

SPACE OCXO

Space qualified OCXO – Oven Controlled Crystal Oscillator, Flat pack
General Specification (rev1)

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December, 5th 2007

▣ Features

- Frequency Range : 30 MHz to 100 MHz
- Low consumption
- Supply Voltage : +9V or +12V
- Warm up Consumption : 2Watt
- Maximum Steady state Consumption under vacuum : 0.65 Watt
- Overall Frequency Stability vs. Operating Temperature Range from +/- 0.2 ppm to +/- 0.5 ppm under vacuum
- Ageing per year : +/- 0.3 ppm ; +/- 2 ppm over 15 years typical
- Output Wave Form : sine 50 Ohms
- Output Level : from 0 to 8 dBm
- Compatible with Flatpack TCXO pin-out : 25 x 25 mm
- Manufacturing in accordance with MIL-PRF-55310 (Class 1, type 4, level S)
- Based on SMD Discrete components technology

▣ Applications

Recommended for frequency reference

▣ Environmental conditions

Parameters	Unit	Minimum	Typical	Maximum
Operating temperature range	°C	- 20		+ 70
Storage temperature range	°C	- 55		+ 125
Shocks (half sine)		900g, 0.3ms		
Sine vibration		20g as per MIL-STD-202, Method 204, Condition D		
Random vibration		50 Grms as per MIL-STD-202, Method 214, Condition I-F		
Radiation		Up to 100 kRad total dose		

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Mechanical characteristics

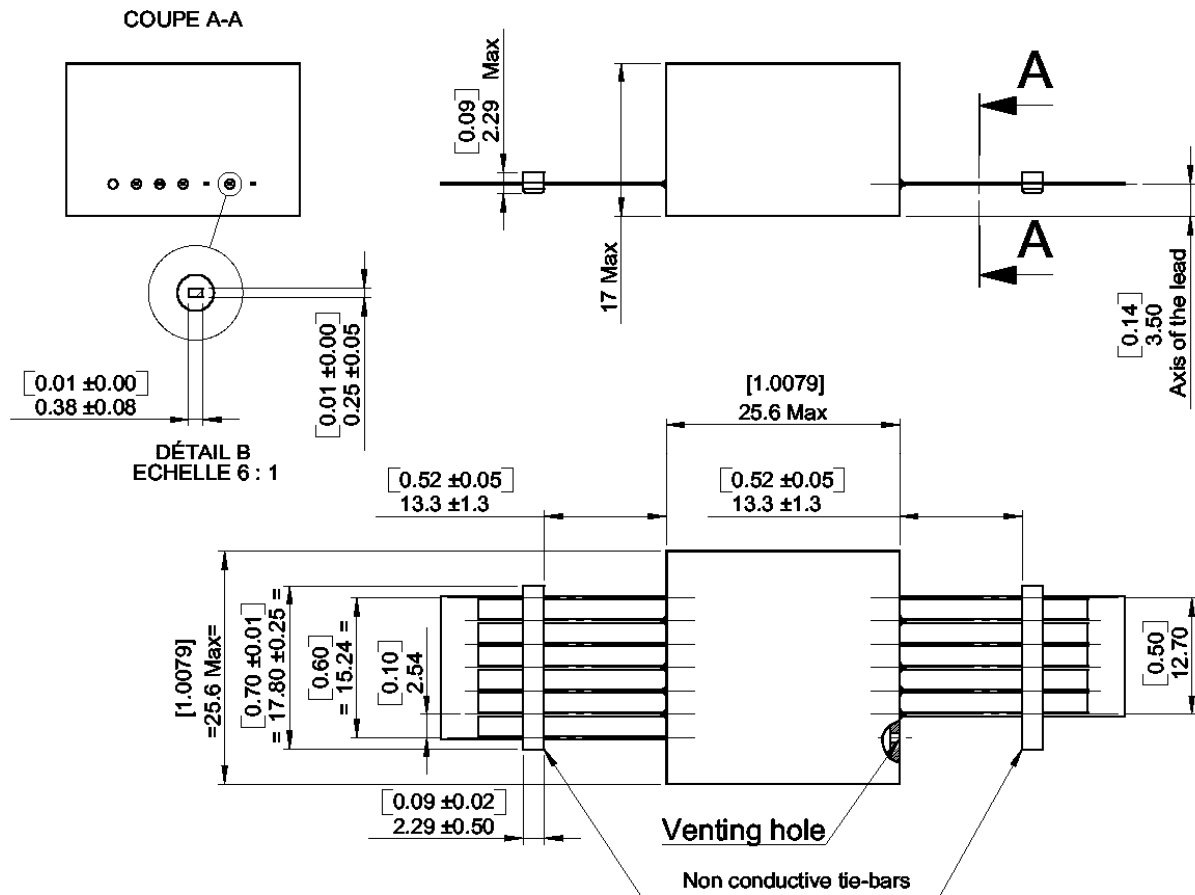


Figure 1 : Oscillator outline

Pin description

Pin number	Name	Function
1-3	GND	Electrical & Mechanical Ground
2	Vcc	Supply Voltage
4 – 5 – 8 – 9 – 10 - 11	NC	
6	Vc	Voltage control for electric tuning
13	Fout	Frequency Output

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□ Performance characteristics

Electrical Parameters	Unit	Minimum	Typical	Maximum
Frequency output				
Nominal frequency range	MHz	30	40	100
Output level (50 Ω load)	dBm	0		8
Harmonics level	dBc			- 25
Spurious (offset > 50 Hz)	dBc			- 80
Phase noise in static conditions @ 100 MHz				
@ 1 Hz offset	dBc/Hz			-55
@ 10 Hz offset	dBc/Hz			-85
@ 100 Hz offset	dBc/Hz			- 115
@ 1 kHz offset	dBc/Hz			- 145
@ 10 kHz offset or greater	dBc/Hz			- 155
Allan variance				
@ 1s	ppb			0.02
Free running mode (Vctrl pin NC)				
Initial setting	ppm			0.25
Stability vs. temperature	ppm		0.2	0.5
Stability vs. 5 % supply voltage variation	ppm			0.01
Stability vs. 10 % load variation	ppm			0.01
Aging over first year	ppm			0.3
Aging over 15 years	ppm			2
Electrical tuning (Vctrl pin)				
Relative pulling frequency range	ppm	± 2.5		
Input impedance	Ω	10k		
Bandwidth	Hz	1k		
Linearity	%			20
Supply voltage (Vcc pin)				
Voltage range	V _{DC}	8.5	9	12.6
Supply power @ 25 °C under vacuum	W			0.65
Supply power @ warm up	W			2
Warm up time	mn			10