



communications

Electron Devices

L6083

Mini-Traveling Wave Tube

Features:

- 26 to 40 GHz
- 20 Watts Minimum
- 30 dB Gain Minimum

Performance Characteristics

Frequency.....	26 to 40 GHz
RF Output Power 27 – 31 GHz.....	50 W min
RF Output Power 26 – 40 GHz.....	20 W min
RF Output Power 18 – 40 GHz (projected).....	20 W min
RF Input Power.....	20 dBm max
Small Signal Gain.....	30 dB min
Intermodulation, 7dB back off.....	-21 dBc max
Noise Power Density	
Beam On.....	-25 dBm/MHz
Beam Off.....	-95 dBm/MHz
AM/PM Conversion.....	6°/dB max
Harmonics 18 GHz.....	0 dBc max
Harmonics 26 - 40 GHz.....	-15 dBc max

Typical Operating Conditions

Duty.....	CW
Cathode Voltage.....	-6800 to -7400 VDC
Cathode Current.....	120 mA max.
Helix Current.....	5 mA max
Anode Voltage.....	0 to 1800 VDC
Anode Current.....	0.1 mA max
Focus Electrode Voltage*	
Beam On.....	-25 VDC
Beam Off.....	-1000 VDC
Filament Voltage*.....	-6.3 VDC
Filament Current.....	0.5 A max
Collector 1 Voltage*.....	2800 VDC
Collector 1 Current.....	20 mA max
Collector 2 Voltage*.....	2100 VDC
Collector 2 Current.....	110 mA max
Prime Power.....	300 watts max.

*with respect to cathode

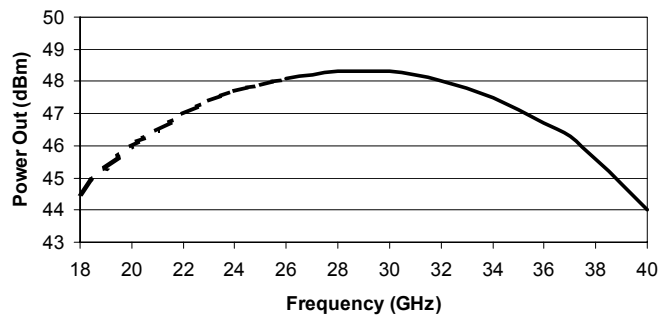
Mechanical Description

Dimensions (unpacked).....	6.0" x 1.0" x 1.0"
Weight.....	<1.5 lbs
Cooling.....	Conduction
RF Input Connector.....	2.9 mm (cable)
RF Output Connector.....	WRD 180

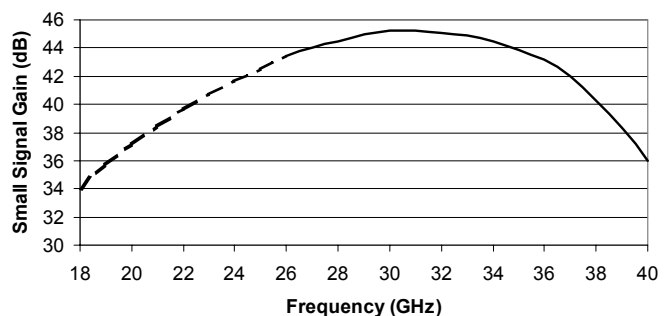
Preliminary Data

The L6083 is an unpackaged helix traveling tube with a power output of 20 watts minimum over the frequency range of 26 to 40 GHz and 50 watts minimum over the Ka band satcom frequency range of 27 to 31 GHz. The tube has a metal-ceramic vacuum envelope, a beam control element, a multi-stage depressed collector for high efficiency and utilizes periodic permanent magnet focusing. The L6083 is suitable for use in airborne, shipboard and ground-based applications. DS60830706

Saturated Power vs. Frequency



Small Signal Gain vs Frequency



Note: Dashed line reflects projected performance

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