EB71F51D28BV2-10.000M Click part number to visit page



REGULATORY COMPLIANCE (Data Sheet downloaded on Oct 23, 2016)



ITEM DESCRIPTION

Oven Controlled Quartz Crystal Clock Oscillators OCXO HCMOS (CMOS) 5.0Vdc AT-Cut 14-Pin DIP Metal Thru-Hole 10.000MHz ±500ppb Maximum ±280ppb Maximum 0°C to +70°C

ELECTRICAL SPECIFICATIONS		
Nominal Frequency	10.000MHz	
Initial Tolerance	±500ppb Maximum (Measured at nominal Vdd and Vc; at 25°C)	
Frequency Stability	±280ppb Maximum (Measured at nominal Vdd and Vc)	
Frequency Stability vs. Input Voltage	±50ppb Maximum (Vdd ±5%)	
Frequency Stability vs. Load	±50ppb Maximum (Vload ±5%)	
Frequency Stability vs. Aging (1 Day)	±30ppb Maximum (after 72 hours of operation)	
Frequency Stability vs. Aging (1 Year)	±500ppb Maximum (after 72 hours of operation)	
Frequency Stability vs. Aging (10 Years)	±3.0ppm Maximum (after 72 hours of operation)	
Operating Temperature Range	0°C to +70°C	
Supply Voltage	5.0Vdc ±5%	
Warm Up Time	3 Minutes Maximum (Referenced to ±500ppb of final frequency at 1 hour at 25°C)	
Power Consumption	1.6 Watts Maximum at Steady State 2.5 Watts Maximum during Warm Up (Measured at 25°C)	
Output Voltage Logic High (Voh)	Vdd-0.5Vdc Minimum (IOH = -8mA)	
Output Voltage Logic Low (Vol)	0.5Vdc Maximum (IOL = +8mA)	
Rise/Fall Time	6nSec Maximum (Measured at 20% to 80% of waveform)	
Duty Cycle	50 ±5(%) (Measured at 50% of waveform)	
Load Drive Capability	15pF Maximum	
Output Logic Type	CMOS	
Control Voltage	2.5Vdc ±2.5Vdc	
Control Voltage Range	0.0Vdc to Vdd	
Frequency Deviation	±5ppm Minimum (Referenced to Fo at Vc=2.5Vdc; Vdd=5.0Vdc; over Operating Temperature Range)	
Linearity	±10% Maximum	
Transfer Function	Positive Transfer Characteristic	
Input Impedance	10kOhms Typical	
Phase Noise	-95dBc/Hz at 10Hz Offset -120dBc/Hz at 100Hz Offset -135dBc/Hz at 1kHz Offset -140dBc/Hz at 10kHz Offset (Measures at 12.800MHz)	
Start Up Time	10mSec Maximum	
Storage Temperature Range	-55°C to +125°C	

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS		
Gross Leak Test	MIL-STD-883, Method 1014 Condition C	
Lead Integrity	MIL-STD-883, Method 2004	
Mechanical Shock	MIL-STD-202, Method 213 Condition C	
Resistance to Soldering Heat	MIL-STD-202, Method 210	
Resistance to Solvents	MIL-STD-202, Method 215	
Solderability	MIL-STD-883, Method 2003	

www.ecliptek.com | Specification Subject to Change Without Notice | Revision C 05/17/2007 | Page 1 of 7

EB71F51D28BV2-10.000M Calick part number to visit part number to tist part number of Details page

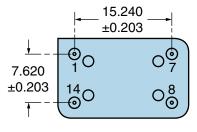


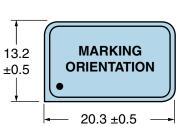
ENVIRONMENTAL & MECHANICAL SPECIFICATIONS CONTINUED		
Temperature Cycling	MIL-STD-883, Method 1010	
Vibration	MIL-STD-883, Method 2007 Condition A	

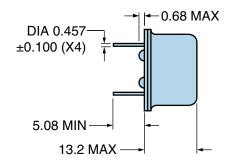
EB71F51D28BV2-10.000M Callick part number to visit part Number Details page



MECHANICAL DIMENSIONS (all dimensions in millimeters)







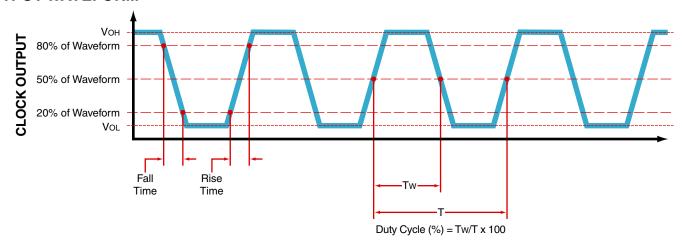
PIN	CONNECTION
1	Voltage Control
7	Case Ground
8	Output
14	Supply Voltage

LINE	MARKING
1	ECLIPTEK
2	10.000M
3	XXXXX XXXXX=Ecliptek Manufacturing Identifier

EB71F51D28BV2-10.000M Click part number to visit page Part Number Details page



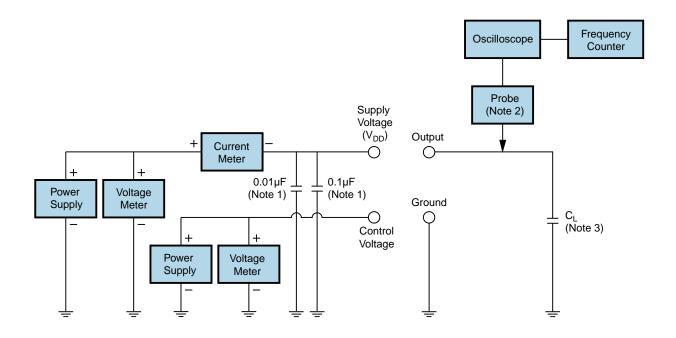
OUTPUT WAVEFORM



EB71F51D28BV2-10.000M Click part number to visit page



Test Circuit for Voltage Control Option

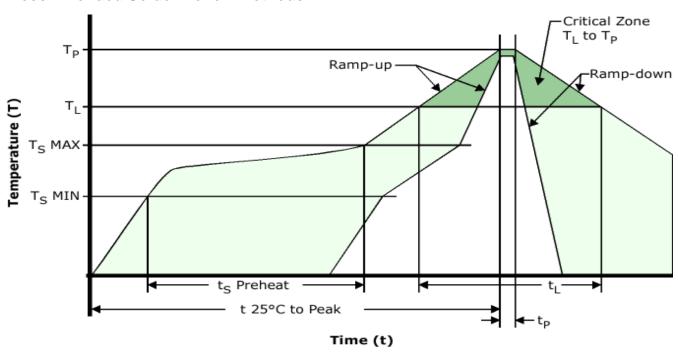


- Note 1: An external 0.01µF ceramic bypass capacitor in parallel with a 0.1µF high frequency ceramic bypass capacitor close (less than 2mm) to the package ground and supply voltage pin is required.
- Note 2: A low capacitance (<12pF), 10X attenuation factor, high impedance (>10Mohms), and high bandwidth (>300MHz) passive probe is recommended.
- Note 3: Capacitance value \dot{C}_L includes sum of all probe and fixture capacitance.

EB71F51D28BV2-10.000M Click part number to visit Part Number Details page



Recommended Solder Reflow Methods



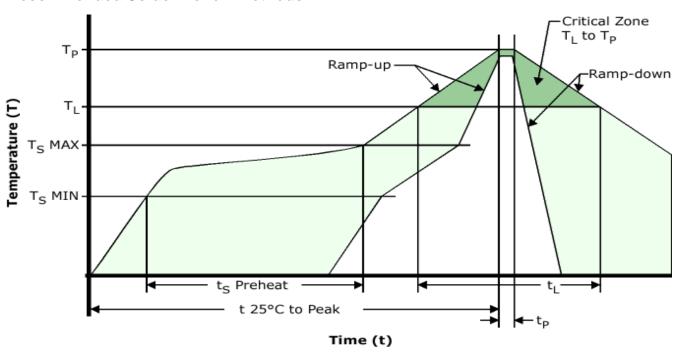
Low Temperature Infrared/Convection 185°C

<u> </u>	
Ts MAX to T∟ (Ramp-up Rate)	5°C/Second Maximum
Preheat	
- Temperature Minimum (Ts MIN)	N/A
- Temperature Typical (Ts TYP)	150°C
- Temperature Maximum (Ts MAX)	N/A
- Time (ts MIN)	60 - 120 Seconds
Ramp-up Rate (T∟ to T _P)	5°C/Second Maximum
Time Maintained Above:	
- Temperature (T∟)	150°C
- Time (t∟)	200 Seconds Maximum
Peak Temperature (T _P)	185°C Maximum
Target Peak Temperature (T _P Target)	185°C Maximum 2 Times
Time within 5°C of actual peak (t₂)	10 Seconds Maximum 2 Times
Ramp-down Rate	5°C/Second Maximum
Time 25°C to Peak Temperature (t)	N/A
Moisture Sensitivity Level	Level 1
Additional Notes	Temperatures shown are applied to body of device. Use this method only for product with the Gull Wing option.

EB71F51D28BV2-10.000M Click part number to visit



Recommended Solder Reflow Methods



Low Temperature Solder Bath (Wave Solder)

	,
Ts MAX to T∟ (Ramp-up Rate)	5°C/Second Maximum
Preheat	
- Temperature Minimum (Ts MIN)	N/A
- Temperature Typical (Ts TYP)	150°C
- Temperature Maximum (Ts MAX)	N/A
- Time (ts MIN)	30 - 60 Seconds
Ramp-up Rate (T∟ to T _P)	5°C/Second Maximum
Time Maintained Above:	
- Temperature (T∟)	150°C
- Time (t∟)	200 Seconds Maximum
Peak Temperature (T _P)	245°C Maximum
Target Peak Temperature (T _P Target)	245°C Maximum 1 Time / 235°C Maximum 2 Times
Time within 5°C of actual peak (t _p)	5 Seconds Maximum 1 Time / 15 Seconds Maximum 2 Times
Ramp-down Rate	5°C/Second Maximum
Time 25°C to Peak Temperature (t)	N/A
Moisture Sensitivity Level	Level 1
Additional Notes	Temperatures shown are applied to back of PCB board and device leads only. Do not use this method for product with the Gull Wing option.

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures listed are applied to device leads only. This method can be utilized with both Gull Wing and Non-Gull Wing devices.)

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperatures listed are applied to device leads only. This method can be utilized with both Gull Wing and Non-Gull Wing devices.)