

ELECTRONIC TUBE REFERENCE

15T04A

Specialized - Cathode Ray electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
CATHODERAY

Cathode-ray display tube documented by Cintel, with published modulator, cathode, and first-anode capacitances; available extracted data does not support a narrower application classification.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / 600 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Cathode Ray	
MAXIMUM PLATE VOLTAGE	15500 V
Published ratings and characteristics promoted from the approved datasheet.	

15T04A Radar Tube

The **15T04A** is a professional-grade cathode ray tube designed primarily for radar applications. Featuring a nominal 15-inch screen diameter, the tube utilizes magnetic focusing and magnetic deflection to control and position the electron beam.

Physical Design and Screen Characteristics

The 15T04A is constructed with a specialized bulb shape optimized for radar display systems. It has a nominal neck diameter of 35 mm and is designed to be mounted in any physical position.

Screen Properties

- **Screen Type:** Aluminium backed
- **Fluorescence:** Orange
- **Afterglow:** Orange
- **Persistence of Afterglow:** Long

Physical Dimensions and Alignment

- **Overall Length:** 580 ± 7 mm
- **Greatest Diameter of Bulb:** 385 mm (with the outline drawing specifying 382 ± 3 mm)
- **Minimum Useful Screen Diameter:** 330 mm
- **Reference Line:** The reference line of the tube is physically determined by the position where a gauge with an internal diameter (I.D.) of 36 mm and a length of 50 mm rests on the bulb cone.
- **Anode Cap and Spigot Key Alignment:** The plane passing through the tube axis and the spigot key may vary from the plane passing through the tube axis and the anode cap by an angular tolerance of up to 10° . The anode cap is positioned on the same side of the tube as the spigot key.

Electrical Connections and Pinout

The 15TO4A operates with an indirectly heated cathode, requiring a heater supply that can be either alternating current (a.c.) or direct current (d.c.).

Heater Ratings

- **Heater Voltage:** 6.3 V
- **Heater Current:** 0.6 A

Base and Pin Configuration

The tube utilizes a **B.12.A** base, and the final anode connection is made via a **BSS448/CT8** cavity cap. The pin assignments, viewed from the bottom of the base, are configured as follows:

Pin Number	Connection
Pin 1	Heater
Pin 2	Modulator
Pin 3	Pin omitted
Pin 4	Pin omitted
Pin 5	Pin omitted
Pin 6	No connection
Pin 7	No connection

Pin Number	Connection
Pin 8	Pin omitted
Pin 9	Pin omitted
Pin 10	Anode 1
Pin 11	Cathode
Pin 12	Heater
Cap	Final Anode

Direct Inter-electrode Capacitances

- **Modulator to all other electrodes:** 12 μF
- **Anode 1 to all other electrodes:** 10 μF
- **Cathode to all other electrodes:** 12 μF

Operating Conditions and Maximum Ratings

To ensure reliable operation and prevent damage to the tube, circuit designs must strictly adhere to the specified maximum ratings and typical operating parameters.

Maximum Ratings (Absolute Values)

- **Final Anode Voltage:** 15,500 V
- **Anode 1 Voltage:** 600 V
- **Modulator Voltage (Negative bias value):** 180 V
- **Modulator Voltage (Positive bias value):** 0 V
- **Peak Heater-Cathode Voltage (Heater negative with respect to cathode):** 150 V
- **Peak Heater-Cathode Voltage (Heater positive with respect to cathode):** 150 V

Typical Operating Conditions

- **Final Anode Voltage:** 15,000 V
- **Anode 1 Voltage:** 300 V
- **Modulator Voltage for Cut-off:** -30 to -90 V
- **Focusing-Coil Current:** 730 A.T. (Ampere-Turns)

Focusing and Spot Alignment

The focusing coil must be positioned such that the center line of its air gap is approximately 80 mm from the reference line of the tube. Under typical operating conditions, the center of the undeflected and

unfocused electron spot will fall within a circle of 15 mm radius concentric with the physical center of the tube face.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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Published test conditions and operating points. Values on this page are preserved as reported by this source.

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Section 1 · Cathode Ray

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Modulator to all other electrodes capacitance	12 pF	Published datasheet value
Cathode to all other electrodes capacitance	12 pF	Published datasheet value
Anode 1 to all other electrodes capacitance	10 pF	Published datasheet value

TUBE TINKER

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