

OX540 Series



Ultra low phase noise OCXO, Sine wave, 25.8 x 25.8 x12.7mm

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

Output characteristics			
Parameter	Specification		Remarks/Test condition
Frequency range	80.0MHz ~ 125.0MHz		Standard: 100MHz, 120MHz
Supply voltage (Vs)	12.0V typical		Min: 11.4V, Max: 12.6V
Warm-up current consumption	350mA max		Higher for wide temperature range
Steady state current consumption	150mA max		Higher for wide temperature range
RF output			
Output waveform	Sine wave		
Output load	50.0Ω		±5%
Output level	Min: +7dBm		
Harmonics	-30.0dBc max		
Spurious	-90.0dBc max		@ 9 ~ 11MHz
Warm-up time at +25°C	Max: 5.0min, Typical: 3.0min		Δf final/ fnominal < ±100.0ppb
Phase noise	See table 2		
G-sensitivity	1.0ppb/g		Per axis
Frequency stability (Typical, @ 10.00MHz)			
Initial tolerance	±300.0ppb max		At +25°C, Vc @ Vref/2
vs Operating temperature range	±5.0ppb ~ ±200.0ppb		Table 1
vs Supply voltage variation	±10.0ppb max		Vcc ± 5%
vs Load change	±5.0ppb max		RL ± 5%
Long term aging/day	±1.0ppb typical, ±2.0ppb max		After 30 days operation
Long term aging 1 st year	±100.0ppb typical, ±200.0ppb max		After 30 days operation
Frequency adjustment range			
Electronic frequency control (EFC)	Min: ±1.0ppm, typical: ±2.0ppm		
Reference voltage VREF output	10.0V		Other available on request
EFC voltage Vc	5.0V ± 5.0V		
EFC slope	Positive		
EFC input impedance	100.0kΩ min		
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

Table 1: Phase noise (Unit: dBc/Hz)										
Offset	100.0MHz					120.0MHz				
	Option A	Option B	Option C	Option D	Option E	Option A	Option B	Option C	Option D	Option E
10 Hz	-90	-95	-97	-100	-105	-85	-90	-95	-97	-100
100 Hz	-125	-130	-132	-135	-137	-118	-122	-125	-127	-130
1k Hz	-155	-158	-160	-162	-164	-148	-150	-153	-155	-157
10 kHz	-165	-168	-170	-172	-174	-160	-165	-168	-170	-172
≥100 kHz	-175	-175	-175	-175	-175	-175	-175	-175	-175	-175

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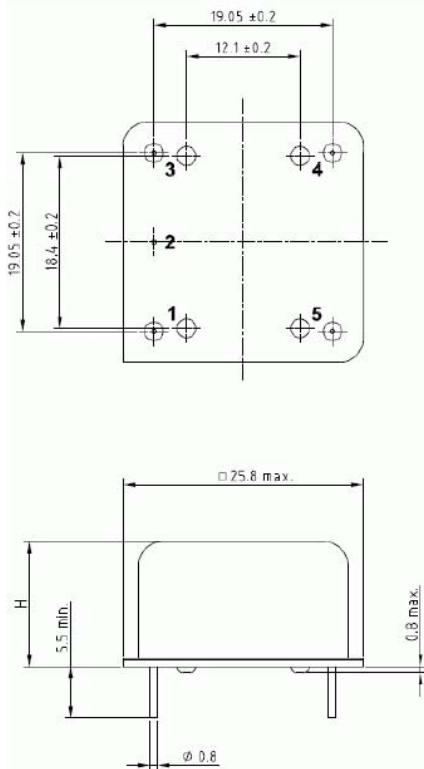
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Table 2: Frequency stability vs operating temperature range

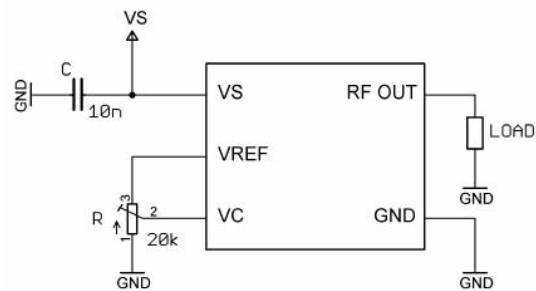
Temperature (°C)	±5.0ppb	±10.0ppb	±25.0ppb	±50.0ppb	±100.0ppb	±200.0ppb
0°C ~ +50	Enquire	√	√	√	√	√
-10°C ~ +60	Enquire	√	√	√	√	√
-20°C ~ +70	Enquire	√	√	√	√	√
-30°C ~ +70	Enquire	Enquire	√	√	√	√
-40°C ~ +75	X	Enquire	√	√	√	√
-40°C ~ +85	X	X	Enquire	√	√	√
-55°C ~ +85	X	X	Enquire	√	√	√

Mechanical dimensions and Pin functions



Pin connections

Pin #	Symbol	Function
1	RF OUT	RF Output
2	GND	Ground
3	V _C	Control Voltage (EFC)
4	VREF	Reference Voltage
5	V _S	Supply Voltage



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
OX540						Option A Option B Option C Option D

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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

Drawing control: (Internal use only)
Issue number: 1
Date: 01/06/2017
Internal reference: O1