

# " OCXO " [ Oven Controlled Crystal Oscillators ]

## OC14T

Square Wave

Best stability

±30 ppb

Voltage Control

DIP

3.3V

5.0V

Min.

5 MHz

Max.

40 MHz

### Applications

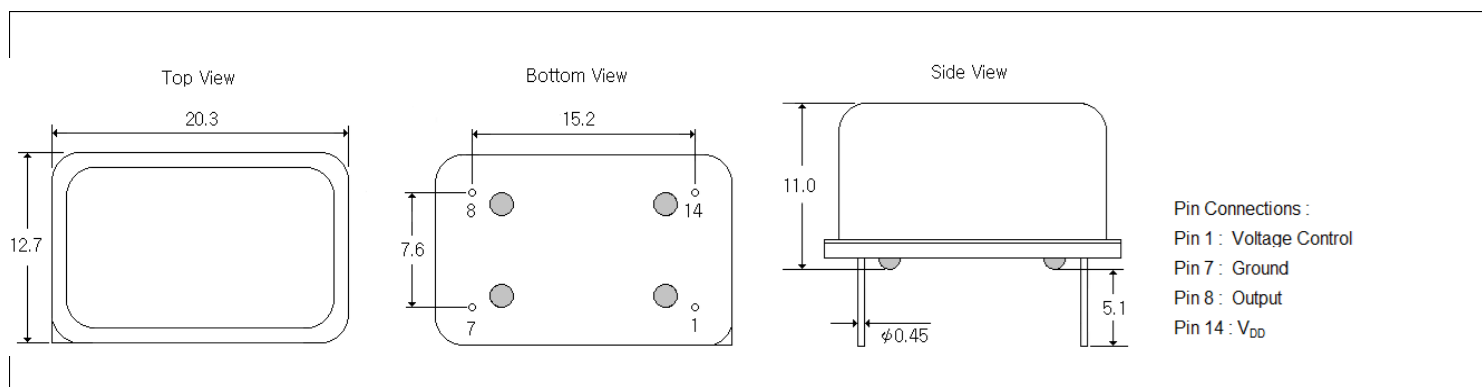
- OC14\_ ( 20.3 \* 12.7 \* 11.0 mm)
- +3.3V , +5.0V Supply Voltages
- Voltage control ( Electronic Frequency Tuning ) is standard .



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

Output Waveform		Square wave . Waveform code is " T "			
Supply Voltage		+3.3 V		+5.0 V	
Supply Voltage range , " Voltage code "		+3.3V ± 5% , " 3 "		+5.0V ± 5% , " 5 "	
Frequency Range		5 ~ 40.0 MHz Standard Frequency : 10.0 MHz		5 ~ 40.0 MHz Standard Frequency : 10.0 MHz	
Initial Calibration Tolerance		± 500 ppb ( max.)		± 500 ppb ( max.)	
		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 )	± 50 ppb ( max.) over 0°C to +70°C			
		± 100 ppb ( max.) over -30°C to +70°C			
		± 100 ppb ( max.) over -40°C to +85°C			
	vs Voltage Change	± 50ppb ( max.) , for a ± 5% input voltage change .			
	vs Warm-up time (+25°C)	10 minute max. Within ± 100 ppb of its reference frequency.			
	vs Aging	± 5 ppb max./after 30 days ; ± 500 ppb max./first year ; ± 3 ppm max.over 10 years.			
Voltage Control	Freq. Deviation Range	> ± 5 ppm 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	
	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 )	0.8 Watts max. at steady-state; 600 mA max. at turn-on.			
Output	Output Logic High ( V <sub>OH</sub> )	+2.4 V ( min.)		+2.4 V ( min.)	
	Output Logic Low ( V <sub>OL</sub> )	+ 0.5 V ( max.)		+ 0.5 V ( max.)	
	Duty Cycle ( V <sub>DD</sub> )	50 % ± 5% @ + 2.0V			
	Output Load	15pF			
	Rise and Fall Time	7 nS ( max.) ( 20% → 80% of waveform )			
	Phase Noise Offset [ 10.0 MHz ] ( typical )	1 Hz	10 Hz	1 KHz	10 KHz
	-70 dBc	-108 dBc	-140 dBc	-150 dBc	

### Outline Dimensions ( Unit : ±0.2 mm )



Mercury [www.mercury-crystal.com](http://www.mercury-crystal.com) ■ Taiwan : Tel: (886)-2-2406-2779 / sales-tw@mercury-crystal.com

■ USA : Tel: (1)-909-466-0427 / sales-us@mercury-crystal.co ■ China : Tel: (86)-512-5763-8100 / sales-cn@mercury-crystal.com

# " OCXO " [ Oven Controlled Crystal Oscillators ]

Square wave " OC \_ T "

Clipped Sine Wave " OC \_ S "

True Sine Wave " OC \_ E "

## Part Number Format and Example

	[ 1 ]	[ 2 ]	[ 3 ]	-	[ 4 ]	-	[ 5 ]	/	[ 6 ]	
	Holder Type	Output Wave	Supply Voltage		Center Frequency		Frequency Stability		Operating Temp. Range	
Examples	(1)	OC12	E	3	-	10.000	-	200	/	0+70
	(2)	OC18	E	12	-	100.000	-	100	/	-30+70
	(3)	OC51	S	3	-	10.000	-	30	/	-20+70
	(4)	OC14	T	5	-	5.000	-	10	/	-40+85

Ex (1) : OC12E3 - 10.000 - 200 / 0+70 [ OC12 type , True Sine wave , 3.3V , 10.000MHz , ± 200ppb from 0°C to 70°C ]

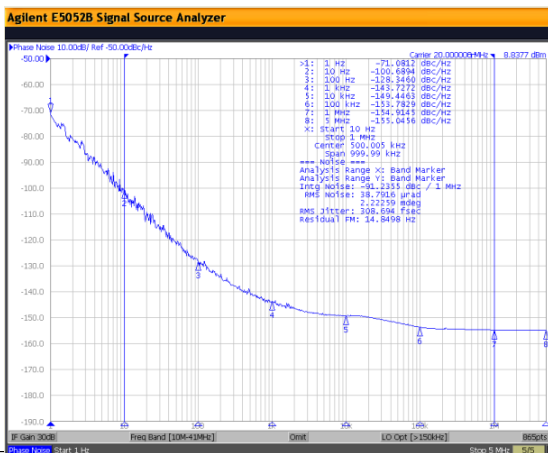
Ex (2) : OC18E12 - 100.000 - 100 / -30+70 [ OC18 type , True Sine wave , 12V , 100.000MHz , ± 100ppb from -30°C to 70°C ]

Ex (3) : OC51S3 - 10.000 - 30 / -20+70 [ OC51 type , Clipped Sine Wave , 3.3V , 10.000MHz , ± 30 ppb from -20°C to 70°C ]

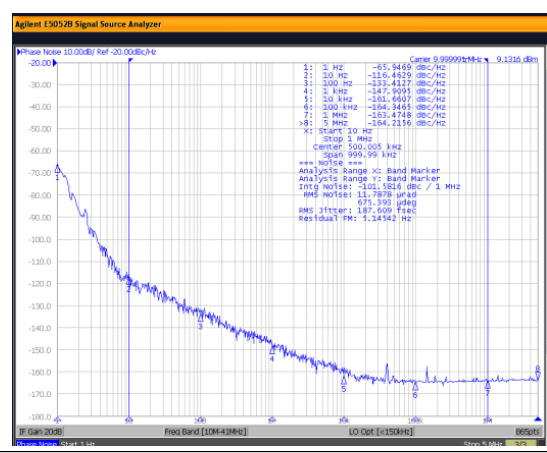
Ex (4) : OC14T5 - 5.000 - 10 / -40+85 [ OC14 type , Square Wave , 5.0V , 5.000MHz , ± 10 ppb from -40°C to 85°C ]

[ 1 ]	Holder Type " OC _ " stands for OCXO ,
[ 2 ]	" T " stands for Square Wave , " E " stands for True Sine Wave , " S " stands for Clipped Sine Wave ex 1 : OC14T, OC14 package, Square Wave output ; ex 2 : OC18E, OC18 package, True Sine wave ; ex 3 : OC51S, OC51 package, Clipped Sine Wave
[ 3 ]	Supply voltage , " 3 " for 3.3V D.C , " 5 " for 5.0V D.C , " 12 " for 12V D.C
[ 4 ]	Center Frequency in MHz
[ 5 ]	Frequency stability in ± ppb ; ex 1 : ±200ppb ---200 , ex 2 : ± 30ppb ---30 , ex 3 : ± 5ppb --- 5
[ 6 ]	Operating temperature range in °C ex 1 : 0 °C to 70°C ----- 0+70 ; ex 2 : -30 °C to 70°C ----- -30+70 ; ex 3 : -40 °C to 85°C ----- -40+85

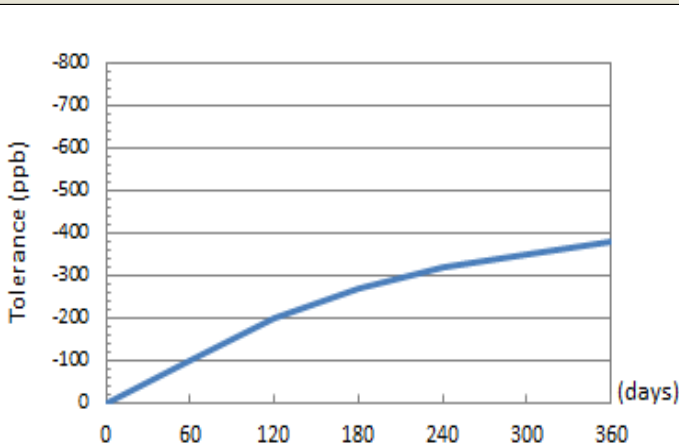
SSB Phase Noise : Clipped Sine Wave(OC51S-20.000)



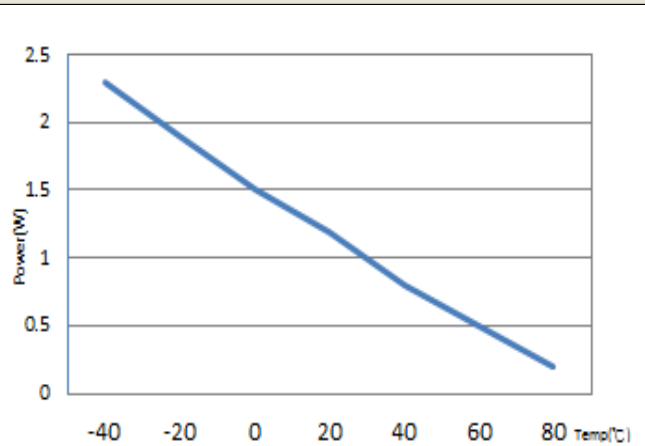
SSB Phase Noise : Square wave(OC13T-10.000)



Aging : OC51S-20.000



Power Consumption vs Temperature (OC13T5-10.000)



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