

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-27/323B  
8 April 1992  
SUPERSEDING  
MIL-T-27/323A  
7 March 1986

PERFORMANCE SPECIFICATION SHEET

TRANSFORMER, AUDIO FREQUENCY, TELEPHONE INTERCONNECT,  
TF5R21ZZ

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

The requirements for acquiring the transformer described herein shall consist of this specification 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.

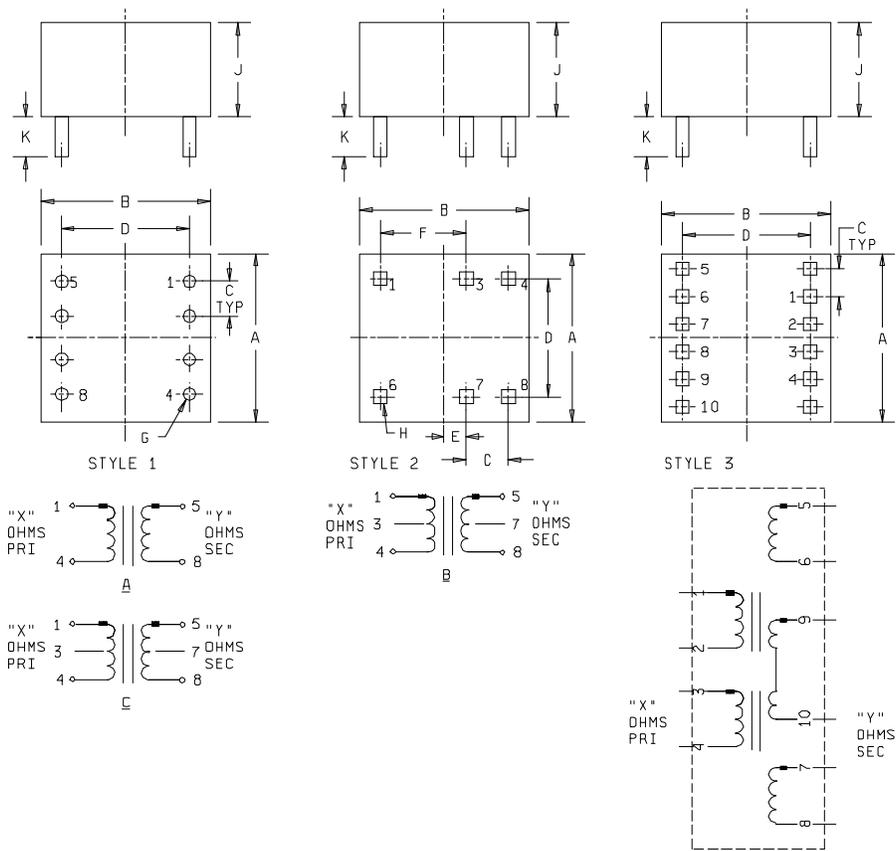


FIGURE 1. Dimensions and configurations.

(B) denotes changes

(B) (B) (B)

Dash no.	A max.	B max.	J max.	C ±.010	D ±.010	E ±.010	F ±.010	G, Dia. ±.005	H, Sq. ±.005	K, Pin Ht. ±.030	Weight oz. Max.	Style
01	.875	1.093	.719	.20	.50	.15	---	.025	----	.125	1.2	1
02	1.562	1.875	.750	.25	1.00	.375	.75	----	.025	.156	3.7	2
03	1.562	1.875	1.156	.40	1.00	.20	.80	----	.025	.343	9.0	2
04	1.562	1.875	1.156	.40	1.00	.20	.80	----	.025	.343	9.0	2
05	1.625	2.812	1.156	.20	2.30	---	---	----	.025	.125	12.5	3

Inches	mm	Inches	mm
.025	0.64	.75	19.1
.12	3.2	.80	20.3
.15	3.8	.875	22.23
.156	3.96	1.00	25.4
.20	5.1	1.093	27.76
.25	6.4	1.156	29.36
.343	8.71	1.562	39.67
.375	9.53	1.625	41.28
.40	10.2	1.875	47.63
.50	12.7	2.812	71.42
.719	18.26		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Marking shall be on the top of the case. Primary and secondary electrical values shall be marked as specified in table I.
4. For dash numbers 03 and 04, mark terminals as follows:

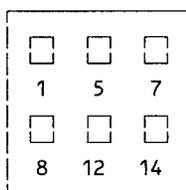


FIGURE 1. Dimensions and configurations - Continued.

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

Electrical ratings:

Power level: See table I.

Working voltage: 535 V maximum, all windings.

Frequency range: 300 Hz to 4,000 Hz.

Design and construction:

Dimensions and configurations: See figure 1.

Duty cycle: Continuous.

Case: Encapsulated.

Material: Epoxy.

Terminals: Printed circuit pins, solderable.

Height: See figure 1.

Weight: See figure 1.

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

Altitude: 10,000 feet, maximum.

Terminal strength: Method 211 of MIL-STD-202, test condition A, 2 pounds.

Dielectric withstanding voltage: Method 301 of MIL-STD-202.

Test voltage: 1,500 V rms.

Electrical characteristics: See table I.

Frequency response: At rated source and load impedances (see table I), with maximum power output (see table I) over the frequency range of 300 Hz to 4,000 Hz, the response shall be within the limits specified in table I. Reference frequency shall be 1 kHz.

Insertion loss: At specified power level (see table I) at 1 kHz, the insertion loss shall not exceed 1.2 dB.

Harmonic distortion: Total harmonic content of the output shall not exceed 0.5 percent at the specified power level (see table I) and primary dc current (see table I).

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TABLE I. Electrical ratings.

Dash no.	Circuit diagram	Primary impedance (ohms)	Primary DCR ±25% (ohms)	Maximum unbalanced dc current (mA)	Secondary impedance (ohms)	Secondary DCR ±25% (ohms)	Maximum output power (mW)	Return loss min. (dB)	Frequency response (dB)
01	A	600	33	0	600	35	5	25	±.50
02	C	600 CT	44	70	600 CT	51	10	10	±.70
03	B	600 CT	32	100	600 CT	21	10	10	±.75
04	B	600 CT	22	120	600 CT	21	10	10	±.75
05	D	600 Split	48(1-2) 43(3-4)	100	600/600	52 (5-6) 52 (7-8) 91 (9-10)	10	11	±.50

Return loss: When measured in accordance with MIL-STD-188 over the frequency range of 300 Hz to 4,000 Hz, the return loss shall be as specified in table I.

Longitudinal balance: When measured in accordance with FCC68.310 over the frequency range of 300 Hz to 4,000 Hz, the longitudinal balance shall be 60 dB minimum.

Transhybrid loss (dash no. 05 only): When tested in accordance with figure 2, the transhybrid loss shall be 60 dB minimum.

No load (center-tap voltage unbalance) (applicable to circuit diagrams B and C): 1 percent maximum at 1 kHz with the specified dc current flowing in the primary with the following primary voltage applied:

Dash no.	Primary voltage (volts)
02	2.4
03	2.4
04	3.0

Polarity: Shall be additive with the following terminals connected:

Dash no.	Polarity additive with the following terminals connected
01	4 and 5
02	4 and 6
03, 04	7 and 8
05	2 and 3, 4 and 5, 6 and 9, 10 and 7

Marking Location: See figure 1.

Part or Identifying Number (PIN) example: M27/323-(dash number from table I and figure 1).

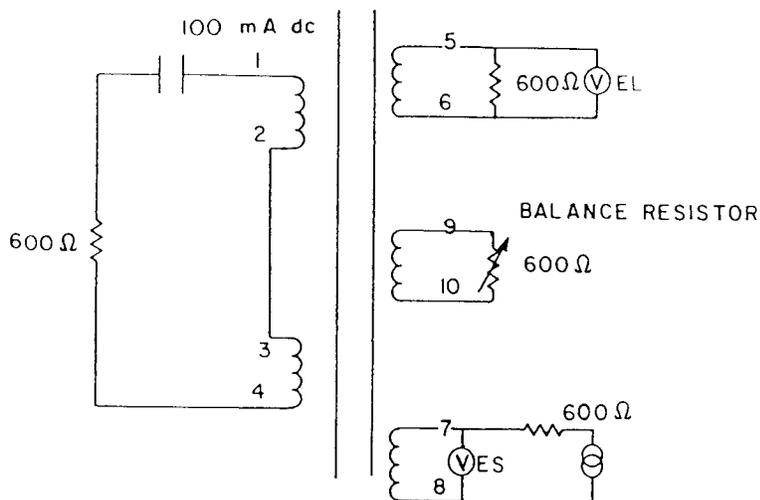
QUALITY ASSURANCE PROVISIONS

Qualification inspection: Transhybrid loss, return loss, and longitudinal balance tests shall be performed as part of the electrical characteristics tests for group II inspections.

Quality conformance inspection: Transhybrid loss, return loss, and longitudinal balance tests shall be performed as part of the electrical characteristics tests for group B, subgroup II inspections.

Extent of qualification:

Qualification testing and approval to M27/323-02 shall be sufficient to grant qualification approval to M27/323-01 through M27/323-05.



Transhybrid loss:

1. Adjust oscillator for ES = 2.4 volts.
2. Read EL.
3. Transhybrid loss =  $20 \log ES/EL$ .

FIGURE 2. Test circuit for transhybrid loss.

CONCLUDING MATERIAL

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

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

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

Preparing activity:  
 Army - ER

Agent:  
 DLA - ES

(Project 5950-0793)