



Features and Benefits

- 5V supply
- 10 MHz frequency
- Up to ± 3 ppb total stability over -40°C to $+85^{\circ}\text{C}$

Typical Applications

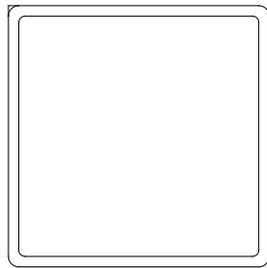
- Telecommunication devices
- Mobile radio

Description

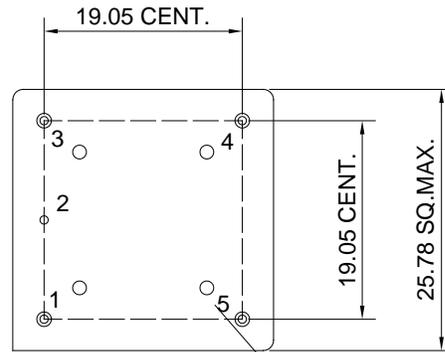
A new series of high stability oven controlled oscillators with the latest integrated circuits topologies.

Mechanical Drawing & Pin Connections

Drawing No:MD160042-1

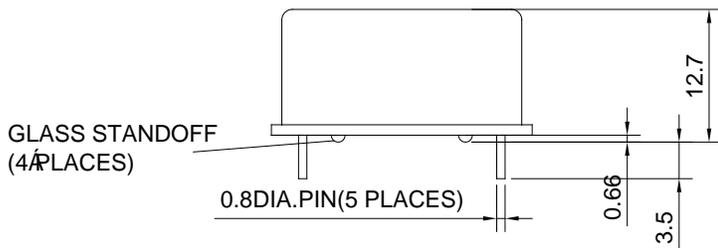


VIEW FROM TOP



VIEW FROM BOTTOM

NUMBERS FOR REFERENCE ONLY
(NOT STAMPED ON UNIT)



Pin	Signal
1	R.F. OUTPUT
2	0 VOLTS&CASE
3	VCO INPUT
4	REFERENCE VOLTAGE
5	+V Supply

Unit: mm
1mm=0.039inch



Specifications

1. Output (PIN = "R.F. OUTPUT")			
Parameter	Min.	Typ.	Max.
Frequency Range	10 MHz		
Initial Accuracy at +25°C ±1°C, after turn on power 15 ±1 minutes ≤ 90 days following date code VCO input at center voltage ±0.001V	-0.1 ppm		0.1 ppm
Waveform	Rectangular		
Level	LVTTTL		
"1" level	+2.6V	3.3V	
"0" level			+0.4V
Load	15 pF		
Duty Cycle @ +1.65V	45%	50%	55%
Rise / fall time 10% to 90%			6 ns
Spurious			-60 dBc

2. Frequency Stability			
Parameter	Min.	Typ.	Max.
Ambient referenced at 25°C	±3 ppb, ±5 ppb, ±10 ppb		
Operating temperature referenced at 25°C	-30°C to +70°C -40°C to +85°C		
Aging per day at time of shipment Daily after 30 days Yearly 10 Years	-0.5 ppb -0.5 ppb -50 ppb -0.3 ppm		+0.5 ppb +0.5 ppb +50 ppb +0.3 ppm
Voltage ±5% change	-0.5 ppb		+0.5 ppb
Short term root Allan variance			0.05 ppb/s
Load ±5% change	-0.5 ppb		+0.5 ppb
Warm-up in 10 minutes @ +25 ±1°C referenced to 1 hour	-10 ppb		+10 ppb
Phase Noise (@25°C) @1Hz @10Hz @100Hz @1KHz @10KHz @100KHz		-95 dBc/Hz -125 dBc/Hz -140 dBc/Hz -148 dBc/Hz -156 dBc/Hz -158 dBc/Hz	-90dBc/Hz -120dBc/Hz -135dBc/Hz -145dBc/Hz -155dBc/Hz -155dBc/Hz



3. Electrical Frequency Adjustment (PIN = "VCO INPUT")			
Parameter	Min.	Typ.	Max.
Tuning Range referenced to frequency at nominal Center Voltage VCO @ Min. Voltage VCO @ Max. Voltage	+0.5 ppm		-0.5 ppm
Control Voltage	0 0		+5V +4V
Slope		Positive	
Center Voltage		+2.5V +2.0V	
Linearity	-10%		+10%
Input impedance	100 kΩ		

4. Input Power (PIN = "+VDC")			
Parameter	Min.	Typ.	Max.
Voltage	+4.75V	+5.0V	+5.25V
Current @ turn on			800 mA
Steady State @ +25°C			1.3 W

5. Reference Voltage (PIN = "Reference Voltage")			
Parameter	Min.	Typ.	Max.
Voltage over -40°C to +85°C	+3.8V	+4.0V	+4.2V
Load over -40°C to +85°C	9 kΩ		

6. Environmental		
Parameter	Reference standard	Condition
Operating temperature	-40°C to +85°C	
Storage temperature	-55°C to +105°C	
Humidity	MIL-STD-202, Method 103 Test Condition A	95% RH @ +40°C, non-condensing, 240 hours
Vibration (non-operating)	MIL-STD-202, Method 201	0.06" Total p-p, 10 to 55 Hz
Shock (non-operating)	MIL-STD-202, Method 213 Test Condition J	30g, 11ms, half-sine

Temperature Range vs. Stability Availability					
Temperature range (°C)	Stability and Voltage			Control Voltage	Reference Voltage
	±3ppb	±5ppb	±10ppb		
-30 to +70	Available	Available	Available	2.5V	Not available
-40 to +85	Available	Available	Available	2.5V	Not available
-30 to +70	Available	Available	Available	2.0V	4.0V
-40 to +85	Available	Available	Available	2.0V	4.0V

Please contact Dynamic Engineers Inc. for further details.