



CATHODE-RAY TUBE

TYPE 12AWP-

The Du Mont Type 12AWP- is a 12-inch, electrostatic focus, magnetic deflection cathode-ray tube suitable for radar applications. The tube is designed for miniaturized equipments, featuring short overall length, a small diameter neck, and a miniature base. A low current heater is employed, and in conjunction with the small diameter neck affords considerable reduction in power requirements. An aluminized screen is utilized for greater light output and to minimize screen charging effects.

GENERAL CHARACTERISTICS

Electrical Data

| | | |
|---|---------------|------------------|
| Focusing Method | Electrostatic | |
| Deflection Method | Magnetic | |
| Deflection Angle, Approximate | 70 | Degrees |
| Direct Interelectrode Capacitances, Approximate | | |
| Cathode to all other electrodes | 4.5 | $\mu\mu\text{f}$ |
| Grid No. 1 to all other electrodes | 6.5 | $\mu\mu\text{f}$ |

Optical Data

| | | | | | |
|-----------------|---------------------------|--------------|--------|--------|--------|
| Phosphor Number | 4 | 7 | 12 | 19 | 25 |
| Fluorescence | White | White | Orange | Orange | Orange |
| Phosphorescence | ----- | Yellow-Green | Orange | Orange | Orange |
| Persistence | Medium to Medium Short | Long | Long | Long | Medium |

Faceplate Spherical

Mechanical Data

| | |
|--------------------------------|--------------------------|
| Overall Length (seated height) | 12 1/4 \pm 3/16 Inches |
| Greatest Diameter of Bulb | 12 7/16 \pm 1/8 Inches |
| Minimum Useful Screen Diameter | 11 Inches |
| Bulb Contact | J1-21 |
| Base * | E9-37 |
| Basing | 9HT |

- * A socket with a center opening to clear the tubulation should be used. Care should be taken in handling the tube to avoid damaging the exposed tubulation and bending the base pins.



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GENERAL CHARACTERISTICS (Mechanical Data) (Continued)

| | | |
|---|----------|---------|
| Bulb Contact Alignment: | | |
| Plane of J1-21 cap passes halfway between Pins No. 1 and 9 | ± 10 | Degrees |
| J1-21 cap on same side as Pins No. 1 and 9 | | |

MAXIMUM RATINGS (Absolute Maximum Values)

| | | |
|---|----------------|--------------------------------|
| Heater Voltage | 6.3 | Volts |
| Heater Current at 6.3 Volts | $0.3 \pm 10\%$ | Ampere |
| Accelerator Voltage | 13,000 7000 | Max. Volts DC Min. Volts DC |
| Focusing Electrode Voltage | -550 to +1100 | Max. Volts DC |
| Grid No. 2 Voltage | 770 | Max. Volts DC |
| Grid No. 1 Voltage: | | |
| Negative Bias Value | 180 | Max. Volts DC |
| Positive Bias Value | 0 | Max. Volts DC |
| Positive Peak Value | 0 | Max. Volts |
| Peak Heater-Cathode Voltage | | |
| Heater negative with respect to cathode | 180 | Max. Volts |
| Heater positive with respect to cathode | 180 | Max. Volts |

TYPICAL OPERATING CONDITIONS

| | | |
|---|------------|-----------|
| Accelerator Voltage | 10,000 | Volts DC |
| Focusing Electrode Voltage ¹ | 0 to 450 | Volts DC |
| Grid No. 2 Voltage | 300 | Volts DC |
| Grid No. 1 Voltage ² | -15 to -45 | Volts DC |
| Line Width A ³ | .018 | Inch Max. |
| Spot Position (Undelected) ⁴ | 5/8 | Inch |

MAXIMUM CIRCUIT VALUES

| | | |
|-------------------------------|-----|--------------|
| Grid No. 1 Circuit Resistance | 1.5 | Max. Megohms |
|-------------------------------|-----|--------------|



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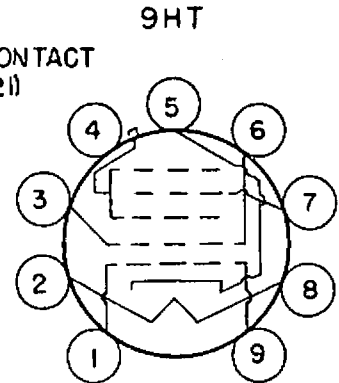
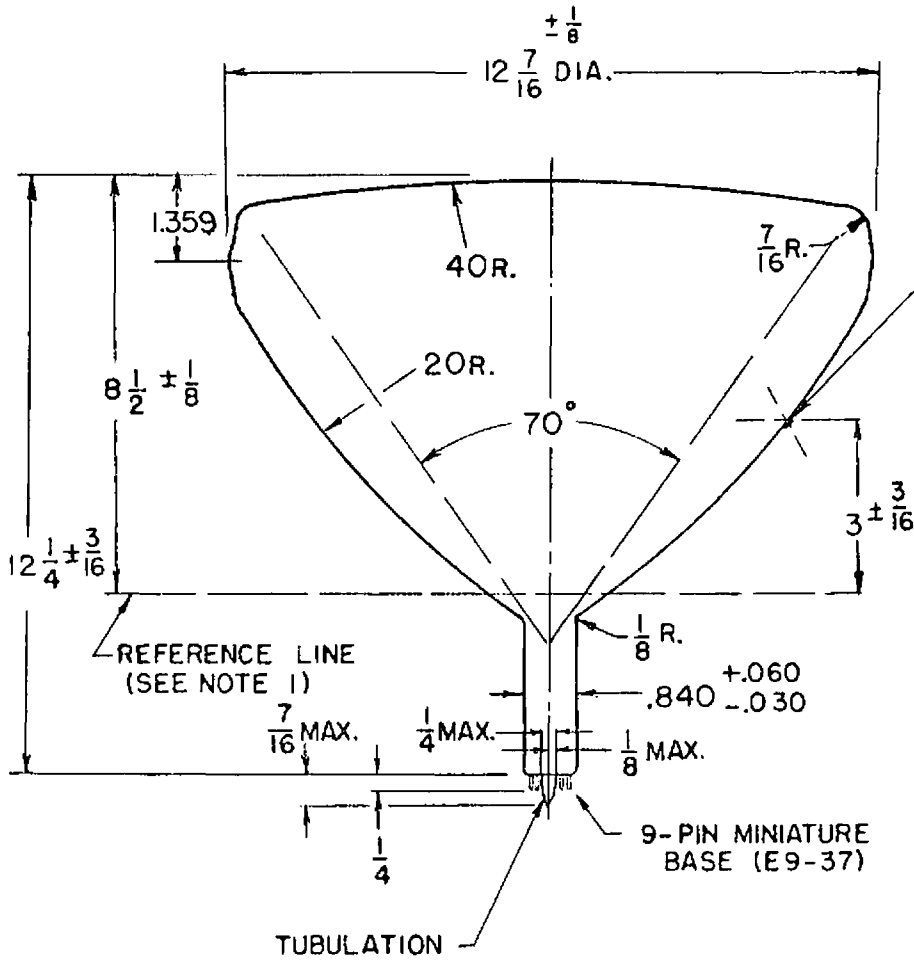
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NOTES

1. With Grid No. 1 voltage adjusted to produce an accelerator current of 25 μ A.
2. Visual extinction of undeflected, focused spot.
3. Measured in accordance with MIL-E-1 specifications at an accelerator current of 25 μ A.
4. The center of the undeflected, focused spot will fall within a circle of 3/8-inch radius concentric with the center of the tube face, with the tube shielded.
5. The P12, P19 and P25 screens can be permanently damaged if current density is permitted to rise too high. To prevent burning, minimum beam current densities should be employed.

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12 AWP CATHODE-RAY TUBE



BOTTOM VIEW OF BASE

| PIN NO. | ELEMENT |
|---------|--------------------|
| 1 | GRID NO.1 |
| 2 | HEATER |
| 3 | GRID NO.2 |
| 5 | CATHODE |
| 6 | GRID NO.2 |
| 7 | FOCUSING ELECTRODE |
| 8 | HEATER |
| 9 | GRID NO.1 |
| CONTACT | ACCELERATOR |

NOTE

1-REFERENCE LINE IS DETERMINED BY THE POINT WHERE LEADING EDGE OF 1.640" REFERENCE LINE GAUGE WILL STOP, (JETEC NO.128)