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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

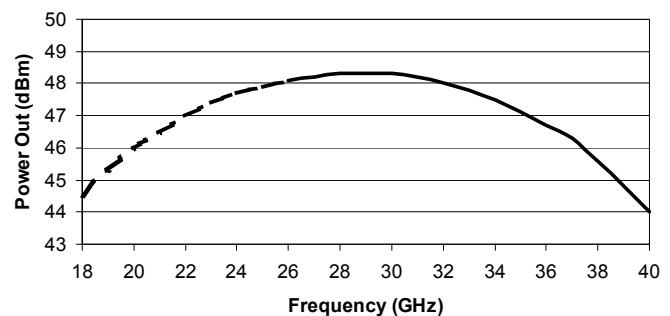
Mechanical Description

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

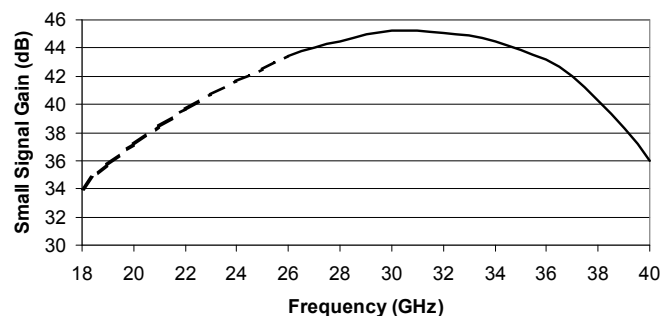
Preliminary Data

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. DS60830706a

Saturated Power vs. Frequency



Small Signal Gain vs Frequency



Note: Dashed line reflects projected performance

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