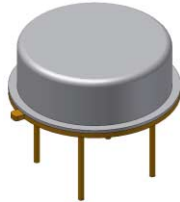


Agilent VTO-8951 Voltage Controlled Oscillator

Data Sheet

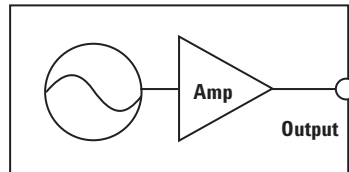


Description

The VTO-8951 provides a fundamental, low jitter source as a key component for the data re-timing in the transmitter subsystem and clock and data recovery in the receiver of the 10 Gb fiber optic systems.

The oscillator uses an extremely high performance low noise Agilent Silicon Bipolar transistor in conjunction with a hyperabrupt varactor diode to provide the tuning capability. The oscillator output is then coupled to through a bandpass filter to the output.

Functional Block Diagram



Features

- Operating frequency: 9.50 to 11.0 GHz
- Output power (50Ω Load): 10 dBm minimum
- Modulation sensitivity: 150 to 250 MHz/V
- Tuning voltage: 0 to 10 Volts
- Low jitter
- Frequency drift over 0°C to +75°C: 100 MHz
- 0.5" D x 0.18" H

Applications

- Sonet, FEC and 10 Gbits Ethernet Applications
- Industry standard package – hermetic using thin film construction

VTO-8951 Absolute Maximum Ratings^[1]

Parameter	Units	Ratings
Positive Supply Voltage	V	5.2
Tuning Voltage	V	+15
Operating Temperature	°C	-10 to +100
Storage Temperature	°C	-40 to +130

Note:

1. Operation of this device in excess of any of these limits may cause permanent damage.



VT0-8951 Summary Characterization, 0°C to 75°C

Parameter	Units	Min	Typ	Max
Frequency Range	GHz	9.50		11.00
Vt @ 9.5 GHz	V	0		
Vt @ 11 GHz	V			10
Power Output (50Ω Load @ 8 V)	dBm	10		15
Modulation Sensitivity	MHz/V	150		250
Modulation Bandwidth	MHz	100		
Second Harmonic (Below Carrier)	dBc			-15
Third Harmonic (Below Carrier)	dBc			-15
Spurious Output (Below Carrier)	dBc			-60
Phase Noise @ 100 KHz from F _o (Below Carrier)	dBc/Hz		-90	-85
Frequency Drift over Temperature	MHz			100
Pulling Figure (12 dB Return Loss)	MHz			30
Pushing Figure, ±0.2V Supply	MHz			10
Positive Supply Voltage	V	4.8	5	5.2
Positive Supply Current	mA			100
Tuning Port Input Capacitance	pf		12	
Dimensions	Inches		0.5" D x 0.18" H	

Typical Performance Curves @ +25°C

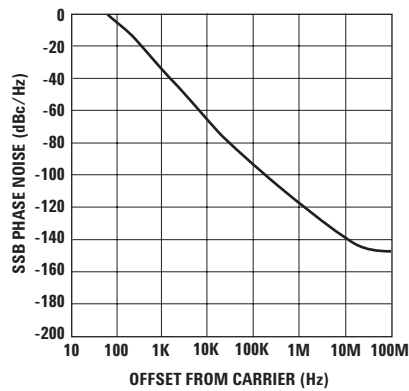


Figure 1. Typical Phase Noise Performance at 11.0 GHz.

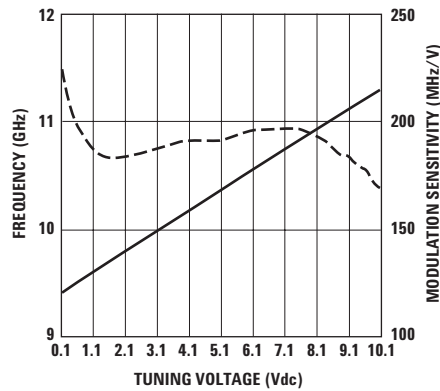


Figure 2. Frequency and Modulation Sensitivity vs. Tuning Voltage.

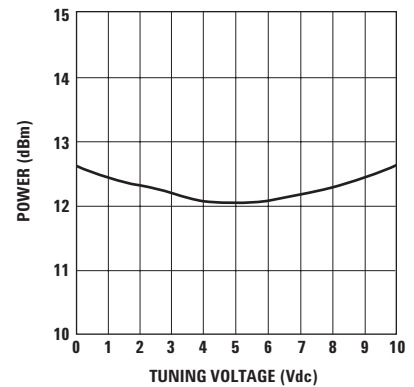


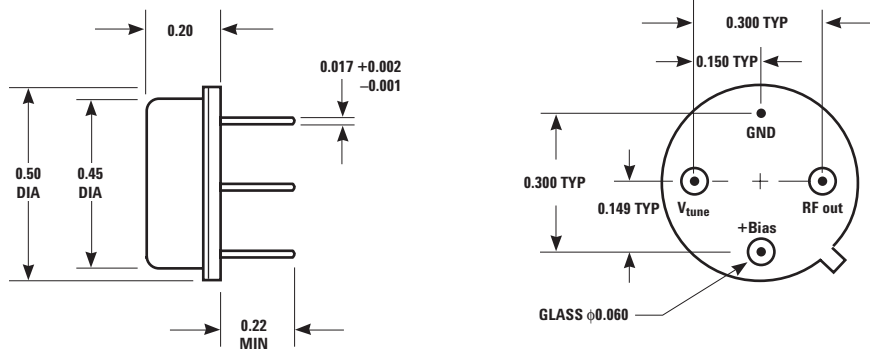
Figure 3. Power Output.

Ordering Information

Part Number

VTO-8951

Package Drawing and Mechanical Dimensions (inches)



DIMENSIONS ARE SPECIFIED IN INCHES

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For product information and a complete list of distributors, please go to our web site.

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Data subject to change.

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