

## TCXO3401

Microprocessor enhanced Compensation TCXO

### Features

Frequency Range 10 to 40 MHz  
Surface mount or leaded package  
Best in class Frequency Stability over temperature as low as +/- 70 ppb  
Rugged package design for shock and vibration

### Typical Applications

Cellular base stations  
Land mobile radio  
Wireless local loop  
GPS Timing / Synchronization  
Satellite Communications  
Automatic Meter Reading  
Test and Measurement

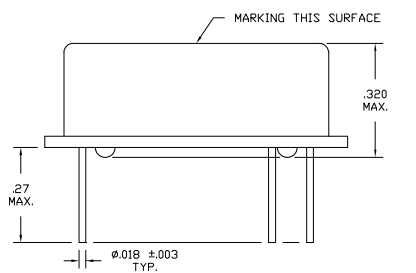
### Description

The TCXO3401 represents the highest frequency stability class of temperature compensated designs in the world. With its' two level compensation algorithms, the 3401 can achieve sub 0.1 ppm stabilities over a wide operating temperature range with extremely low frequency perturbations.

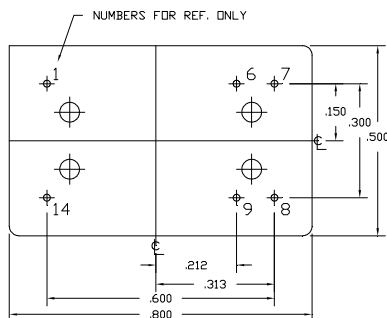
### Picture of Part



### Physical Dimensions & Pin Connections

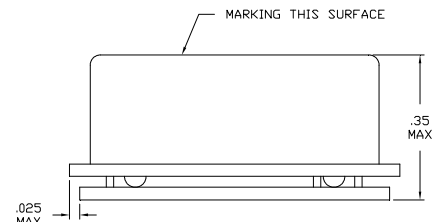


A Package

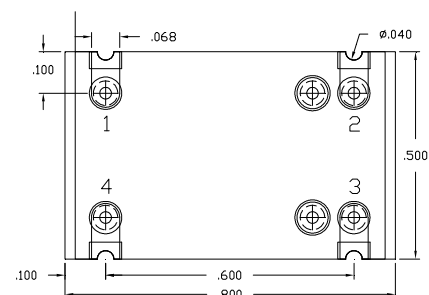


#### "A" Pin Configuration

Pin 1	EFC
Pin 6	N/C (Factory Use Only)
Pin 7	0V / Case Gnd
Pin 8	Output
Pin 9	N/C (Factory Use Only)
Pin 14	Input V



B Package



#### "B" Pad Configuration

Pad 1	EFC
Pad 2	0V / Case Gnd
Pad 3	Output
Pad 4	Input V

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**Specification**

TCXO Specification		Sym.	Condition	Value			Unit	Note
				Min.	Typ.	Max.		
Operational Frequency Range		f <sub>0</sub>		10		40	MHz	Custom designs to 50 MHz
HCMOS compatible option	Load					15	pF	
	H - level voltage	V <sub>H</sub>					V	
	L - level voltage	V <sub>L</sub>					V	
	Rise & Fall time						ns	
	Duty cycle			45	50	55	%	
Clipped Sine-wave option	Level	L					pk-pk	
	Load	RL			10		Kohm	
	Load	CL			10		pF	
Power supply								
Voltage		V <sub>cc</sub>		4.75	5.0	5.25	V	3.3 volt option available
Current consumption		I <sub>cc</sub>				30	mA	
Frequency control*								
Control voltage range		V <sub>c</sub>		0		V <sub>supply</sub>	V	Positive tuning slope
Tuning range					+/- 5.0		ppm	
Reference voltage Output								
Frequency stability								
vs. temperature			-40°C to +85°C, ref 25°C	-100		+100	ppb	
vs. 5% change in supply voltage			ref V <sub>cc</sub> typ.	-100		+100	ppb	
SSB Phase noise For 10 MHz HCMOS Typical			10 Hz		-95		dBc/Hz	for 10 MHz HCMOS Typical
			100 Hz		-120			
			1 kHz		-140			
			10 kHz		-150			
			100 kHz		-155			
Allan variance			1 s				e-12	
Aging			Projected aging after 30 days operation					
	Per Year					+/-0.3	ppm	
Environmental, mechanical conditions.								
Operating temperature range			-40°C to +85°C maximum range available that is standard					
Storage temperature range			-55°C to +105°C					
Humidity								
Mechanical shock			Per MIL-STD 202 , Method 213, Condition F					
Sine Vibration			Per MIL-STD 202 , Method 204, Condition D					
Random Vibration			Per MIL-STD 202 , Method 214, Condition I-J					

## Ordering Information

TCXO3401-PKG-XX.XXXXXX-W-Y-Z

1. Field " PKG " is leaded or surface mount package type
  - a. Option A : 14 Pin DIP Leaded
  - b. Option B : 4 Pin surface mount style
2. Field " XX.XXXXXX " is the Output Frequency to six decimals in MHz
3. Field " W " is Operating Temperature Range and Freq. Stability :
  - a. " 0 " for -20 °C to +70 °C and +/- 70 ppb
  - b. " 1 " for -40 °C to +85 °C and +/- 100 ppb
4. Field " Y " is Power Supply Option :
  - a. " 0 " for 5V +/- 5%
  - b. " 1 " for 3.3V +/- 5%
5. Field " Z " is clipped sine waveoutput versus square wave output
  - a. " 0 " for clipped sine wave output
  - b. " 1 " for square wave output

## Part Number Example

TCXO3401-A-10.000000-1-1-0

Option A Package Type: DIP14 Leaded

10.000000 MHz Operating Frequency

Operating Temperature of -40 °C to +85 °C

+/- 100 ppb Frequency Stability

3.3 volt supply

Clipped sine wave output

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### Product Performance Graph

