



engineering data service

SYLVANIA

7759

ADVANCE DATA

MECHANICAL DATA

Bulb T-3
Base E8-10, Subminiature Button Flexible Leads
Outline JEDEC 3-1
Basing 8DG
Cathode Coated Unipotential
Mounting Position Any

RATINGS¹ (Absolute Maximum)

Bulb Temperature (per JEDEC JO-11L) 2200 C
Altitude² 80000 Ft.
Radiation
Total Dosage ($\int$ neutrons/sq. cm/sec.) 10¹⁶ nvt
Dose Rate (neutrons/sq. cm/sec.) 10¹² nv

DURABILITY CHARACTERISTICS⁴

Impact Acceleration (3/4 msec Duration)⁵ 750 G Max.
Fatigue (Vibrational Acceleration for
Extended Periods)⁶ 2.5 G Max.
On-Off Heater Cycles⁷ 2000 Min.

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage³ 26.5 V
Heater Current 90 mA

DIRECT INTERELECTRODE CAPACITANCES

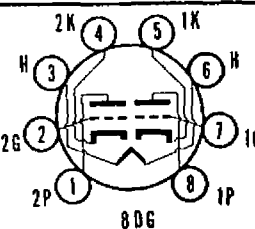
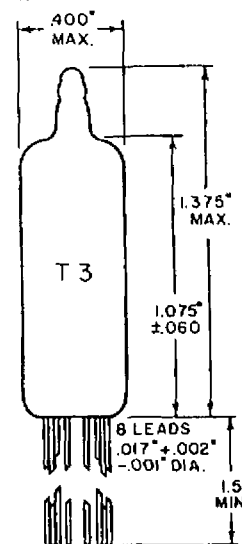
	Shielded ⁸	Unshielded	
Grid to Plate (Each Section)	1.4	1.5 μ f	
Input (Each Section)	2.2	2.0 μ f	
Output			
Section No. 1	1.3	0.28 μ f	
Section No. 2	1.3	0.33 μ f	
Grid to Grid	0.013	0.015 μ f	Max.
Plate to Plate	0.30	0.45 μ f	Max.

CONTROLLED DETRIMENTS

Interelectrode Insulation ⁹	100 Meg.	Min.
Total Grid Current ¹⁰	-0.3 μ A dc	Max.
Grid Emission ¹¹	-0.5 μ A dc	Max.
Vibration Output ¹² as equivalent Ecl	2.5 mVac	Max.
Heater-Cathode Leakage ¹³	5.0 μ A dc	Max.

QUICK REFERENCE DATA

The Premium Subminiature Type 7759 is a general purpose, medium μ , double triode having separate cathode connections for each section. It is particularly useful in oscillator and amplifier applications where power requirements permit the use of two tubes in one envelope. The 7759 is designed to provide dependable operation under conditions of severe shock, vibration, high temperature and high altitude and is manufactured and inspected to meet the applicable MIL-E-1 specification for reliability.



SYLVANIA ELECTRONIC TUBES

A Division of
Sylvania Electric Products Inc.

RECEIVING TUBE
OPERATIONS
EMPORIUM, PA.

Prepared and Released By The
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RATINGS¹ (Absolute Maximum)

Heater Voltage ³	26.5 ($\pm 10\%$)	V
Plate Voltage	165	Vdc
Peak Plate Forward Voltage ⁴	330	v
Plate Dissipation (Each Section)	1.1	W
Plate Current (Each Section)	22	mA _{dc}
DC Grid Voltage		
Positive Value	0	Vdc
Negative Value	55	Vdc
Grid Current	5.5	mA _{dc}
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	200	v
Heater Negative with Respect to Cathode	200	v
Grid Circuit Resistance	1.1	Meg

CHARACTERISTICS (Each Section)

Plate Voltage	100	Vdc
Cathode Resistor	150	Ohms
Plate Current	6.5	mA _{dc}
Transconductance	5400	μ mhos
Amplification Factor	35	
Grid Voltage for $I_b = 100 \mu$ A _{dc}	-6.5	Vdc

NOTES:

1. Limitations beyond which normal tube performance and tube life may be impaired.
2. If altitude rating is exceeded, reduction of instantaneous voltages (E_f excluded) may be required.
3. Tube life and reliability of performance are directly related to the degree of regulation of the heater voltage to its center rated value of 26.5 volts.
4. Tests performed as a measure of the mechanical durability of the tube structure.
5. Force as applied in any direction by the Navy Type High Impact (Flyweight) Shock Machine for Electronic Devices. Shock duration = $3/4$ milliseconds.
6. Vibrational forces applied in any direction for a period of 96 hours.
7. One cycle consists of the application of $E_f = 29.0$ V for one minute and interruption of the filament voltage for four minutes. A voltage of $E_{hk} = 140$ Vac is applied continuously.
8. External shield No. 318 connected to cathode.
9. Measure each section separately with $E_f = 26.5$ V; $E_{g-all} = -100$ Vdc; $E_{p-all} = -300$ Vdc; Cathode is positive so that no cathode emission occurs.

NOTES: (Cont'd)

10. Measure each section separately with $E_f = 26.5$ V; $E_b = 150$ Vdc; $R_k = 300$ ohms.
11. Each section preheated for five minutes with $E_f = 31.5$ V; $E_b = 150$ Vdc; $R_k = 500$ ohms; $R_g = 1.0$ Meg; then each section tested separately with $E_f = 31.5$ V; $E_b = 150$ Vdc; $E_{c1} = -7.5$ Vdc; $R_g = 1.0$ Meg.
12. Test each section separately with $E_f = 26.5$ V; $E_b = 100$ Vdc; $R_k = 150$ ohms; $C_k = 1000$ μ f; $R_p = 10,000$ ohms; $F = 40$ cps; $Acc = 15$ g.
13. Measure each section separately with $E_f = 26.5$ V; $E_{hk} = \pm 100$ Vdc.
14. Per MIL-E-1 Par. 6.5 and General Section of this Manual titled Specifications and Ratings.