

Dynamic Engineers Inc.

2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA TEL: 1-281-870-8822 EMAIL: Sales@DynamicEng.com

TM5151BM-10MHz-A

Ultra High Precision Disciplined Oscillator

Features and Benefits

Frequency: 10MHz Supply voltage: 3.3V Warm-up power: 8.8W Max Output waveform: CMOS Temperature stability: ±0.1ppb

Accuracy: ±1x10⁻¹²

Operating temperature: -10°C to +70°C

Size: 50.8x50.8x24.0mm

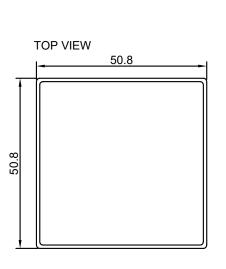
Typical Applications

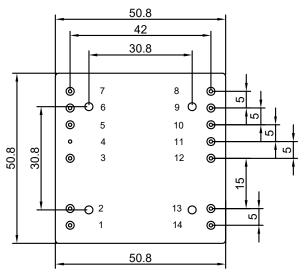
5G Telecommunication, Base Station Smart Power Grid Test and Measurement Equipment

Mechanical Drawing & Pin Connections

Drawing No:

MD220041-1



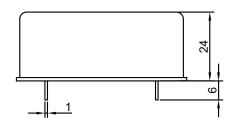


BOTTOM VIEW

Pin Connections:

1 N.C. 2 N.C. 3 Vcc 4 GND 5 1PPS Lock Indicator 1=Lock; 0= Not Locked 6 RX 7 TX Enable 1=1PPS good, enable discipline 0=1PPS not good, do not discipline 0=1PPS not good, do not discipline 0=1PPS Input 9 N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND 14 RF Output	Pin#	Function
3 Vcc 4 GND 5 1PPS Lock Indicator 1=Lock; 0= Not Locked 6 RX 7 TX Enable 8 1=1PPS good, enable discipline 0=1PPS not good, do not discipline 9 N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND	1	N.C.
4 GND 5 1PPS Lock Indicator 1=Lock; 0= Not Locked 6 RX 7 TX Enable 8 1=1PPS good, enable discipline 0=1PPS not good, do not discipline 9 N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND	2	N.C.
5 1PPS Lock Indicator 1=Lock; 0= Not Locked 6 RX 7 TX Enable 8 1=1PPS good, enable discipline 0=1PPS not good, do not discipline 9 N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND	3	Vcc
5 1=Lock; 0= Not Locked 6 RX 7 TX Enable 8 1=1PPS good, enable discipline 9 N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND	4	GND
1=Lock; 0= Not Locked RX TX Enable 1=1PPS good, enable discipline 0=1PPS not good, do not discipline N.C. N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND	5	1PPS Lock Indicator
TX Enable 1=1PPS good, enable discipline 0=1PPS not good, do not discipline 9 N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND	5	1=Lock; 0= Not Locked
Enable 1=1PPS good, enable discipline 0=1PPS not good, do not discipline 9 N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND	6	RX
8 1=1PPS good, enable discipline 0=1PPS not good, do not discipline 9 N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND	7	TX
0=1PPS not good, do not discipline 9		Enable
9 N.C. 10 1PPS Input 11 GND 12 1PPS Output 13 GND	8	•
10 1PPS Input 11 GND 12 1PPS Output 13 GND		0=1PPS not good, do not discipline
11 GND 12 1PPS Output 13 GND	9	N.C.
12 1PPS Output 13 GND	10	1PPS Input
13 GND	11	GND
**	12	1PPS Output
14 RF Output	13	GND
	14	RF Output

SIDE VIEW



Unit in mm 1mm = 0.0394 inches



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Specifications

Specification	Sym	Condition	Min.	Value Typ.	Max.	Unit	Note	
Operational Frequency	F _{nom}			10		MHz	5MHz is avaliable	
RF Output			,		,			
Output wave form				3.3V CMOS				
Output Level	V _{OL} V _{OH}		2.7		0.4	V		
Duty Cycle	V OH		40		60	%		
Rise/Fall time			70		10	ns		
Load				10Mohm//10p		110		
1 PPS Time Output				TOWNSTILL TO P	.1			
1 PPS				1		Hz		
Output amplitude				3.3V CMOS				
Pulse width				20		us		
Rise/Fall time					10	ns		
Load				10Mohm//10p				
1 PPS Time Input								
1 PPS			1			Hz		
Input amplitude			3.3V CMOS					
Input impedance			10Mohm//10pF					
Timing edge			Rising edge					
Digital Communications								
Protocol			RS-232					
Logic level			3.3V CMOS					
Baud Rate			57600			bps		
Power Supply	1	T		1	1		T	
Supply Voltage			4.75	5.0	5.25	V		
Warm-up power					8.8	W		
Steady power		At 25°C ambient			2.55	W		
Warm-up Time		To ±5ppb			5	min		
Frequency Stability					,			
Versus Operating Temperature Range		-10°C to +70°C			±0.1	ppb		
Frequency Accuracy		24 hours average, locked to 1pps			±1	10 ⁻¹²		
24 hours Holdover		±10°C, after 7 days power on and 1 day discipline. Temperature variance below 1°C/minute			1.5	us		
Acceleration Sensitivity	1			1	±1	ppb/g		
		1Hz		ļ	-100	dBc/Hz		
		10Hz			-125	dBc/Hz		
Phase noise		100Hz	ļ		-135	dBc/Hz		
		1KHz			-145	dBc/Hz		
Environmental Machania d Conditi		10KHz			-150	dBc/Hz		
Environmental, Mechanical Conditions	Reference STD.				Test Condition			
Parameter Mechanical shock	>30G,11ms half sine				MIL-STD-202			
Vibration	5G up to 2KHz				TD-202			