

OX1640 Series



Ultra low noise OCXO, Sine wave, 41.0 x 30.0 x16.0mm, SMD

- Ultra - low noise OCXO
- Excellent frequency vs stability
- Unit weight: 30gm max
- RoHS compliant

Output characteristics			
Parameter	Specification		Remarks/Test condition
Frequency range	10MHz		Contact us for other custom frequency requirement
Supply voltage	12.0V (typical)		Min: 10.5V, Max: 12.6V
Warm-up current consumption	340mA max		
Steady state current consumption	200mA max		
RF output			
Output waveform	Sine wave		
Output load	50.0Ω		±5%
Output level	Min: +5dBm, Max: +10dBm		
Harmonics	-20.0dBc max		
Spurious	-90.0dBc max		@ 9 ~ 11MHz
Warm-up time at +25°C	5 min max		Δf final/ fnominal < ±100.0ppb
Phase noise	See table 2		
Frequency stability (Typical, @ 10.00MHz)			
Initial tolerance	±100.0ppb max		At +25°C, Vc @ Vref/2
Vs. Operating temperature range	±5.0ppb ~ ±200.0ppb		Table 1
Vs. supply voltage variation	±0.5ppb max		Vcc ± 100mV
Vs. load change	±0.5ppb max		RL ± 5%
Long term aging/day	±0.5ppb max		After 10 days operation
Long term aging 1 st year	±30.0ppb max		After 10 days operation
Long term aging 15 years	±500.0ppb max		After 10 days operation
Frequency adjustment range			
Electronic frequency control (EFC)	Min: ±0.5ppm, typical: ±1.0ppm, Max: ±1.5ppm		
Reference voltage VREF output	5.0V		
EFC voltage Vc	2.5V ± 2.5V		
EFC slope	Positive		
EFC non-linearity	10.0% max		
EFC input impedance	100.0kΩ min		
Modulation bandwidth	1kHz min		@ -3 dB
Short term stability (Allan deviation) , max	5 x 10 ⁻¹²		T = 1 s
	1 x 10 ⁻¹¹		T = 10 s
	-1 x 10 ⁻¹⁰		T = 100 s
Oven alarm output	Low = alarm (not stable) High = ready		0....0.4V 2.4....5V
Oscillator enable input (HCMOS compatible input)	Low = alarm Oscillator OFF High = Oscillator ON		0....0.4V 2.4....12.6V
Absolute maximum ratings			
Supply voltage Vs	Min: - 0.5V	Max: Vs + 10%	Vs to GND
Control voltage Vc	Min: -0.5V	15V	Vc to GND
Oscillator enable voltage OE	Min: -0.5V	Vs	Voe to GND
Storage temperature	-55°C ~ +125°C		
Resistance to soldering heat	10 sec		@ 245°C

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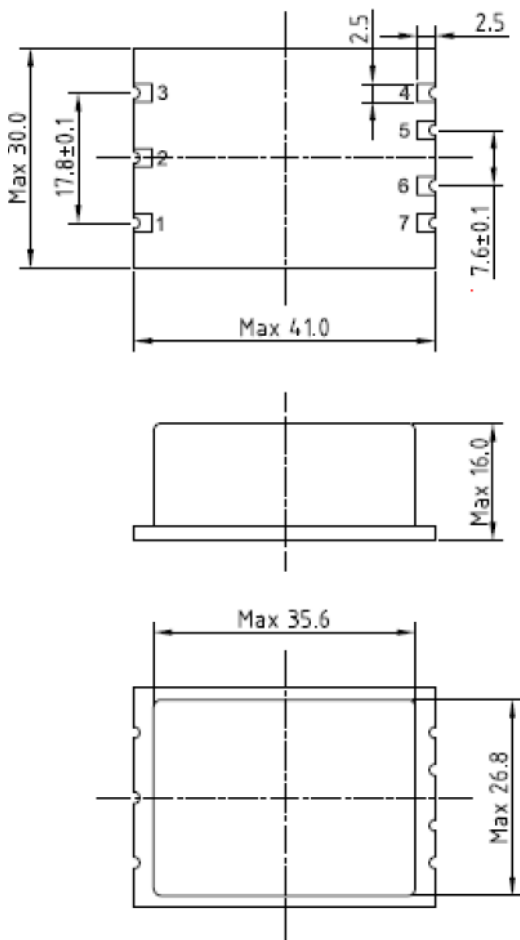
Table 1: Phase noise (Unit: dBc/Hz)

Offset	Option A	Option B	Option C
1 Hz	-110	-112	-115
10 Hz	-142	-144	-146
100 Hz	-155	-156	-157
1 kHz	-160	-160	-160
≥10 kHz	-160	-160	-160

Table 2: Frequency stability vs operating temperature range

Temperature (°C)	±5.0ppb	±10.0ppb	±25.0ppb	±50.0ppb	±100.0ppb	±200.0ppb
0°C ~ +50	√	√	√	√	√	√
-10°C ~ +60	√	√	√	√	√	√
-20°C ~ +70	√	√	√	√	√	√
-30°C ~ +70	Enquire	√	√	√	√	√
-40°C ~ +75	Enquire	Enquire	√	√	√	√
-40°C ~ +85	Enquire	Enquire	√	√	√	√
-55°C ~ +85	X	Enquire	Enquire	√	√	√

Mechanical dimensions and Pin functions



Pin connections

Pin #	Symbol	Function
1	RF OUT	RF Output
2	OA	Oven Alarm Output
3	GND	Ground
4	VREF	Reference Voltage
5	V _C	Control Voltage (EFC)
6	OE	Oscillator Enable Input
7	V _S	Supply Voltage

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Table 3: Environmental conditions

Test	IEC60068 part...	IEC 60679-1 Clause	MIL-STD-202G Method	MIL-PRF-810F Method	MIL-PRF-55310D Clause	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6	112E		3.6	Gross leak: Test QC, Fine leak : Test QK
Solderability resistance to soldering heat	2-20 2-58	5.6	208H 210F		3.6.52 3.6.48	Test Ta Method 1 Test Td1 Method 2 Test Td2 Method 2
Shock	2-27	5.6.8	213B	516.4	3.6	Test Ea, 3 x per axes 100g, 6 ms half sine pulse
Vibration, sinusoidal	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axes, 10Hz - 55Hz 0, 75mm; 55Hz-2kHz, 10g
Vibration, random	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance Tests -Ageing - extended aging		5.7.1 5.7.2	108A		4.8	30 days @ 85°C, OCXO @ 25°C 1000h, 2000h, 8000h @ 85°C

ACT part number

ACT will provide a unique part number with full specification based on your requirements, please provide the following details.

ACT series	Frequency (MHz)	Supply voltage (V)	Output type	Frequency stability (ppb)	Operating temperature range (°C)	Phase noise
OX1640						Option A Option B Option C

Drawing control: (Internal use only)
Issue number: 2
Date: 09/11/2017
Internal reference: O1