



Voltage Tuned Oscillator

VTO-3981-01K VTO-4301-01K

Features

- Operating frequencies:
39.81GHz or 43.01GHz
- Output Power (50 Ω Load):
3 dBm Minimum
- Modulation Sensitivity:
20 to 40 MHz/V
- Tuning Voltage:
0 to 10 Volts
- Low Phase Noise:
< -95 dBc/Hz @100 KHz
- Low Power Consumption
- 1.18 L x 0.95 D x 0.5 H
(inches)

Applications

- Transmitter and Receiver Subsystems for OC-768 / STM-256 applications.
- 40 GHz Low Noise Source



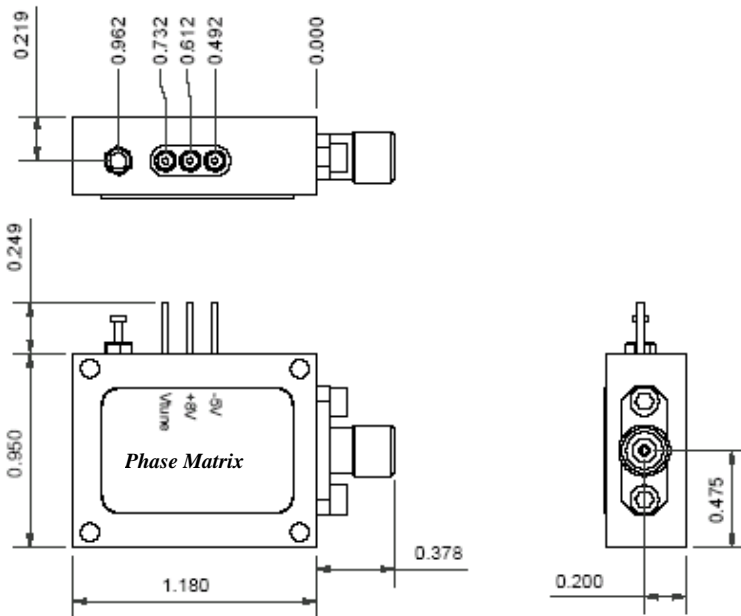
General Description

The VTO-3981-01K and VTO-4301-01K provide a low jitter source at 39.813 GHz and 43.018 GHz and is commonly used as a key component for clock and data recovery applications of the 40Gb/sec optical communication systems.

This low jitter source uses a high performance low noise Silicon Bipolar transistor in conjunction with a hyper-abrupt silicon varactor diode to realize a 10GHz voltage tuned oscillator with necessary tuning capability to compensate for any variations due to temperature, bias, load variations as well as aging. A GaAs FET buffer amplifier is used to achieve necessary power output and load isolation of the oscillator. A GaAs PHEMT MMIC quadrupler is used to generate 40GHz signal. Finally the signal is passed through a band-pass filter before coupling to the output port.

Frequencies other than the ones mentioned are available on request.

Package Mechanical Dimensions (Inches)



VTO-3981-01K June 2004 Preliminary
 Specification is subject to change without prior notification

VTO-3981-01K & VTO-4301-01K Absolute Maximum Ratings

Parameter	Units	Ratings
Positive Supply Voltage	V	0 to 10V
Tuning Voltage	V	0 to 12 V
Operating Temperature	°C	-10 to 85
Storage Temperature	°C	-40 to +125

VTO-3981- 01K & VTO-4301-01K Summary Electrical Specifications, 0° C to 75° C

Parameter	Units	Min	Typ	Max
Frequency f_o	GHz		39.813 or 43.018	
Vt @ f_o	V	0		10
Output (50 Ω Load)				
Power	dBm	3		7
Voltage p-p	V	0.9		1.4
Tuning Sensitivity	MHz / V	20		40
Modulation Bandwidth	MHz	100		
Output Return Loss	dB	10	12	
Second Harmonic (Below Carrier)	dBc			-20
Third Harmonic (Below Carrier)	dBc			-20
Sub Harmonically related Spurious	dBc			-20
Spurious Output (Below Carrier)	dBc			-60
Phase Noise @				
100 KHz from F_o	dBc / Hz		-95	-90
10 MHz from F_o	dBc / Hz			-130
Frequency Drift over Temperature	MHz			100
Pulling Figure (12 dB Return Loss)	MHz			10
Pushing Figure, +/- 0.2V Supply	MHz			20
Positive Supply Voltage	V	7.8	8	8.2
Positive Supply Current	mA			150
Negative Supply Voltage	V	-4.8	-5	-5.2
Negative Supply Current	mA			15
Package Dimensions	inches		1.18 x 0.95 x 0.5H	

Contact Factory for any changes in specifications.

Part Number Ordering Information

Part Number
VTO-3981-01K
VTO-4301-01K

For more information:

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