



communications

Electron Devices

L5990

Mini-Traveling Wave Tube

Features:

- **9.5 to 10.0 GHz or**
- **10.0 to 10.5 GHz**
- **140 Watts Minimum**
- **30 dB Gain Minimum**

Performance Characteristics

Frequency.....	9.5 to 10.0 GHz or 10.0 to 10.5 GHz
RF Output Power.....	140 W min
RF Input Power.....	25 dBm max
Small Signal Gain.....	30 dB min
Gain Tracking.....	± 3.0 dB
Noise Power Density	
Beam On.....	-50 dBm/MHz
AM/PM Conversion.....	7°/dB max
Harmonic Separation.....	-8 dBc min

Typical Operating Conditions

Duty.....	CW
Cathode Voltage.....	-4300 VDC or -4100 VDC
Cathode Current.....	165 mA
Helix Current-DC.....	1 mA
Helix Current-RF.....	<10 mA
Beam Control	
Electrode Voltage - off.....	-1500 VDC
Electrode Current.....	1 mA max
Filament Voltage.....	-6.3 VDC
Filament Current.....	0.5 A
Collector Voltage.....	2350 VDC or 2250 VDC
Collector Current.....	160 mA max
Prime Power.....	400 watts

Mechanical Description

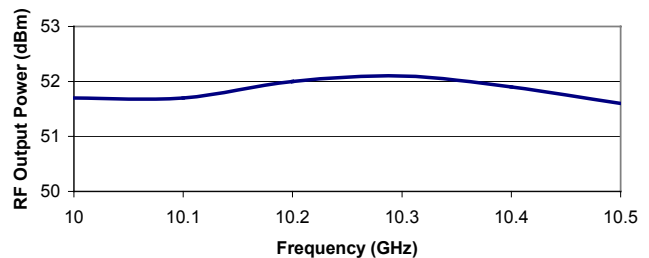
Dimensions*.....	7.3" x 1.3" x 1.25"
Weight.....	<2.0 lbs
Cooling.....	Conduction
Baseplate Temperature.....	-54°C to +110°C
RF Input Connector.....	SMA
RF Output Connector.....	TNC

All voltages are with respect to cathode.

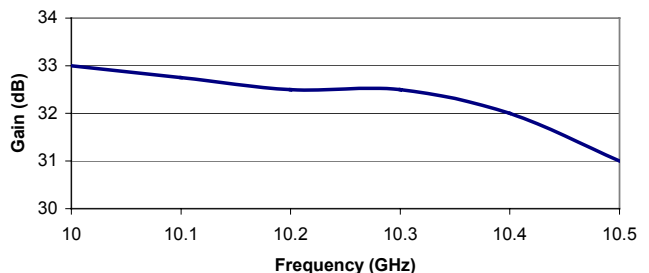
The L5990 is a packaged helix traveling wave tube with a power output of 140 watts over the frequency range of 9.5 to 10.0 GHz or 10.0 to 10.5 GHz. The tube has a metal-ceramic vacuum envelope, a beam control element, a single stage depressed collector for high efficiency and utilizes periodic permanent magnet focusing. The L5990 is suitable for use in airborne and shipboard applications.

DS59900603

Saturated Power vs. Frequency
Typical Upper Band



Small Signal Gain vs. Frequency
Typical Upper Band



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