ADVANCE DATA

MECHANICAL DATA

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

RATINGS[1] (Absolute Maximum)

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

DURABILITY CHARACTERISTICS[5]

Impact Acceleration (3/4 msec Duration)[6]	500 G Max.
Fatigue (Vibrational Acceleration for Extended Periods)[7]	10 G Max.
On-Off Heater Cycles[8]	2000 Min.

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage[2]	26.5 V
Heater Current	45 mA

DIRECT INTERELECTRODE CAPACITANCES (Shielded)[3]

Grid No. 1 to Plate	.020 pf Max.
Input	4.9 pf
Output	3.0 pf

CONTROLLED DETRIMENTS

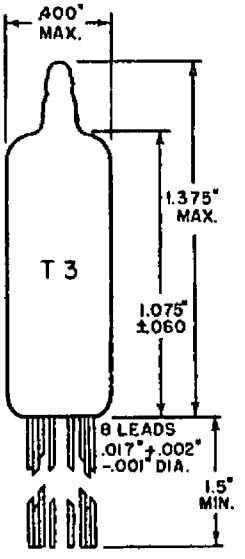
Interelectrode Insulation[9]	100 Megohm	Min.
Total Grid Current[10]	-0.3 μAdc	Max.
Grid Emission[11]	-0.5 μAdc	Max.
Vibration Output as Equivalent Grid One Voltage[12]	10.0 mVac	Max.
Heater-Cathode Leakage[13]	5.0 μAdc	Max.

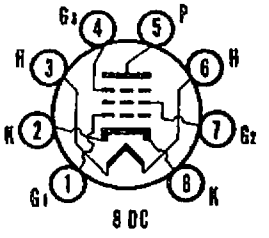
RATINGS[1] (Absolute Maximum)

Heater Voltage[2]	26.5 (±10%) V
Plate Voltage	55 Vdc

QUICK REFERENCE DATA

The Sylvania Type 8414 is a frame grid sharp cutoff pentode featuring high transconductance; and low grid to plate capacitance. The 8414 is well suited to VHF RF and IF amplifier and mixer service at 26.5-V heater and plate operation. It 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, PENNSYLVANIA

Prepared and Released By The TECHNICAL PUBLICATIONS SECTION EMPORIUM, PENNSYLVANIA

December 27, 1962

146 (10-58)

from JEDEC release #4095, Jan. 21, 1963

Grid No. 2 Voltage	55 Vdc
Cathode Current	10 mAdc
Grid No. 1 Voltage	
Positive Value	0 Vdc
Negative Value	55 Vdc
Heater-Cathode Voltage	
Heater Positive with Respect to Cathode	100 v
Heater Negative with Respect to Cathode	100 v
Grid No. 1 Circuit Resistance	2.4 Meg

CHARACTERISTICS

Plate Voltage	26.5 Vdc
Grid No. 2 Voltage	26.5 Vdc
Grid No. 1 Resistor	2.2 Meg
Grid No. 3 Voltage[4]	0 V
Plate Current	4.5 mAdc
Grid No. 2 Current	1.5 mAdc
Transconductance	5,000 μmhos
Plate Resistance (approx.)	50 K Ohms
Grid Bias for Ib = 10 μa (approx.)	-4.0 Vdc

NOTES:

1. Limitations beyond which normal tube performance and tube life may be impaired.
2. 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.
3. External shield connected to cathode is No. 318.
4. Connected to cathode.
5. Tests performed as a measure of the mechanical durability of the tube structure.
6. Force as applied in any direction by the Navy Type High Impact (Flyweight) Shock Machine for Electronic Devices.
7. Vibrational forces applied in any direction for a period of six hours repeatedly sweeping the range from 30 cps to 3,000 cps and back with the period of the sweep cycle being three minutes. Heater voltage only shall be applied.
8. One cycle consists of the application of 29.0 volts for one minute and interruption of the heater voltage for four minutes. A voltage of Ehk = 140 Vac is applied continuously.
9. Measured with Ef = 26.5 V; Eg1-all = -100 Vdc; Ep-all = -100 Vdc; cathode is positive so that no cathode emission occurs.
10. Measured with Ef = 26.5V; Eb = 50 Vdc; Ec2 = 50 Vdc; Ec1 = -1.5 Vdc.
11. Preheated for five minutes with Ef = 31.5V; Eb = 26.5 Vdc; Ec2 = 26.5 Vdc; Rg1 = 2.2 meg; then tested with Ef = 31.5V; Eb = 26.5 Vdc; Ec2 = 26.5 Vdc; Ec1 = -4.0 Vdc.
12. Test with Ef = 26.5V; Eb = 26.5 Vdc; Ec2 = 26.5 Vdc; Rg1 = 2.2 meg; Rp = 10,000 Ohms; f = 40 cps; Acc = 15 g.
13. Measured with Ef = 26.5 V; Ehk = ±100 Vdc.