
The Thomas Electronics, Inc., 01M297P43 CRT is a round, high resolution CRT used in helmet displays. It features a ruggedized electron gun.

1. GENERAL CHARACTERISTICS

1.1 Mechanical

Overall length, max.	3.30 inches, max.
Minimum Useful Screen	0.750 inches, min.
Faceplate Radius	40mm
Base Leads	AWG 24, Potted
Weight	63 g (without leads)
Operating Position	Any

1.2 Electrical (General)

Cathode	Indirectly heated, oxide-coated
Heater Voltage	12.5 V
Heater Current	0.11 A, max.
Preheating Time	120 seconds

Interelectrode Capacitances (without leads):

Cathode To Other Electrodes, max.	5 pF
G1 To Other Electrodes, max.	6 pF
G3 To Other Electrodes, max.	6 pF
Focusing Method	Bipotential electrostatic
Deflection Method	Electromagnetic

1.3 Optical

Face plate	Fiber optic
AR Coating	None
Screen	Aluminized
Phosphor	P43

Specification and price change privileges reserved. For further information, contact:

THOMAS ELECTRONICS, INC.
100 Riverview Drive
Wayne, NJ 07470
Phone: (973) 696-5200 Fax: (973) 696-8298
Email: sales@thomaselectronics.com
Visit our Web site at www.thomaselectronics.com

2. OPERATING CONDITIONS

(All potentials are referred to the cathode)

2.1 Maximum Ratings (absolute values)

	Min.	Max.	Units
Grid G4 (main accelerating) Voltage	0	10	kV
Grid G3 (focusing) Voltage	0	1,400	V
Grid G2 (first accelerating) Voltage	-	1,400	V
Grid G1 (control) Voltage	-150	0	V
Peak Heater-to-Cathode Voltage	-180	+180	V
Heater Voltage	9.9	13.1	V
Heater Cathode Leakage Current	± 10 μ A		
G1 Leakage Current	± 3 μ A		
G2 Leakage Current	± 5 μ A		
Focus Leakage Current	± 5 μ A		
Anode Leakage Current	± 5 μ A		

2.2 Operating Voltages and Currents

Heater Voltage	12.5 V
Anode Voltage	8.5 k V
Grid G2 Voltage	1,200 V
Grid 1 Voltage (Cutoff)	-40 V to -70 V
Grid 3 Voltage (Focus)	1.0 to 1.4 k V
Focus Current (Note 2)	400 μ A max.
Anode Current (Note 2)	150 μ A max.
Modulation, maximum	45 V

2.3 Resolution and Brightness Test Conditions

Light Output	Modulation	Anode Current	Focus Current	Line Width
fL	Volts	μ A	μ A	inches
<u>NOTE 2</u>	<u>NOTE 1</u>	<u>NOTE 1</u>	<u>NOTE 1</u>	<u>NOTE 2</u>
100	15	5	25	0.0008

3. ENVIRONMENTAL CONDITIONS

	OPERATING	NOT OPERATING
Sine Vibration	0.1 – 10.0 Hz, 0.5 G	Not applicable
Random Vibration	30 – 600 Hz, +6 db/oct 600 – 700 Hz, .006 G ² /Hz 700 – 2000 Hz, -6db/oct	Not applicable
Crash	Not applicable	3 axis, 12 shocks each ½ sine, 11 ms, 20 g
Shock	Not applicable	6 g, 100 ms
Temperatures	Cold: -40 ° C Hot: +71 ° C	Cold: -55 ° C Hot: +85 ° C
Altitude * Temperature	30,000 ft 25 ° C	50,000 ft 25 ° C
Humidity *	Temperature 55 ° C RH 95% 144 Hours	

Fungi nutrient material shall not be used as part of this CRT assembly.

MTBF. The MTBF for this CRT assembly is estimated to be 30,000 hours.

4. FACE PLATE AND PHOSPHOR QUALITY - Opaque Blemishes

4.1 Quality Area = 0.67 inches x 0.50 inches

4.2 Blemishes

- Zone A (0.40)
.002 inches max.
- Zone B (0.60)
.003 inches max.
- Zone C (0.70)
.004 inches max.

5. DEFLECTION COIL CHARACTERISTICS

5.1 The deflection characteristics are:

Inductance:	Horizontal Winding	100 μ H, Nominal
	Vertical Winding	100 Vertical Winding
Resistance:	Horizontal Winding	1.8 Ω , max.
	Vertical Winding	1.8 Ω , max.
Sensitivity:	Horizontal Winding	0.16 Amps max. per mm
	Vertical Winding	0.16 Amps max. per mm
Geometry:		3%

The deflection will operate in an overscan mode. The deflection must be capable of generating a 0.8-inch by 0.8-inch raster.

The vertical frequency is 60 Hz to 85 Hz. The horizontal frequency is 37 kHz to 75 kHz.

The vertical deflection is driven by a current sensed sawtooth voltage signal. The horizontal is voltage flyback system with a linearity coil and film capacitor.

NOTES:

1. Measurement made with on the 0.5 x .05 inch raster.
2. Line width measured at screen center, at half-brightness point.