" OCXO " [Oven Controlled Crystal Oscillators]

OC13T	OC13E	Best stability	Standard OCXO Series	DIP	3.3V	5.0V	Min.	Max.
Square Wave	True Sine Wave	± 5.0 ppb					5 MHz	40 MHz

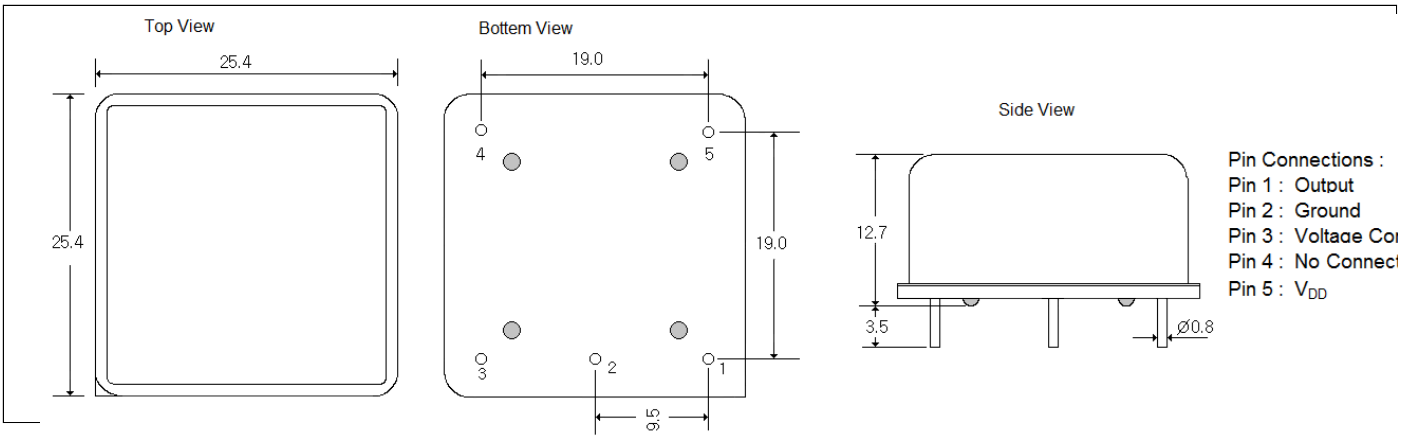
Applications

- 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 On pin 1 (EFC) (Electronic Freq. Tuning)	Freq. Deviation Range	± 0.5 ppm min, ± 5 ppm max. Reference to fo at +25°C and over operating temperature range.			
	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 .			
	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	Output Level (for True Sine)	---	---	+8 dBm (typ.) , +10 dBm (max.) into 50Ω load .	
	Harmonic (for True Sine)	---	---	-30 dBc (min.)	
	Spurious (for True Sine)	---	---	-60 dBc (min.)	
	Load	15pF		50 Ω	
	Output Logic High (V_{OH})	+2.4 V (min.)	+2.4 V (min.)	---	---
	Output Logic Low (V_{OL})	+ 0.4 V (max.)	+ 0.4 V (max.)	---	---
	Duty Cycle (V_{DD})	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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" OCXO " [Oven Controlled Crystal Oscillators]

Square wave " OC _ T "	Clipped Sine Wave " OC _ S "	True Sine Wave" OC _ E "

Part Number Format and Example

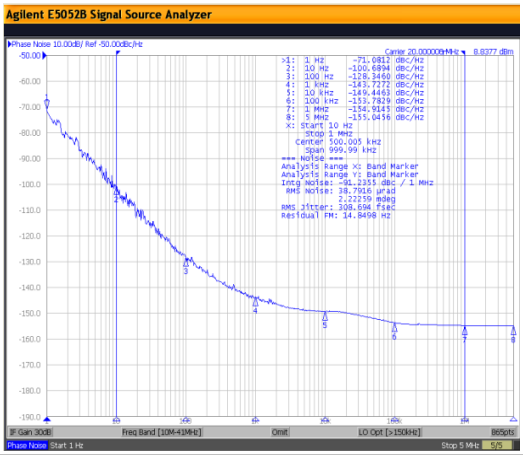
[1]	[2]	[3]		[6]		[7]		[8]
Holder Type	Output Wave	Supply Voltage	-	Center Frequency	-	Frequency Stability	/	Operating Temp. Range

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

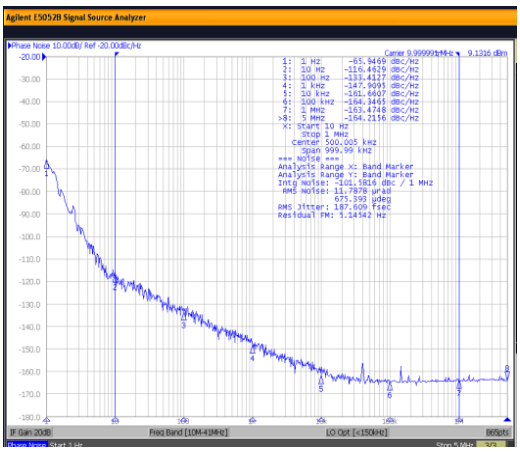
Ex (1) : OC12E3 - 10.000 - 200 / 0+70 [OC12 type , True Sine wave , 3.3V , 10.000MHz , ± 200ppb from 0°C to 70°C]
Ex (2) : OC18E12 - 100.000 - 100 / -30+70 [OC18 type , True Sine wave , 12V , 100.000MHz , ± 100ppb from -30°C to 70°C]
Ex (3) : OC51S3 - 10.000 - 30 / -20+70 [OC51 type , Clipped Sine Wave , 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 Wav
[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

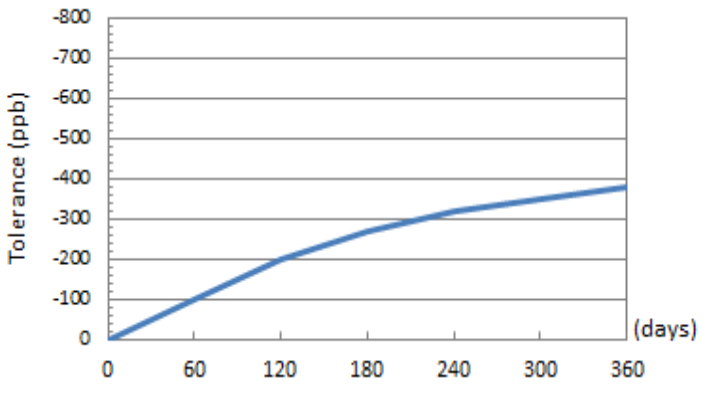
SSB Phase Noise : Clipped Sine Wave(OC51S-20.000)



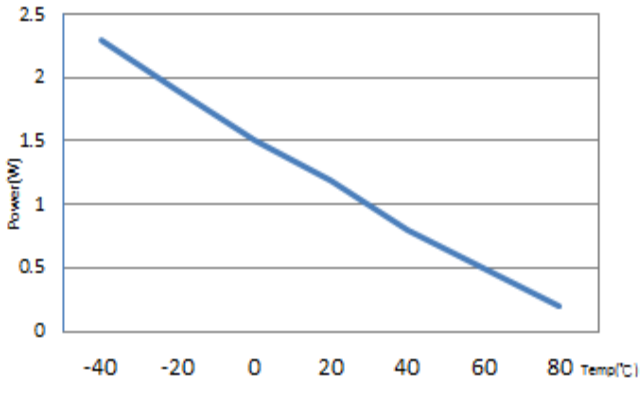
SSB Phase Noise : Square wave(OC13T-10.000)



Aging : OC51S-20.000



Power Consumption vs Temperature (OC13T5-10.000)



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