

# " OCXO " [ Oven Controlled Crystal Oscillators ]

**OC13T**

Square Wave

**OC13E**

True Sine Wave

Best stability  
**± 5.0 ppb**

Standard  
OCXO Series

DIP

3.3V

5.0V

Min.  
5 MHz

Max.  
40 MHz

## Applications

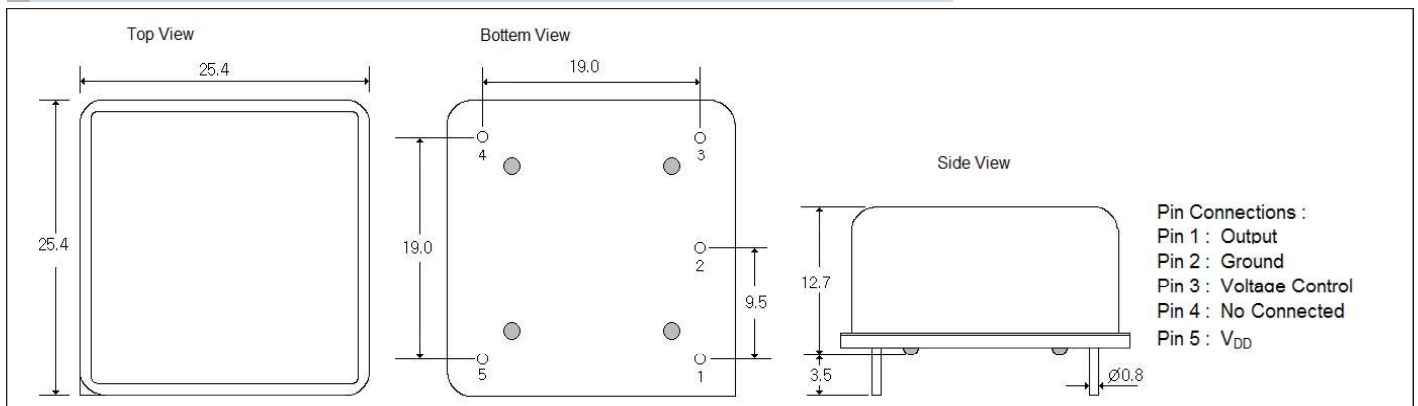
- OC13\_ ( 25.4 \* 25.4 \* 12.7 mm)
- Full Size 5 pin dip full metal package
- +3.3V , +5.0V Supply Voltages
- Voltage control ( Electronic Frequency Tuning ) is standard .



## General Specifications ( at+25°C and specified input voltage )

Output Wave Form		Square wave. Wave form code is " T "		True Sine Wave. Wave form code is " E "	
Supply Voltage		+3.3 V	+5.0 V	+3.3 V	+5.0 V
Supply Voltage range , " Voltage code "		+3.3V ± 5% , " 3 "	+5.0V ± 5% , " 5 "	+3.3V ± 5% , " 3 "	+5.0V ± 5% , " 5 "
Frequency Range		5 ~ 40.0 MHz		5 ~ 40.0 MHz	
Initial Calibration Tolerance		± 100 ppb ( max.)	± 100 ppb ( max.)	± 100 ppb ( max.)	± 100 ppb ( max.)
		Vcon = +1.65 V	Vcon = +2.5 V	Vcon = +1.65 V	Vcon = +2.5 V
Type of Crystal Cut Used		" SC - cut " crystal or " IT - cut " crystal			
Frequency Stability	vs Temperature ( refer to +25°C )	± 3 ppb ( max.) over 0°C to +70°C			
		± 5.0 ppb ( max.) over -30°C to +70°C			
		± 5.0 ppb ( max.) over -40°C to +85°C			
	vs Voltage Change	± 1.0ppb ( max.) , for a ± 5% input voltage change .			
	vs Warm-up time (+25°C)	10 minute max. Within ± 10 ppb of its reference frequency.			
	vs Aging	± 0.5 ppb max./after 30 days ; ± 50 ppb max./first year ; ± 300 ppb max. over 10 years.			
Voltage Control	Freq. Deviation Range	± 0.5 ppm min. , ± 5 ppm max. Reference to fo at +25°C and over operating temperature range.			
On pin 1 (EFC)	Control Voltage Range	+1.65V ± 1.65V	+2.5V ± 2.5V	+1.65V ± 1.65V	+2.5V ± 2.5V
	Transfer Function	Positive : Increasing control voltage increases output frequency .			
( Electronic Freq. Tuning )	Input Impedance	50 K ohms min.			
	EFC Linearity	± 10 % ( max.)			
Power	Power Dissipation ( at +25°C )	1.3 Watts max. at steady-state; 1000 mA max. at turn-on.			
	Output Level ( for True Sine )	---	---	+8 dBm ( typ.) , +10 dBm ( max.) into 50Ω load .	
Output	Harmonic ( for True Sine )	---	---	-30 dBc ( min.)	
	Spurious ( for True Sine )	---	---	-60 dBc ( min.)	
	Load	15pF		50 Ω	
	Output Logic High ( V <sub>OH</sub> )	+2.4 V ( min.)	+2.4 V ( min.)	---	---
	Output Logic Low ( V <sub>OL</sub> )	+ 0.4 V ( max.)	+ 0.4 V ( max.)	---	---
	Duty Cycle ( V <sub>DD</sub> )	50 % ± 5% @ +1.4V		---	---
	Rise and Fall Time	7 nS ( max.) ( 20% → 80% of waveform )		---	---
	Phase Noise Offset [ 10.0 MHz ] ( typical )	10 Hz	100 Hz	1 KHz	10 KHz
-120 dBc		-135 dBc	-145 dBc	-150 dBc	

## Outline Dimensions ( Unit : ±0.2 mm )



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