

MIL-PRF-27/323C
25 July 2008
SUPERSEDING
MIL-PRF-27/323B
8 April 1992

PERFORMANCE SPECIFICATION SHEET

TRANSFORMER, AUDIO FREQUENCY, TELEPHONE INTERCONNECT

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

The complete requirements for procuring the transformer described herein shall consist of this document and the latest issue of specification MIL-PRF-27.

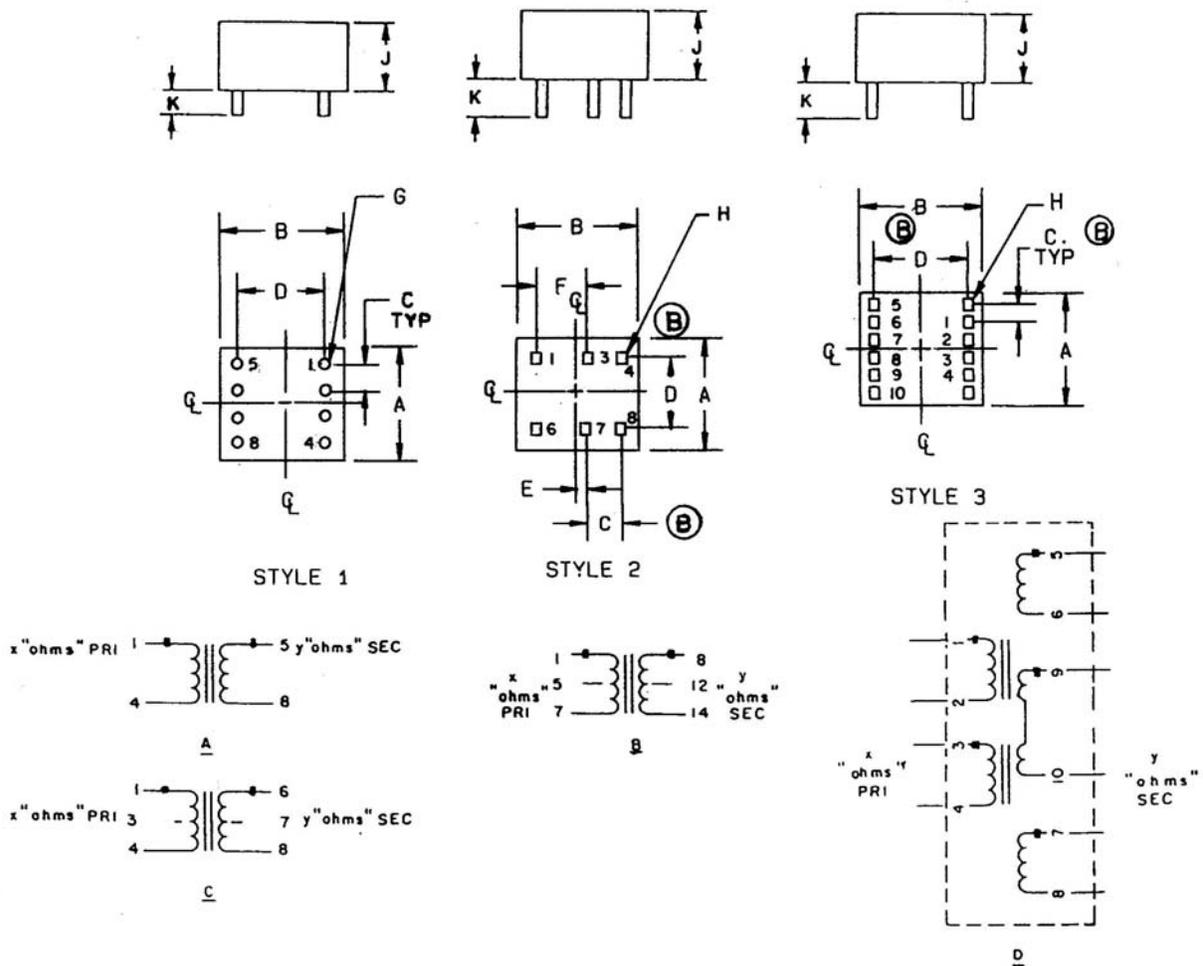


FIGURE 1. Dimensions and configurations.

MIL-PRF-27/323C

| 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. | Weight oz. Max | Style |
|----------|--------|--------|--------|---------|---------|---------|---------|--------------|--------------|------------|----------------|-------|
| 01 | .875 | 1.093 | .719 | .20 | .50 | .13 | ---- | .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 | 1.562 | 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:

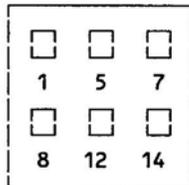


FIGURE 1. Dimensions and configurations - Continued.

MIL-PRF-27/323C

REQUIREMENTS: (When numbers in parentheses, i.e., (1-2) are used, they indicate the winding and the 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 configuration: 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: MIL-STD-202, method 211, test condition A, 2.0 pounds.

Dielectric withstanding voltage: MIL-STD-202, method 301.

Test voltage: 1,500 volts rms.

Electrical characteristics:

Frequency response: At rated source and load impedances (see table I), with maximum power output (see table I) over 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).
across (3-5) shall be as specified in table I.

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-188-200 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 Identification Number (PIN): M27/322-(dash number from table I and figure 1).

VERIFICATION:

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 inspection.

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.

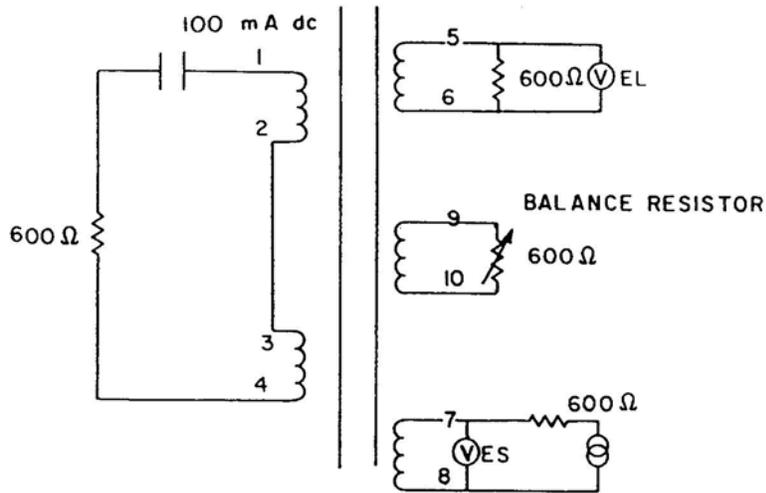


FIGURE 2. Test circuit for transhybrid loss.

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.

MIL-PRF-27
MIL-STD-202
MIL-STD-188-200
FCC68.310

Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5950-2008-046)

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 the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.