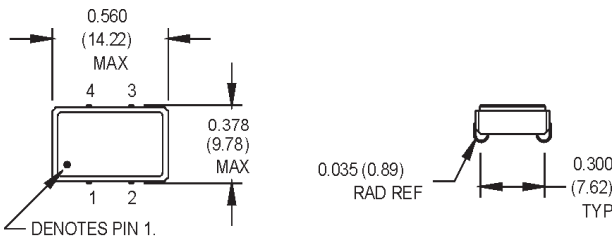


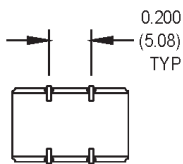
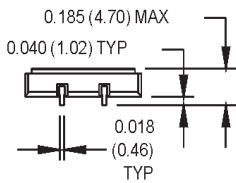
MIL-PRF-55310 QPL Oscillators

Oscillators qualified under MIL-PRF-55310

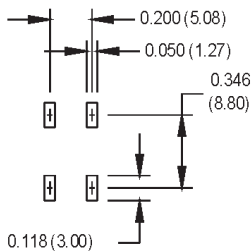
Oscillator designs requiring military approval fall into two categories, those which have been subjected to formal QPL qualification under MIL-PRF-55310 and others too new and/or too limited in quantity to have been so certified or are built to customers' SCD (Source Controlled Document). MtronPTI does both in a MIL-STD-790 certified facility.



All dimensions in inches (mm).



SUGGESTED SOLDER PAD LAYOUT



PIN	FUNCTION
1	Tristate
2	Ground
3	Output
4	Vdd

Ordering Information

00.0000
MHz

M55310/30- M 11 A T

Product Series _____

Military Designation _____

Product Level _____

B: Military
C: Commercial

Electrical Specs _____

11: See table below
14: See table below

Stability Option/Temp Range _____

A: See table below
B: See table below
C: See table below

Leads _____

T: Tin solder (standard)
*Blank: Customer specified

Frequency (customer specified) _____

*Contact factory for other non-QPL lead finishes

Dash Numbers and Operating Characteristics					
Dash Number	Output Frequency Range	Initial Accuracy at +23°C ±1°C	Frequency-Temperature Stability (ppm) 1/		
			-55°C to +125°C	-55°C to +105°C	-20°C to +70°C
			A	B	C
11	15.000 MHz to 29.999 MHz	±15 ppm	±50 ppm	±40 ppm	±25 ppm
14	15.000 MHz to 29.999 MHz	±25 ppm	±100 ppm	±80 ppm	±50 ppm

1/ Temperature range A applicable for product level B oscillators only.

QPL PRODUCT LEVEL B 100% SCREENING	
Test Inspection	Method or Condition
Internal Visual	MIL-STD-883, method 2017 and 2032
Stabilization bake (prior to seal)	MIL-STD-883, method 1008, condition C (+150°C), 24 hours minimum
Temperature cycling	MIL-STD-883, method 1010, condition B
Constant acceleration	MIL-STD-883, method 2001, condition A, Y1 only (5000 g's)
Seal (fine and gross Leak)	MIL-STD-883, method 1014
Electrical test	ATE (ambient)
Burn-in (load)	+125°C, nominal supply voltage and burn-in load, 160 hours minimum
Electrical test	Nominal supply voltage, specified load, +23°C and verify frequency at the temperature extremes.

MtronPTI reserves the right to make changes to the product(s) and service(s) described herein without notice. No liability is assumed as a result of their use or application.

Please see www.mtronpti.com for our complete offering and detailed datasheets. Contact us for your application specific requirements: MtronPTI 1-800-762-8800.

MIL-PRF-55310 QPL Oscillators

For reference only. See MIL-PRF-55310/30 for current actual requirements.

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	15		29,999	MHz	
Storage Temperature	Ts	-62		+125	°C	
Aging						
Per Year			±1.5	±10	ppm	
Per 30 Days			±3		ppm	
Per 90 Days					ppm	
Supply Voltage		+3.3 V dc ±10 percent				
Input Current	I _{dd}			10	mA	See note 1
Frequency vs. Voltage Stability		±4 ppm maximum for a ±10 % change in supply voltage				
Duty Cycle		45		55	%	See figure 2
Logic "1" Level	V _{oh}	90% V _{dd}			V	See figure 2
Logic "0" Level	V _{ol}			10% V _{dd}	V	See figure 2
Rise/Fall Time	T _r /T _f			10	ns	See figure 2
Start up Time				10	ms	
Ambient Pressure	Nonoperating – MIL-PRF-55310, Operating – Method 105 of MIL-STD-202, test condition C, exposure time 5 minutes					
Terminal Strength	Method 211 of MIL-STD-202, test condition A, 8 ounces of force each terminal					
Mechanical Shock	MIL-STD-202, Method 213, C (100 g's)					
Vibration	MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)					
Thermal Cycle	MIL-STD-883, Method 1010, B (-55°C to +125°C, 15 min dwell, 10 cycles)					
Hermeticity	MIL-STD-202, Method 112					
Solderability	Per EIAJ-STD-002					
Reflow Soldering	+230°C ±10°C for 15 seconds					

1. Maximum input current for no load condition.

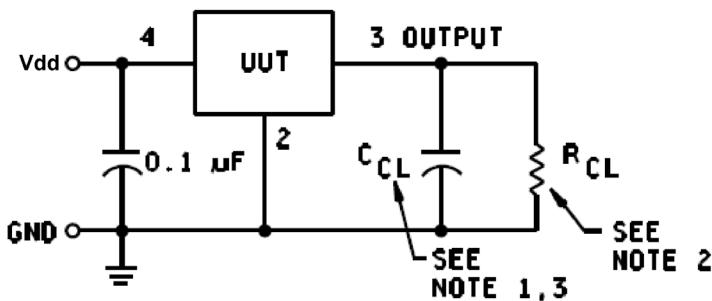


Figure 1: Test Circuit

1. For $C_{CL} = 15\text{pF} \pm 5\text{ percent}$
2. For $R_{CL} = 10\text{ k}\Omega \pm 5\text{ percent}$
3. C_{CL} includes scope capacitance

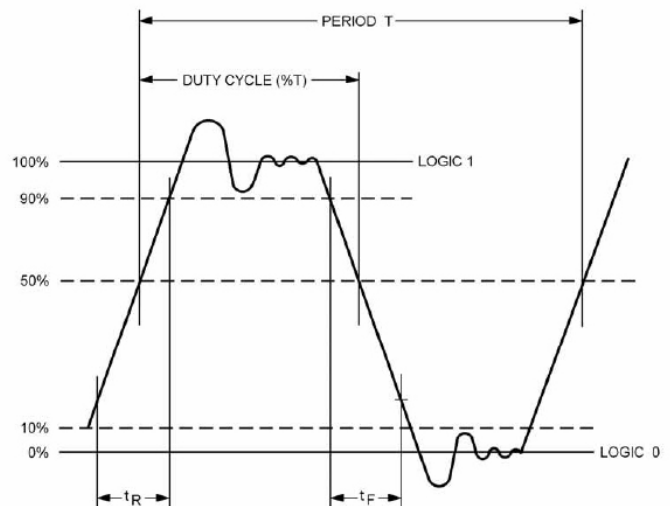


Figure 2: Output Waveform