



SYLVANIA

6559

engineering data service

MECHANICAL DATA

Envelope	Metal Capsule
Power Connector	Winchester FM6Pl
RF Connectors	Type N Jack ¹
Focusing	Electromagnetic Solenoid Required
Cooling ²	Forced Air
Mounting Position	Any
Tube Weight (Approx.)	1 lb
Solenoid Weight (Approx.):	
Military (Aluminum foil-wound)	13 lbs
Non-Military (Copper wire-wound)	39 lbs

QUICK REFERENCE DATA

Traveling-wave Amplifier
Full Octave Coverage
Over 2 W CW Power Output
from 2.0 to 4.0 Gc
Over 1 W CW Power Output
from 1.7 to 4.3 Gc
Suitable for Airborne
Applications

ELECTRICAL DATA³

HEATER CHARACTERISTICS

Voltage	6.3 ± 10%	V
Current (at 6.3 V)	1.1 - 1.5	A
Minimum Preheat Time	1	Minute

RATINGS (Absolute Maximum)

Collector Voltage with Respect to Helix	250	Vdc
Helix Voltage	1000	Vdc
Grid Voltage	800	Vdc
Cathode Current	65	mAdc
Helix Current	11	mAdc
Grid Current	5	mAdc
CW RF Input ⁴	1	W
Collector Seal Temperature	150	°C

TYPICAL OPERATION⁵

Conditions

Frequency	2.0 to 4.0	Gc
Magnetic Focusing Field Density	835	Gausses
Minimum Uniform Length	10.6	Inches
Collector Voltage with Respect to Helix	150	Vdc
Helix Voltage (Approx.) ⁶	825	Vdc
Grid Voltage (Approx.) ⁶	475	Vdc

Characteristics

	Min.	Max.	
Cathode Current	-	60	mAdc
Helix Current	-	8	mAdc
Grid Current	-	0.8	mAdc
Saturation Power Output	2	-	W
Small Signal Gain (-30 dbm Input)	37	-	db

POWER CONNECTIONS

- A. NC
- B. Grid
- C. Helix
- D. Heater, Cathode
- E. Heater
- F. Capsule, Collector

SYLVANIA ELECTRIC
PRODUCTS INC.

MICROWAVE DEVICE OPERATIONS
Mountain View, California

CIRCUIT DESIGN INFORMATION⁷

Helix Voltage Range	700 to 900	Vdc
Grid Voltage Range ⁸	350 to 650	Vdc

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NOTES:

1. Alternative connectors supplied on request. Length of power and RF leads can be made to fit customer requirements.
2. In addition to the cooling air requirements for the solenoid used with this tube it is recommended that at least 0.2 lbs/min of less than 26°C cooling air be directed at the collector end of this tube.
3. All voltages given are with respect to the cathode except where specified otherwise. For safety, pin F and the solenoid case should be grounded.
4. When RF is applied to the input of this tube the RF output should be connected to a load.
5. The quoted tube performance is for operation in a Sylvania-approved solenoid. Additional information will be supplied on request.
6. Specific recommended operating voltage values supplied with each tube.
7. Ranges include values required as a result of initial spread in tube characteristics as well as those to accommodate changes throughout life.
8. For initial setup only, this voltage should be adjustable from zero upward.

TYPICAL PERFORMANCE CHARACTERISTICS





