

**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

**RATINGS<sup>1</sup> (Absolute Maximum)**

Bulb Temperature (per JEDEC JO-14)	220°	C
Altitude <sup>2</sup>	80000	Ft.
Radiation		
Total Dosage ( $\int$ neutrons/sq. cm/sec.)	10 <sup>16</sup>	nvt
Dose Rate (neutrons/sq. cm/sec.)	10 <sup>12</sup>	nv

**DURABILITY CHARACTERISTICS<sup>4</sup>**

Impact Acceleration (3/4 msec Duration) <sup>5</sup>	750	G	Max.
Fatigue (Vibrational Acceleration for Extended Periods) <sup>6</sup>	2.5	G	Max.
On-Off Heater Cycles <sup>7</sup>	2000		Min.

**ELECTRICAL DATA**

**HEATER CHARACTERISTICS**

Heater Voltage <sup>3</sup>	26.5	V
Heater Current	90	mA

**DIRECT INTERELECTRODE CAPACITANCES**

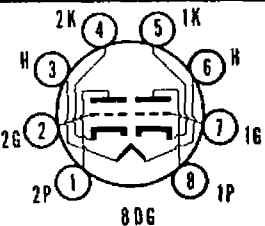
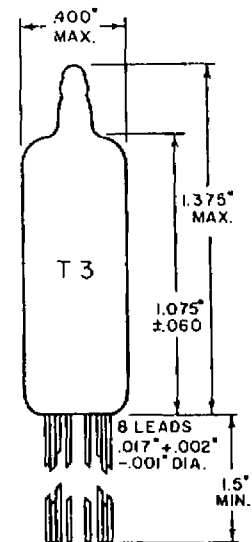
	Shielded <sup>8</sup>	Unshielded	
Grid to Plate (Each Section)	1.4	1.5	$\mu\text{f}$
Input (Each Section)	2.2	2.0	$\mu\text{f}$
Output			
Section No. 1	1.3	0.28	$\mu\text{f}$
Section No. 2	1.3	0.33	$\mu\text{f}$
Grid to Grid	0.013	0.015	$\mu\text{f}$
Plate to Plate	0.30	0.15	$\mu\text{f}$

**CONTROLLED DETRIMENTS**

Interelectrode Insulation <sup>9</sup>	100	Meg.	Min.
Total Grid Current <sup>10</sup>	-0.3	$\mu\text{A}$ dc	Max.
Grid Emission <sup>11</sup>	-0.5	$\mu\text{A}$ dc	Max.
Vibration Output <sup>12</sup> as equivalent Ecl	2.5	mVac	Max.
Heater-Cathode Leakage <sup>13</sup>	5.0	$\mu\text{A}$ dc	Max.

**QUICK REFERENCE DATA**

The Premium Subminiature Type 7759 is a general purpose, medium  $\mu$ , 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 TECHNICAL PUBLICATIONS SECTION EMPORIUM, PENNSYLVANIA

July 6, 1960  
Page 1 of 3

RATINGS<sup>1</sup> (Absolute Maximum)

Heater Voltage <sup>3</sup>	26.5 (±10%)	V
Plate Voltage	165	Vdc
Peak Plate Forward Voltage <sup>4</sup>	330	v
Plate Dissipation (Each Section)	1.1	W
Plate Current (Each Section)	22	mAdc
DC Grid Voltage		
Positive Value	0	Vdc
Negative Value	55	Vdc
Grid Current	5.5	mAdc
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	mAdc
Transconductance	5400	μmhos
Amplification Factor	35	
Grid Voltage for $I_b = 100 \mu\text{Adc}$	-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;  $E_g\text{-all} = -100$  Vdc;  $E_p\text{-all} = -300$  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;  $C_k = 1000$   $\mu$ 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.