Features and Benefits

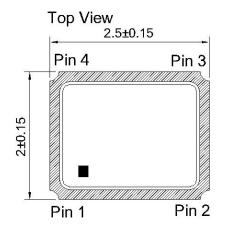
Better than +/-0.5PPM from -40°C to +85°C 16.32MHz clipped sine wave output 3.3V supply, 1.5mA maximum current

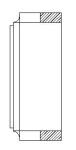
Typical Applications

Mobile SATCOM Mobile Radio Hand-carry Instrument Femto-cell

Mechanical Drawing & Pin Connections

Drawing No: MD150037-1





Pin Connection

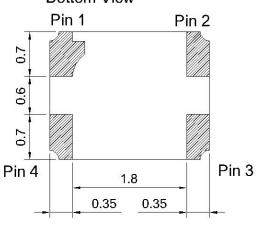
Name	Function
Pin 1	AFC
Pin 2	GND
Pin 3	OUTPUT
Pin 4	VCC

Unit: mm

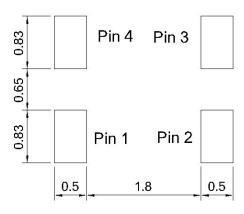
Side View







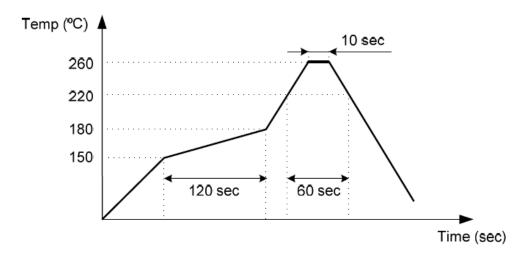
Recommended Land Pattren



Specification

Specification Spin Control Min. Typ. Max. Milk College Col	Oscillator	Sum	Condition		Value			Note		
Output Lever	Specification	Sym	Condition	Min.	Тур.	Max.	Unit	Note		
Output Level	Nominal Frequency	F _{nom}			16.320000	1	MHz			
Output Level Resistance 9 10 11 Kohm Output Cycle - Capacitance 9 10 11 pF Duty Cycle - 45 50 60 % Fover Supply Voltage V ₂ 3.135 3.3 3.465 V Supply Voltage V ₂ 0 1.65 3.3 V Frequency Stability 0 1.65 3.3 V Vis. The Front 40°C to +85°C +1.65 9 ppm VCON at 1.65 Frequency Stability Front 40°C to +85°C +1.65 ppm VCON at 1.65 VS. Supply Voltage 4.6 4.6 ppm VCON at 1.65										
Capacitance 9 10 11 pF				0.8	<u> </u>		V			
Duty Croke Capscrance 9	Outrout Load		Resistance	9	10	11	Kohm			
Supply Voltage	Output Load		Capacitance	9	10	11	pF			
Supply Voltage	Duty Cycle			45	50	60	%			
Supply Current	Power Supply									
Control Vottage Range	Supply Voltage	V _{cc}		3.135	3.3	3.465	V			
Control Voltage Range	Supply Current					1.5	mA			
3.3V	Frequency Control*									
Tuning Range	Control Voltage Range	V_c		0	1.65	3.3	V			
Prequency Stability From 40°C to +85°C			3.3V	+9		+15				
VS. Emperature From -40°C to +85°C 4-6.5 ppm Protection at +25°C At shipping 4-6.1.5 ppm Protection at +25°C At shipping 4-6.1.5 ppm Protection at +25°C At shipping 4-6.1.5 ppm Protection at +25°C At shipping 4-6.2 ppm Protection at +6.2 ppm Pro			0V	-15		-9	ppm			
At shipping	. , ,									
After Zümes reflow	VS. Temperature						ppm			
VS. Supply Voltage	Tolerance at +25°C						ppm			
VS. Load Change										
First year at 25°C										
Slop of Frequency Drift over Temperature		-			-					
Phase Noise (typ.)		-	⊢irst year at 25°C			+/-1.0	ppm			
Phase Noise (typ.)						+/-0.3	ppm/°C			
Phase Noise (typ.)	геттрегаците		@10 Hz		_01					
Phase Noise (typ.)						+				
	Phase Noise (typ.)						dBc/Hz			
Parameter	Thase Noise (typ.)						UDC/112			
Parameter										
Ad0°C to +85°C			@1001K12		101					
Storage Temperature range	Parameter	Test M	ethods		Criteria					
Height: 100cm height Direction: X,Y,Z 6 directions Test cycles: 3 cycles Fall freely on to concrete floor Mounting on test fixture(total weight=100 g) Acceleration: 1000g Duration: 0.5ms Test cycles: 3 times for all 3 directions +/-2.0 ppm +/-2.0 ppm Test cycles: 3 times for all 3 directions +/-2.0 ppm	Operating Temperature range	-40°C t	o +85°C							
Direction: X,Y,Z 6 directions Test cycles: 3 cycles Fall freely on to concrete floor Mounting on test fixture(total weight=100 g) Mechanical Shock Acceleration: 1000g Duration: 0.5ms Test cycles: 3 times for all 3 directions Trequency range: 10 to 2000Hz Amplitude: 1.52mm(10 to 80Hz) Acceleration: 20g(80 to 2000Hz) Acceleration: 20g(80 to 2000Hz) Sweep speed: 20 minutes/cycle Direction: X,Y,Z 3 directions Duration: 4 hours/each direction Duration: 4 hours/each direction Duration: 4 hours/each direction Test pressure: 2kg/cm² Test pressure: 2kg/cm² 4.5 kg/f cm² for 2 hours 4.0x10³ Pa m³/sec Fine Leak Helium bomging 4.5 kg/f cm² for 2 hours 4.1.0x10³ Pa m³/sec Freheat time; 120 sec Soldering temperature: 245°C+/-5°C Preheat time; 120 sec Soldering temperature: 245°C+/-5°C Duration: 5+/-1sec Method: Solder bath method Duration: 168 hours Temperature: 40°C ± 3°C 4/- 2.0 ppm Duration: 500 hours Temperature: 45°C ± 3°C 4/- 2.0 ppm Temperature: 55°C ± 3°C 4/- 2.0 ppm Temperature: 25°C ± 3°C 4/- 2.0 ppm 4/- 2.0 ppm Temperature: 25°C ± 3°C 4/- 2.0 ppm Temperature: 25°C ±	Storage Temperature range									
Test cycles: 3 cycles Fall freely on to concrete floor Mounting on test fixture(total weight=100 g) Acceleration: 1000g Duration: 0.5ms Test cycles: 3 times for all 3 directions +/-2.0 ppm Test cycles: 3 times for all 3 directions Trequency range: 10 to 2000Hz Amplitude: 1.52mm(10 to 80Hz) Acceleration: 20g(80 to 2000Hz)										
Fall freely on to concrete floor Mounting on test fixture(total weight=100 g)	Drop Test									
Mounting on test fixture(total weight=100 g)				+/-2.0 ppm						
Acceleration: 1000g Duration: 0.5ms Temperature: 40°C ± 3°C Duration: 5.5ms										
Mechanical Shock Duration: 0.5ms Test cycles: 3 times for all 3 directions +/-2.0 ppm Vibration Frequency range: 10 to 2000Hz Amplitude: 1.52mm(10 to 80Hz) Acceleration: 20g(80 to 2000Hz) Sweep speed: 20 minutes/cycle Direction: X,Y,Z 3 directions Duration: 4 hours/each direction +/-2.0 ppm Gross Leak Standard sample for automatic gross leak detector Test pressure: 2kg/cm² <1.5x10-6 Pa m³/sec										
Test cycles: 3 times for all 3 directions	Mechanical Shock					+/-2.0 ppm				
Frequency range: 10 to 2000Hz	Wicorianical Chock									
Vibration Amplitude: 1.52mm(10 to 80Hz) Acceleration: 20g(80 to 2000Hz) Sweep speed: 20 minutes/cycle Direction: X,Y,Z 3 directions Duration: 4 hours/each direction +/-2.0 ppm Gross Leak Standard sample for automatic gross leak detector Test pressure: 2kg/cm² <1.5x10⁻⁶ Pa m³/sec										
Sweep speed: 20 minutes/cycle Direction: X,Y,Z 3 directions Duration: 4 hours/each direction Standard sample for automatic gross leak detector Test pressure: 2kg/cm² <1.5x10⁻⁵ Pa m³/sec										
Sweep speed: 20 minutes/cycle Direction: X,Y,Z 3 directions Duration: 4 hours/each direction Standard sample for automatic gross leak detector Test pressure: 2kg/cm² Fine Leak Helium bomging 4.5 kgf/ cm² for 2 hours Preheat temperature: 125°C+/-5°C Preheat time: 120 sec Solder Ability Soldering temperature: 245°C+/-5°C Duration: 5+/-1sec Method: Solder bath method High Temp. Storage Temperature: +125°C ± 3°C Duration: 500 hours Temperature: 40°C ± 3°C Duration: 500 hours Temperature: 85°C ± 3°C High Temp& Humidity Temperature: 85°C ± 3°C Duration: 168 hours Temperature: 85°C ± 3°C Duration: 500 hours Temperature: 85°C ± 3°C	Vibration			+/-2.0 ppm						
Duration: 4 hours/each direction	Vibration									
Gross Leak Standard sample for automatic gross leak detector Test pressure: 2kg/cm² <1.5x10⁻⁵ Pa m³/sec										
Test pressure: 2kg/cm²			Other dead accords for automotic annual selections							
Fine Leak	Gross Leak	Standa	Standard sample for automatic gross leak detector			<1.5x10 ⁻⁵ Pa m ³ /sec				
Preheat temperature: 125°C+/-5°C Preheat time: 120 sec Soldering temperature: 245°C+/-5°C 90% Coated	Fine Leak	Halium	Helium homaing 4.5 kgf/ cm ² for 2 hours			<1.0x10 ⁻⁹ Pa m ³ /sec				
Solder Ability Preheat time: 120 sec Soldering temperature: 245°C+/-5°C Duration: 5+/-1sec Method: Solder bath method High Temp. Storage Temperature: +125°C ± 3°C Duration: 168 hours Low Temp. Storage Temperature: -40°C ± 3°C Duration: 500 hours Temperature: 85°C ± 3°C Humidity: RH 85% Duration: 168 hours Temperature: 85°C ± 3°C Humidity: RH 85% Duration: 168 hours Temperature: 85°C ± 3°C Duration: 500 hours Temperature: 85°C ± 3°C Duration: 150 hours Temperature: 85°C ± 3°C Duration: 500 hours Temperature: 85°C ± 3°C Duration: 500 hours Temperature: 85°C ± 3°C Duration: 500 hours	I IIIC LEAK	Prehea	t temperature: 125°C+/-5°C		TI.UATU FAI	11 /300				
Solder Ability Soldering temperature: 245°C+/-5°C Duration: 5+/-1sec Method: Solder bath method High Temp. Storage Temperature: +125°C ± 3°C Duration: 168 hours Low Temp. Storage Temperature: -40°C ± 3°C Duration: 500 hours Temperature: 85°C ± 3°C Humidity: RH 85% Duration: 168 hours Temperature: 85°C ± 3°C Humidity: RH 85% Duration: 168 hours Temperature: 85°C ± 3°C Duration: 1500 hours Temperature: 85°C ± 3°C Duration: 1500 hours Temperature: 85°C ± 3°C Duration: 500 hours Temperature: 85°C ± 3°C Duration: 500 hours Temperature: 85°C ± 3°C Duration: 500 hours	Solder Ability		•							
Duration: 5+/-1sec Method: Solder bath method High Temp. Storage Temperature: +125°C ± 3°C +/- 2.0 ppm Low Temp. Storage Temperature: -40°C ± 3°C +/- 2.0 ppm High Temp& Humidity Temperature: 85°C ± 3°C +/- 2.0 ppm Humidity: RH 85% +/- 2.0 ppm Duration: 168 hours +/- 2.0 ppm Aging Duration: 500 hours +/- 2.0 ppm										
High Temp. StorageTemperature: $+125^{\circ}C \pm 3^{\circ}C$ Duration: 168 hours $+/-2.0$ ppmLow Temp. StorageTemperature: $-40^{\circ}C \pm 3^{\circ}C$ Duration: 500 hours $+/-2.0$ ppmHigh Temp& HumidityTemperature: $85^{\circ}C \pm 3^{\circ}C$ Humidity: RH 85% Duration: 168 hours $+/-2.0$ ppmAgingTemperature: $85^{\circ}C \pm 3^{\circ}C$ Duration: 500 hours $+/-2.0$ ppm										
Duration : 168 hours		_								
Duration : 168 hours						+/- 2.0 ppm				
Duration : 500 hours	Duration : 16									
High Temp & Humidity	Low Temp. Storage					+/- 2.0 ppm				
High Temp & Humidity Humidity: RH 85% Duration : 168 hours +/- 2.0 ppm Aging Temperature : 85°C ± 3°C Duration : 500 hours +/- 2.0 ppm	High Temp&Humidity									
Duration : 168 hours Temperature : 85°C ± 3°C Aging Duration : 500 hours +/- 2.0 ppm										
Aging Temperature : 85°C ± 3°C	g cp correlationty									
Aging Duration: 500 hours +/- 2.0 ppm										
	Aging				+/- 2.0 ppm					
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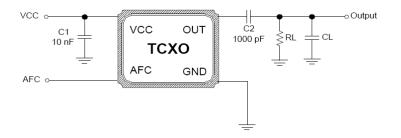
Suggested Reflow Profile



Note 1: Period while temperature exceeds the solder melting point : 220°C should be less than 200 se

Note 2: Period while temperature stays at the top melting point : 260°C should be less than 30 sec.

Test Circuit



External Components

Name	Function
C1	AC Noise Bypass for VCC
C2	DC Block for Output
RL	Load Resistance
CL	Load Capacitance