

ADVANCE DATA

MECHANICAL DATA

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

RATINGS¹ (Absolute Maximum)

Bulb Temperature	180 °C
Altitude ²	80,000 Ft.
Radiation ³	
Total Dosage (Neutrons/sq. cm)	10 ¹⁶ nvt
Dose Rate (Neutrons/sq. cm/sec.)	10 ¹² nv

DURABILITY CHARACTERISTICS⁴

Impact Acceleration (3/4 msec Duration) ⁵	500 G	Max.
Fatigue (Vibrational Acceleration for Extended Periods) ⁶	2.5 G	Max.
On-Off Heater Cycles ⁷	2000	Min.

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage ⁸	6.3 V
Heater Current	150 mA

DIRECT INTERELECTRODE CAPACITANCES (Shielded)⁹

Grid to Plate	1.8 pf
Input	4.2 pf
Output	2.2 pf
Heater to Cathode	2.2 pf

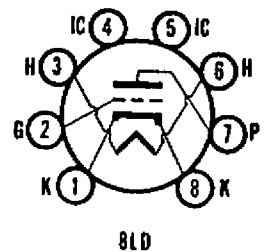
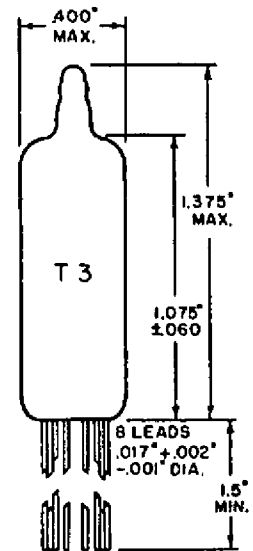
CONTROLLED DETRIMENTS

Interelectrode Insulation ¹⁰	100 Meg. Min.
Total Grid Current ¹¹	-0.4 µAdc Max.
Grid Emission ¹²	-0.5 µAdc Max.
Vibration Output as Equivalent Ec ¹³	4.0 mVac Max.
Heater-Cathode Leakage ¹⁴	20 µAdc Max.

QUICK REFERENCE DATA

The Sylvania Type 8319 is a subminiature strap frame grid, high- μ triode featuring low heater power, high Gm and Gm/ma. It is intended for grounded cathode IF preamp, RF amplifier and mixer applications and is operable into UHF.

The Type 8319 is designed to provide dependable operation under conditions of severe shock, vibration, high temperature and high altitude.



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

April 10, 1963

Page 1 of 3

RATINGS¹ (Absolute Maximum)

Heater Voltage ⁸	6.3 ($\pm 10\%$)	V
Plate Voltage	165	Vdc
Peak Plate Forward Voltage	330	v
Plate Dissipation	1.0	W
Plate Current	20	mAdc
DC Grid Voltage		
Positive Value	0	Vdc
Negative Value	55	Vdc
Grid Current	3.0	mAdc
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	100	v
Heater Negative with Respect to Cathode	100	v
Grid Circuit Resistance	1.1	Meg.

The spacing between Grid No. 1 and Cathode is of such a low order of magnitude as to preclude the use of excessive voltages between these elements in commercial tube checkers and shorts indicating devices, particularly where the tube is mechanically excited. The DC or peak AC voltage applied must not exceed 50 volts.

CHARACTERISTICS

Plate Voltage	100	Vdc
Cathode Resistor	160	Ohms
Plate Current	7.5	mAdc
Transconductance	14,000	μ mhos
Amplification Factor	55	
Grid Voltage for $I_b = 20 \mu$ Adc (Approx.)	-4.0	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. The radiation ratings are confirmed by a qualification test. The test is conducted in a suitable reactor furnishing mixed pile radiation at no less than 90% of the specified neutron dose rate. The tubes are measured for electrical parameters both before and after irradiation.
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 (Fly-weight) Shock Machine for Electronic Devices. Shock duration = 3/4 milliseconds.
6. Vibrational forces applied in any direction for a period of 96 hours.

NOTES: (Cont'd)

7. One cycle consists of the application of $E_f = 7.0$ V for one minute and interruption of the filament voltage for four minutes. A voltage of $E_{hk} = 140$ Vac is applied continuously.
8. Tube life and reliability of performance are directly related to the degree of regulation of the heater voltage to its center rated value.
9. External shield No. 318.
10. Measure with $E_f = 6.3$ V; $E_{g\text{-all}} = -100$ Vdc; $E_{p\text{-all}} = -300$ Vdc; cathode is positive so that no cathode emission occurs.
11. Measure with $E_f = 6.3$ V; $E_b = 100$ Vdc; $E_c = -1.5$ Vdc.
12. Preheat for five minutes with $E_f = 7.5$ V; $E_b = 100$ Vdc; $R_k = 160$ Ohms; $R_g = 1.0$ Meg; then test with $E_f = 7.5$ V; $E_b = 100$ Vdc; $E_{c1} = -4.0$ Vdc; $R_g = 1.0$ Meg.
13. Test with $E_f = 6.3$ V; $E_b = 100$ Vdc; $E_c = 0$; $R_k = 160$ Ohms; $R_p = 10,000$ Ohms; $C_k = 1000$ μ f; $F = 40$ cps; $Acc = 15$ g.
14. Measured with $E_f = 6.3$ V; $E_{hk} = \pm 100$ Vdc.