# MILITARY SPECIFICATION SHEET

## ELECTRON TUBE, MICROWAVE, NEGATIVE GRID

## TYPE 2C36

The complete requirements for procuring the electron tube described herein shall consist of this document and the latest issue of Specification MIL-E-1.

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

DESCRIPTION: Triode, planar

See figure 1

Mounting position: Any

Weight: 0.4 ounce nominal

ABSOLUTE RATINGS: UHF oscillator, anode pulse modulated

| Parameter: | F1 (A) | Ef | Eb | Ib (A) | eb | Pp | tk | T (seal) | Rk | Du | tp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit: | MHz | V | Vdc | mAdc | v | W | sec | °C | Ohms | --- | µs |
| Maximum: | 1,200 | 6.6 | 350 | 16.0 | 1,500 | 5.0 | --- | 175 | --- | 0.004 | 2.0 |
| Minimum: | --- | 6.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| TEST CONDITIONS: | --- | 6.3 | 180 | 12.0 | --- | --- | 300 | --- | 400 | --- | --- |

GENERAL:

Qualification - Required

Holding period (MIL-STD-1311) t = 168 hours

(A) denotes changes

| METHOD | REQUIREMENT OR TEST | CONDITIONS | AQL (PERCENT DEFECTIVE) | INSPECTION LEVEL OR CODE | SYMBOL | LIMITS MIN | LIMITS MAX | UNIT |
|---|---|---|---|---|---|---|---|---|
| | Quality conformance inspection, part 1 | | | | | | | |
| 1301 | Heater current | | 0.65 | II | If | 380 | 420 | mA |
| 1256 | Electrode current (1) (anode) | | 0.65 | II | Ib | 8.0 | 16.0 | mAdc |
| 1256 | Electrode current (2) (anode) | Ec = -28 Vdc; Rk = 0 | 0.65 | II | Ib | --- | 10.0 | µAdc |
| (A) 1306 | Transconductance | | 0.65 | II | Sm | 3,350 | 5,650 | µmhos |
| 1231 | Emission | (Eb = Ec)/Ik = 30 mAdc; Rk = 0 (see note 2) | 0.65 | II | Etd | --- | 10 | Vdc |
| 1231 | Peak emission | eb = ec = 100 v; tp = 3.0 µs; prr = 500 | 0.65 | II | is | 800 | --- | ma |
| | Quality conformance inspection, part 2 | | | | | | | |
| --- | Power output | F = 1,075 MHz ± 25 MHz; eb = 1,000 v; prr = 2,000; tp = 1.0 µs; cavity in accordance with 171-JAN. | 6.5 | S3 | po | 125 | --- | w |
| 1031 | Vibration | No voltages | 6.5 | S3 | --- | --- | --- | --- |
| 1266 | Total grid current | | 6.5 | S3 | Ic | 0 | -1.0 | µAdc |
| 1211 | Insulation of electrodes | Ef = 6.3 V; Eg to all = 100 Vdc | 6.5 | S3 | R | 25 | --- | Meg |
| (A) 1316 | Amplification factor | | 6.5 | S3 | Mu | 15 | 35 | --- |
| 1331 | Direct-interelectrode capacitance | Test in cavity in accordance with 170-JAN. | 6.5 | S3 | Cgp<br>Cgk<br>Cpk | 1.75<br>1.05<br>0.28 | 2.05<br>1.35<br>0.48 | pF<br>pF<br>pF |
| (A) --- | Torque | Applied between anode and cathode without shock (see note 3) | 6.5 | S3 | --- | 10 | --- | lb-in. |
| (A) --- | Seal | T = 175° C (min); t = 16 hours (min) (see note 1) | 6.5 | S3 | --- | --- | --- | --- |
| | Quality conformance inspection, part 3 | | | | | | | |
| --- | Life-test provisions | Group C; power output t = 250 hours | --- | --- | --- | --- | --- | --- |
| --- | Life-test end point | Power output | --- | --- | po | 100 | --- | w |

NOTES:

1. This test shall consist of subjecting the tube to the temperature and minimum time specified, after which the tube shall be tested for heater current and the value shall be within 380 to 420 mA.

2. May be made at constant voltage as an alternate with Eb/-Ec = 10 Vdc; Rk = 0; Is = 35 mAdc (min).

3. After subjection to the torque specified, the tube shall be tested for total grid current and the value shall not exceed -1.2 μAdc.

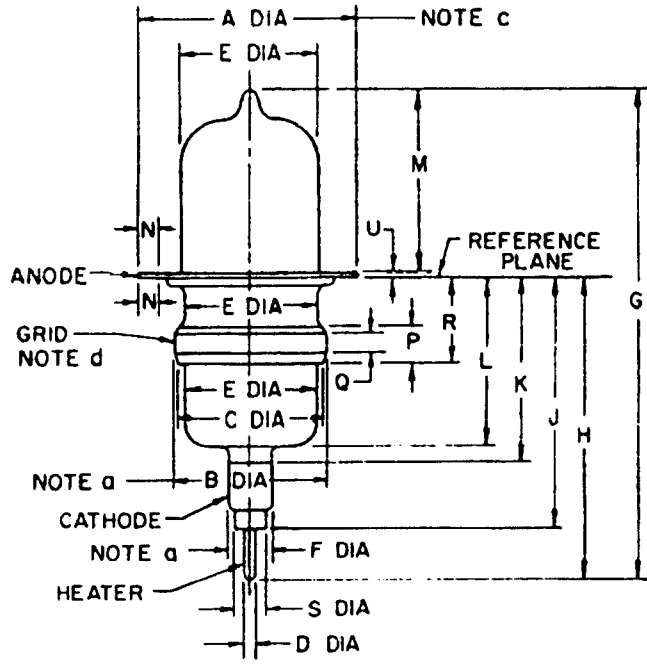
Custodians:
Army - EL
Navy - EC
Air Force - 85

Review activities:
Army - EL
Navy -
Air Force - 11, 85
DSA - ES

User activities:
Army - ME
Navy - AS, OS, MC, CG, SH
Air Force - 19

Preparing activity:
Navy - EC

(Project 5960-2350)




| Ltr | Dimensions in inches with metric equivalents (mm) in parentheses | | Notes |
|---|---|---|---|
| | Minimum | Maximum | |
| Quality conformance inspection, part 2 | | | |
| A | .995 (25.27) | 1.005 (25.53) | a, c |
| B | .740 (18.80) | .750 (19.05) | a, c |
| C | .695 (17.65) | .725 (18.42) | |
| D | .045 (1.14) | .055 (1.40) | a, b |
| E | -- -- | .660 (16.76) | a |
| F | .197 (5.00) | .207 (5.26) | a, b |
| G | -- -- | 2.375 (60.33) | |
| H | 1.405 (35.69) | 1.475 (37.47) | |
| J | 1.200 (30.48) | 1.230 (31.24) | |
| K | -- -- | .900 (22.86) | |
| L | -- -- | .815 (20.70) | |
| M | -- -- | .887 (22.53) | |
| N | .080 (2.03) | -- -- | b |
| P | .175 (4.45) | .195 (4.95) | |
| Q | .090 (2.29) | -- -- | b |
| R | .375 (9.53) | .425 (10.80) | |
| S | -- -- | .190 (4.83) | |
| U | .007 (.18) | .013 (.33) | |

NOTES:

a. Ref dia 'F' to be concentric with respective diameters as follows: Dia 'A' .040 (1.02 mm) FIR, Dia 'B' .030 (.76 mm) FIR, Dia 'D' .030 (.76 mm) FIR, Dia 'E' .060 (1.52 mm) FIR. Full indicator reading includes out of roundness and tilt of components.

b. Areas designated by dimensions 'D', 'F', 'N' and 'Q' must be clean and free from glass.

c. Ref dia 'A' to be concentric with diameter 'B' within .030 (.76 mm) FIR.

d. This surface to be flat within .005 (.13 mm).

FIGURE 1. Outline drawing of electron tube type 2C36.