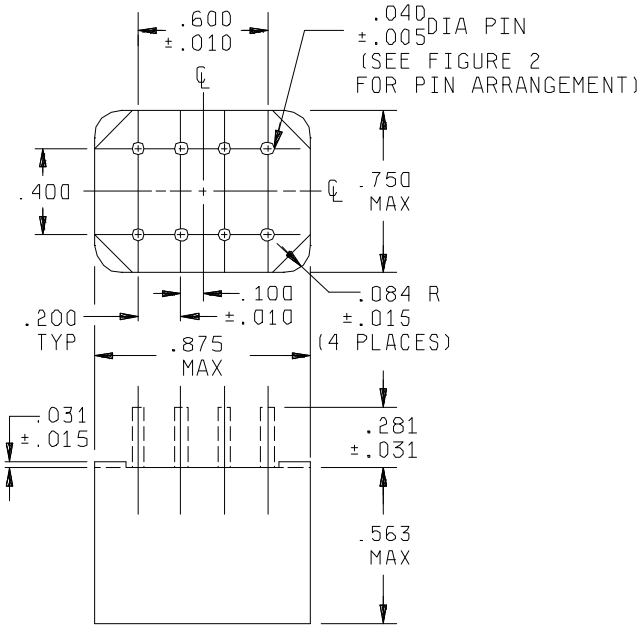
MIL-PRF-27/167D
7 April 1992
SUPERSEDING
MIL-T-27/167C
15 April 1987

PERFORMANCE SPECIFICATION SHEET

TRANSFORMER, AUDIO FREQUENCY, TF5R21ZZ

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

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-T-27.

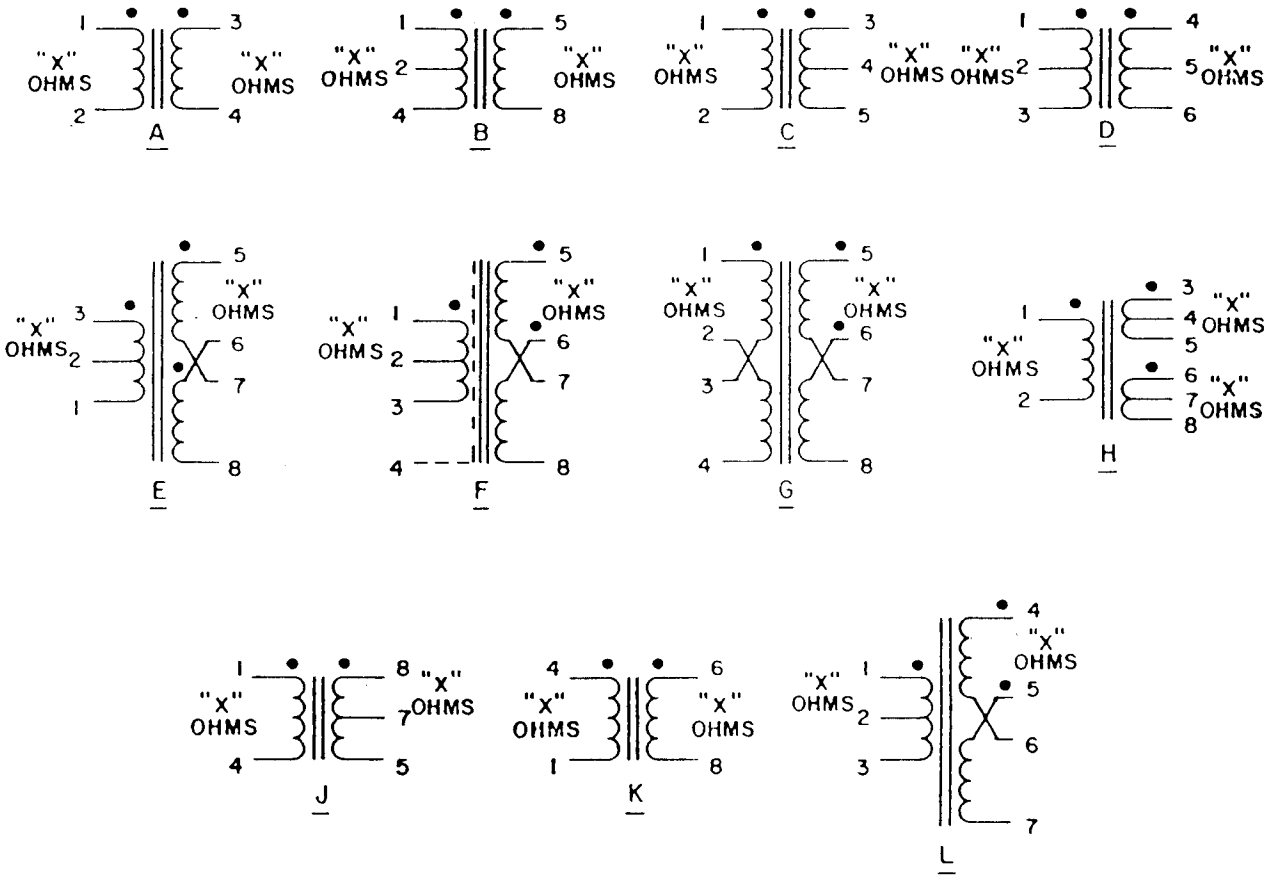


Inches	mm
.005	0.13
.010	0.25
.015	0.38
.031	0.79
.040	1.02
.084	2.13
.100	2.54
.200	5.08
.281	7.14
.400	10.16
.563	14.30
.600	15.24
.750	19.05
.875	22.22

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.

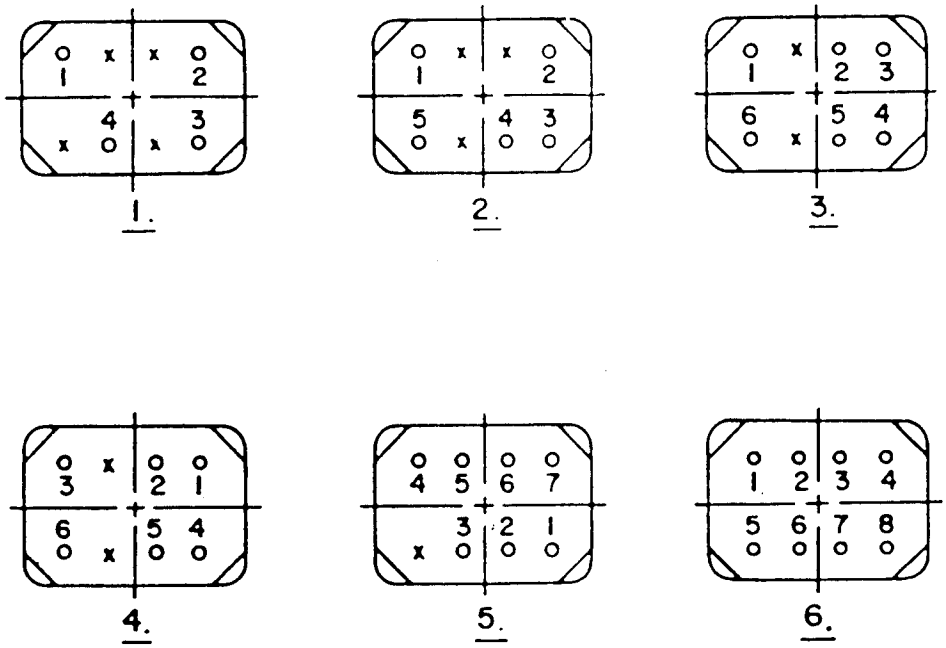
(D) denotes changes



WORKING VOLTAGE (PEAK): 175V
ALTITUDE: 75,000 FT MAX
(SEE TABLE I FOR VALUE OF "X")

CIRCUIT DIAGRAM AND MARKING

FIGURE 1. Dimensions and configurations - Continued.



NOTE: Pins not used are removed. These are indicated by "X".

FIGURE 2. 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 (peak): 175 volts peak.

Frequency range: 300 hertz to 20 kilohertz.

Design and construction:

Dimensions and configurations: See figure 1.

Duty cycle: Continuous.

Case: Plastic.

Terminals: Pin type, .040 ±.005 inch diameter.

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

Weight: 20 grams 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, test condition D.

Dielectric withstanding voltage:

At sea level: 500 V rms.

At reduced barometric pressure: 300 V rms.

Electrical characteristics: See table II.

Frequency response: See table II.

Reference frequency: 1 kilohertz.

Insertion loss: At the rated power level at 1 kilohertz, the insertion loss shall be as specified in table II.

No load (centertap voltage unbalance only): With 1 volt, 5 kilohertz across the primary the voltage unbalance shall be ±1 percent.

Marking location: See figure 1.

Part or Identifying Number (PIN): M27/167-(dash number from table I).

TABLE I. Electrical ratings.

Dash no.	1/ 2/ Primary impedance (ohms)	1/ 2/ Secondary impedance (ohms)	Primary DCR ±25% (ohms)	Secondary DCR ±25% (ohms)	Max power level (mW)	Primary dc current (mA)	Pin arrangement (see fig. 2)	Circuit diagram (see fig. 1
01	10 k 25 k	200 500	2,500	34	100	3 1.5	1	A
02	50 k 200	62.5 k 250 k	13.5	3,600	5	0	6	K
03	100 Split	100 Split	5.9	6.9	100	10	6	G
04	500 Split 600 Split	12.8 Split 16 Split	36.2	1.5	100	8	6	G
05	500 600	50 60	50	5	100	3.5	6	K
06	500 Split 600 Split	50 Split 60 Split	36	6.5	100	3.5	6	G
07	500 CT	600 CT	26	70	100	10	6	D
08	500 Split	600 Split	30	42	100	10	6	G
(D) 09 3/	600 CT	600 Split	42	29	100	10	6	F
10	600 Split	2 k Split	40	113	100	5	6	G
11	600	600 CT and 600 CT	50	50 and 50	25	5	6	H
12 3/	600 Split	8 k CT	55	484	50	3.2	6	F

See footnotes at end of table.

TABLE I. Electrical ratings - Continued.

Dash no.	1/ 2/ Primary impedance (ohms)	1/ 2/ Secondary impedance (ohms)	Primary DCR ±25% (ohms)	Secondary DCR ±25% (ohms)	Max power level (mW)	Primary dc current (mA)	Pin arrangement (see fig. 2)	Circuit diagram (see fig. 1
13	800 Split 1,200 Split	20 k Split 30 k Split	110	800	50	3	6	G
14	1,000 1,200	50 60	5	90	100	6	6	K
15	1,000 Split 1,200 Split	200 Split 240 Split	102	19	100	3	6	G
16	1,200 1,500	3.2 4.0	70	0.45	100	7	6	K
17	1.5 k CT	600 CT	70	65	100	2.5	3	D
(D) 18	4 k CT	600 Split	155	47	100	2.6	5	L
19	4 k Split 5 k Split	12.8 Split 16 Split	327	1.5	100	2	6	G
20	10 k	3.2	800	0.65	100	2	6	K
21	8 k Split 10 k Split	12.8 Split 16 Split	600	1.5	100	2	6	G
22	10 k	16	800	2.7	100	4	6	K
23	10 k CT 12 k CT	3.2 4.0	770	0.73	100	3 1.5	6	B
24	10 k Split 25 k Split	200 Split 500 Split	2,500	34	100	2 1	6	G
25	10 k CT 25 k CT	200 CT 500 CT	560	22	100	2	3	D

See footnotes at end of table.

TABLE I. Electrical ratings - Continued.

Dash no.	1/ 2/ Primary impedance (ohms)	1/ 2/ Secondary impedance (ohms)	Primary DCR ±25% (ohms)	Secondary DCR ±25% (ohms)	Max power level (mW)	Primary dc current (mA)	Pin arrangement (see fig. 2)	Circuit diagram (see fig. 1
26	10 k 12 k	500 CT 600 CT	800	95	100	4	6	J
27	10 k Split 12 k Split	500 Split 600 Split	800	95	100	4	6	G
28	10 k CT	2 k CT	1,200	45	100	1	2	C
29	10 k CT 12 k CT	1,500 CT 1,800 CT	800	300	100	4	4	D
30	10 k CT 12 k CT	10 k CT 12 k CT	560	650	100	1	5	L
31	10 k Split 12 k Split	10 k Split 12 k Split	560	650	100	1	6	G
32	10 k	90 k	710	3,150	32	0.25	6	K
33	20 k 30 k	800 1,200	800	110	100	0.5	6	K
34	20 k CT 30 k CT	800 CT 1,200 CT	800	110	100	1	3	D
35	30 k	50	2,875	4.6	100	1	6	K
36	40 k CT 50 k CT	400 Split 500 Split	1,900	43	100	0.5	6	E
37	40 k Split 50 k Split	400 Split 500 Split	1,900	43	100	0.5	6	G
38	100 k	60	3,500	3.3	100	0.5	6	K
39 3/	100 k CT 200 k CT	100 Split 200 Split	3,290	4.1	5	0	6	F

See footnotes at end of table.

TABLE I. Electrical ratings - Continued.

Dash no.	1/ 2/ Primary impedance (ohms)	1/ 2/ Secondary impedance (ohms)	Primary DCR ±25% (ohms)	Secondary DCR ±25% (ohms)	Max power level (mW)	Primary dc current (mA)	Pin arrangement (see fig. 2)	Circuit diagram (see fig. 1
40	200 K	1 k	4,000	190	5	0	6	K
41	200 K CT	1 k CT	4,000	200	5	0	3	D
42 3/	200 k CT	1 k Split	4,000	200	5	0	6	F

1/ 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.
2/ Where windings are listed as split, one-fourth of the listed impedance is available by paralleling the winding.
3/ Electrostatic shield, shield ratio 5:1 minimum at 20 kHz.

TABLE II. Electrical characteristics.

Dash no.	Frequency response at 300 Hz to 20 kHz ±3 dB			Resonance, second resonant frequency (min)	Insertion loss at 1 kHz (max)	Polarity same on terminals
	Z_S (ohms	Z_L (ohms)	E_L (volts)			
01	25 k	500	7.07	20 kHz	3.5	1, 3
02	50	62.5 k	17.7	20 kHz	4.0	4, 6
03	100	100	3.16	50 kHz	3.5	1, 5, 6
04	600	16	1.26	50 kHz	3.5	1, 5, 6
05	600	60	2.45	50 kHz	3.5	4, 6
06	600	60	2.45	50 kHz	3.5	1, 5, 6
07	500	600	7.75	50 kHz	3.0	1, 4

TABLE II. Electrical characteristics - Continued.

Dash no.	Frequency response at 300 Hz to 20 kHz ±3 dB			Resonance, second resonant frequency (min)	Insertion loss at 1 kHz (max)	Polarity same on terminals
	Z_S (ohms)	Z_L (ohms)	E_L (volts)			
08	500	600	7.75	50 kHz	3.5	1, 5, 6
09	600	600	7.75	50 kHz	3.5	1, 5, 6
10	600	2,000	14.1	50 kHz	3.5	1, 5, 6
11	600 (1-2)	1.2 k (3-5) 1.2 k (6-8)	3.87 3.87	50 kHz	3.5	1, 3, 6
12	600	8,000	20	20 kHz	3.5	1, 5, 6
13	1,200	30 k	38.7	20 kHz	3.5	1, 5, 6
14	1,200	60	2.45	20 kHz	3.5	4, 6
15	1,200	30 k	38.7	20 kHz	3.5	1, 5, 6
16	1,200	4.0	0.63	20 kHz	4.0	4, 6
17	1,500	600	7.75	20 kHz	3.5	1, 4
18	1,500	600	7.75	20 kHz	3.5	1, 4, 5
19	5 k	16	1.26	20 kHz	3.5	1, 5, 6
20	10 k	3.2	0.56	20 kHz	4.0	4, 6
21	10 k	16	1.26	20 kHz	3.5	1, 5, 6
22	10 k	16	1.26	20 kHz	4.0	4, 6
23	12 k	4	0.63	20 kHz	5.0	1, 5
24	25 k	500	7.07	20 kHz	3.5	1, 5, 6
25	25 k	500	7.07	20 kHz	3.0	1, 4
26	12 k	600	7.75	20 kHz	3.5	1, 8

TABLE II. Electrical characteristics - Continued.

Dash no.	Frequency response at 300 Hz to 20 kHz ±3 dB			Resonance, second resonant frequency (min)	Insertion loss at 1 kHz (max)	Polarity same on terminals
	Z_S (ohms)	Z_L (ohms)	E_L (volts)			
27	12 k	600	7.75	20 kHz	3.5	1, 5, 6
28	10 k	2 k	14.1	20 kHz	3.5	1, 3
29	12 k	1.8 k	13.4	20 kHz	3.5	1, 4
30	12 k	12 k	34.6	20 kHz	3.5	1, 4, 5
31	12 k	12 k	34.6	20 kHz	3.5	1, 5, 6
32	10 k	90 k	52	20 kHz	3.5	4, 6
33	30 k	1.2 k	11	20 kHz	3.5	4, 6
34	30 k	1.2 k	11	20 kHz	3.5	1, 4
35	30 k	50	2.23	20 kHz	3.5	4, 6
36	50 k	500	7.07	20 kHz	3.5	3, 5, 6
37	50 k	500	7.07	20 kHz	3.5	1, 5, 6
38	100 k	60	2.45	20 kHz	3.5	4, 6
39	200 k	200	1.0	20 kHz	3.0	1, 5, 6
40	200 k	1 k	2.23	20 kHz	3.5	4, 6
41	200 k	1 k	2.23	20 kHz	3.5	1, 4
42	200 k	1 k	2.23	20 kHz	3.5	1, 5, 6

CONCLUDING MATERIAL

Custodians:
Army - ER
Navy - EC
Air Force - 85

Review activities:
Army - MI
Navy - OS
Air Force - 17, 99

User activities:
Army - AR, ME
Navy - AS, MC,
Air Force - 19

Preparing activity:
Army - ER

Agent:
DLA - ES

(Project 5950-0789)