

# 40 GHz FIXED TUNED OSCILLATOR

FTO-40000-K1

## Overview:

The FTO-40000-K1 provides a low-noise source at 40 GHz and is commonly used as a key component in mm-wave communications, defense instrumentation, and optical-communication systems.

This low-jitter source uses a high-performance, low-noise silicon bi-polar junction transistor (Si BJT) in conjunction with a high-Q planar transmission line to realize an X-band, low-noise oscillator. A GaAs PHEMT MMIC frequency multiplier is used to generate a 40 GHz signal. Finally the signal is passed through a band-pass filter and medium power amplifier before coupling to the output port.

## Features:

- Operating frequency 40 GHz
- Output power 18 dBm typical
- Phase noise < -95 dBc/Hc @ 100 kHz.
- Low power consumption

## Applications:

- LO for mm-wave communication systems
- 40 GHz low-noise source



## Specifications

### ABSOLUTE MAXIMUM RATINGS

PARAMETER	UNITS	RATING
Positive Supply Voltage	V	+12
Negative Supply Voltage	V	-6
Operating Temperature	C	-10° to +85°
Storage Temperature	C	-40° to +125°

### ELECTRICAL SPECIFICATIONS (measured at 0° to +70°)

PARAMETER	UNITS	MIN.	TYP.	MAX.
Center Frequency $f_0$	GHz		40	
Frequency Accuracy @ +25° C	MHz	-10		+10
Output Power (50 ohms load)	dBm	17	19	21

### ELECTRICAL SPECIFICATIONS (continued)

PARAMETER	UNITS	MIN.	TYP.	MAX.
Output Return Loss	dB	10	12	
Second Harmonic ( <i>below carrier</i> )	dBc			-20
Sub-Harmonic Related Spurious	dBc			-25
Spurious Output ( <i>below carrier</i> )	dBc			-60
Phase Noise @ 100 kHz from $f_0$	dBc/Hz		-95	-90
Frequency Drift over Temp.	MHz	20		20
Pulling Figure (12 dB return loss)	MHz			5
Pushing Figure ( $\pm 0.3$ V)	MHz			20
Positive Supply Voltage	V	+4.8	+5.0	+5.2
Positive Supply Current	mA		400	500

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Model FTO-40000-K1

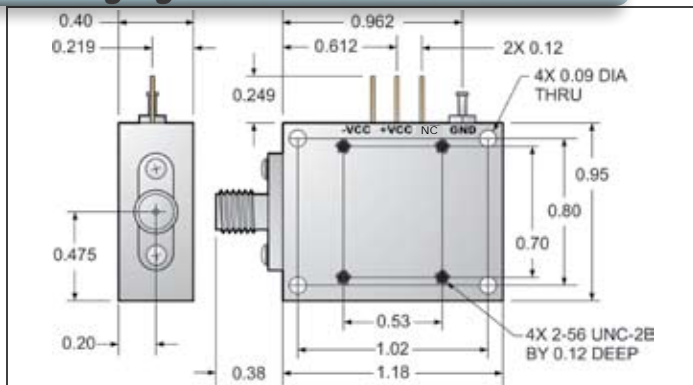
Specifications and ordering information subject to change without notice.

## Specifications (continued)

### ELECTRICAL SPECIFICATIONS (continued)

PARAMETER	UNITS	MIN.	TYP.	MAX.
Negative Supply Voltage	V	-4.8	-5	-5.2
Negative Supply Current	mA			15

## Packaging Information



K = Connectorized

## Ordering Information

### ORDERING INFORMATION

DESCRIPTION	SPECIFICATION
Model No.	FTO-40000-K1
Packaging Options	K

#### Notes:

- 1) See our [catalog](#) for information about other microwave components and sub-assemblies.

Data sheet PN: DS\_FTO-40000 Rev. 2

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Phase Matrix, Inc. ○ 109 Bonaventura Drive, San Jose CA 95134 ○ Tel: 1-408-428-1000 ○ [www.phasematrix.com](http://www.phasematrix.com)