MIL-55310/21-Series Specifications

0.650L x 0.650W x 0.120H (in)

PDI *MIL-PRF-55310/21* Oscillators are available in both standard and custom frequencies to provide precision timing in a hermetically sealed package for military and avionics applications.

ex) **M55310/21—B—22—A—25M00000**

MILITARY SLASH SHEET

PRODUCT LEVEL
B = Hi-Rel
C = Commercial

DASH NUMBER
See Chart Below

OPERATING TEMPERATURE
A = -55 to +125°C
B = -55 to +105°C
C = -20 to +70°C

XXXXXXXX
Specified Nominal Frequency

Dash No.	Frequency Range	Input Current (1) 5.25 V ±1% Max	Rise/Fall Times Max	Duty Cycle @ 1.4 Vdc	Load (2) Max	Initial Accuracy @ 23°C ppm Max	Aging Per Year ppm Max	Operating Temperature (A)	(B)	(C)
01	1 MHz to 5 MHz	70 mA	15 nS	40 to 60%	10 TTL	±15	±10	±50	±40	±25
02						±25	±10	±100	±75	±50
03						±25	±10	±200	±150	±100
11	5 MHz to 20 MHz	30 mA	15 nS	40 to 60%	10 TTL	±15	±10	±50	±40	±25
12						±25	±10	±100	±75	±50
13						±25	±10	±200	±150	±100
21	20 MHz to 60 MHz	65 mA	5 nS	40 to 60%	6 TTL	±15	±10	±50	±40	±25
22						±25	±10	±100	±75	±50
23						±25	±10	±200	±150	±100

Aging Per Year (Max) (Measurements shall be taken @+70°C ±0.2°C at intervals of not more than every 72 hours for 30 days minimum)	**±10 ppm**
Per 30 Days	±1.5 ppm
Per 90 Days	±3.0 ppm

NOTES:
(1) Maximum input current for no load condition. Actual configuration of TTL loads must be added to determine power supply requirements.
(2) A TTL unit load is defined as: 1.60 mA sink, 0.04 mA source, and 2.0 pF capacitance.

Environmental Specifications	
Vibration, sinusoidal	IAW MIL-PRF-55310 and MIL-STD-202 , Method 204 **Non-operating:** Test Condition G, **Operating:** Not Required
Ambient Pressure	**Non-operating:** IAW MIL-PRF-55310 , **Operating:** MIL-STD-202 , Method 105 , Condition C
Reflow Soldering	Reflow soldering of the unit @ +230°C ±10°C for 15 seconds shall not degrade the performance. Reflow soldering temperatures shall not be applied to the case, but to the ribbon leads only.

The product described in this spec. consist of this specification and MIL-PRF-55310.
Decimal XXX = ± .005, XX = ± .020 *Metric* [XXX = ± .13], [XX = ± .50]

Parameter		Frequency Range 1MHz to 60MHz	Units
Frequency Stability	vs Temperature (Max)		ppm
	-20 to +70°C (Type C)	Per Chart	
	-55 to +105°C (Type B)	Per Chart	
	-55 to +125°C (Type A)	Per Chart	
	vs Supply Voltage (Max. for a 10% change) (Measurements taken at reference temperature and operating temperature range end points)	±4.0	
	Tolerance (@ +23°C ± 1.0°C) (Max) Within 30 Days of Shipment	Per Chart	
Temperature Range	Operating	Per Chart	°C
	Storage	-62 to +125	
Supply Voltage	±10.0 %	+5.0	Vdc
Output		TTL	
Logic Levels	High (Min)	2.4	Vdc
	Low (Max)	0.5	

Test Inspection	Product Level B Method Condition
Internal Visual	MIL-STD-883, Method 2017 and 2032
Stabization bake (prior to seal) 1/	MIL-STD-883, Method 1011, Condition C (+150°C) 48 hours min.
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) 2/	MIL-STD-883, Method 1014
Burn-In (Load)	+125C, nominal supply voltage and burn-in load, 160 hours minimum
Electrical Test:	Nominal supply voltages, specified load, +23°C and verify frequency at the temperature extremes
Input Current Power	4.8.5 of MIL-PRF-55310
Output Waveform	4.8.20 of MIL-PRF-55310
Output Voltage-Power	4.8.21 of MIL-PRF-55310
As Specified	3.1 of MIL-PRF-55310

PRECISION DEVICES INC

PACKAGE DIMENSIONS

PIN	CONNECTION
1-9	No Connect
10	Ground/Case
11	Output
12	No Connect
13	Supply Voltage*
14-19	No Connect
20	Supply Voltage*

* - Unit shall meet all requirements with pin 13 and pin 20 simultaneously tied to supply voltage.