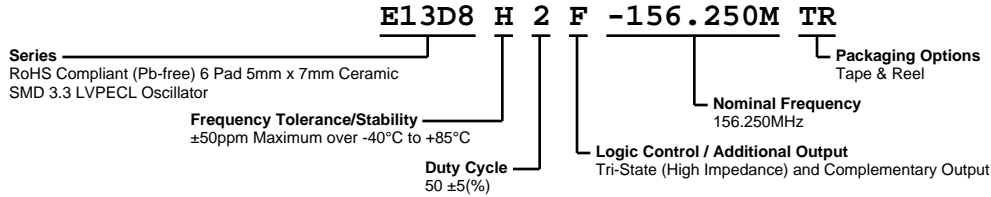


E13D8H2F-156.250M TR



ECLIPTEK[®]
CORPORATION



ELECTRICAL SPECIFICATIONS

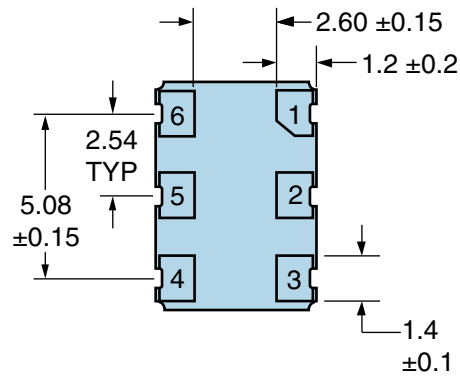
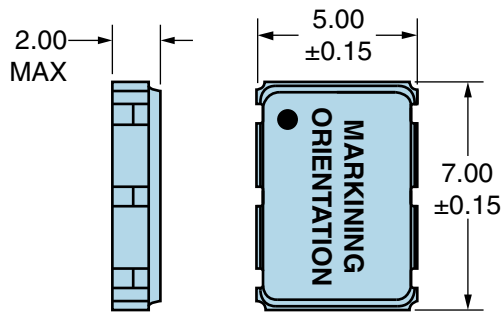
Nominal Frequency	156.250MHz
Frequency Tolerance/Stability	±50ppm Maximum over -40°C to +85°C (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, 1st Year Aging at 25°C, Shock, and Vibration)
Supply Voltage	3.3Vdc ±5%
Input Current	75mA Maximum (with Load)
Output Voltage Logic High (Voh)	Vcc-1.4Vdc Minimum, Vcc-1.2Vdc Typical, Vcc-0.9Vdc Maximum
Output Voltage Logic Low (Vol)	Vcc-1.7Vdc Maximum, Vcc-1.85Vdc Typical, Vcc-2.0Vdc Minimum
Peak to Peak Output Voltage Swing	600mVdc Minimum, 800mVdc Typical, 1000mVdc Maximum
Rise/Fall Time	300pSec Typical, 600pSec Maximum (Measured over 20% to 80% of waveform)
Duty Cycle	50 ±5(%) (Measured at 50% of waveform)
Load Drive Capability	50 Ohms into Vcc-2.0Vdc
Output Logic Type	LVPECL
Phase Noise	-60dBc/Hz at 10Hz Offset, -90dBc/Hz at 100Hz Offset, -115dBc/Hz at 1kHz Offset, -129dBc/Hz at 10kHz Offset, -130dBc/Hz at 100kHz Offset, -131dBc/Hz at 1MHz Offset, -148dBc/Hz at 10MHz Offset (All Values are Typical, Fo = 156.250MHz)
Logic Control / Additional Output	Tri-State (High Impedance) and Complementary Output
Tri-State Input Voltage (Vih and Vil)	Enable High Option: Vih of 70% of Vcc Minimum or No Connect to Enable Output and Complementary Output, Vil of 30% of Vcc Maximum to Disable Output and Complementary Output (High Impedance).
Standby Current	600µA Maximum (Disabled Output, High Impedance, without Load)
RMS Phase Jitter	0.7pSec Typical, 1pSec Maximum (FJ=12kHz to 20MHz)
Start Up Time	10mSec Maximum
Storage Temperature Range	-55°C to +125°C

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
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
Temperature Cycling	MIL-STD-883, Method 1010
Vibration	MIL-STD-883, Method 2007, Condition A

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MECHANICAL DIMENSIONS (all dimensions in millimeters)

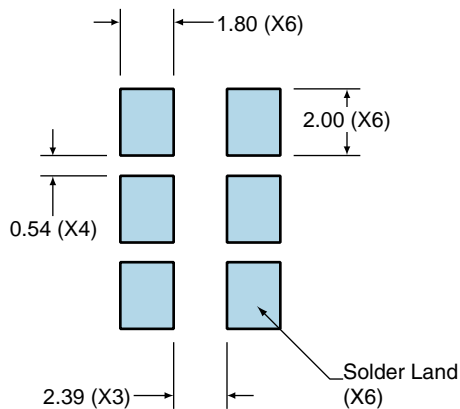


PIN	CONNECTION
1	Tri-State
2	No Connect
3	Case/Ground
4	Output
5	Complementary Output
6	Supply Voltage

LINE	MARKING
1	ECLIPTEK
2	156.25M
3	XXYZZ XX=Ecliptek Manufacturing Code Y=Last Digit of the Year ZZ=Week of the Year

Suggested Solder Pad Layout

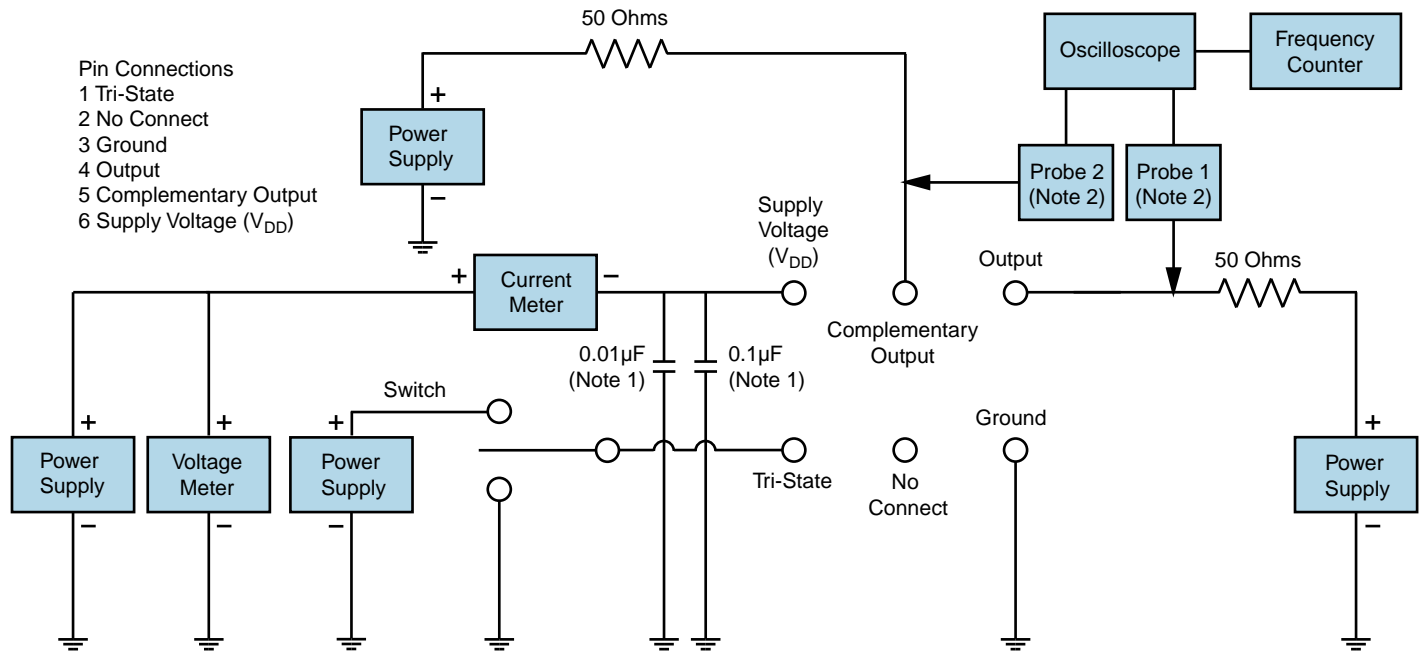
All Dimensions in Millimeters



All Tolerances are ± 0.1

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Test Circuit for Tri-State and Complementary Output



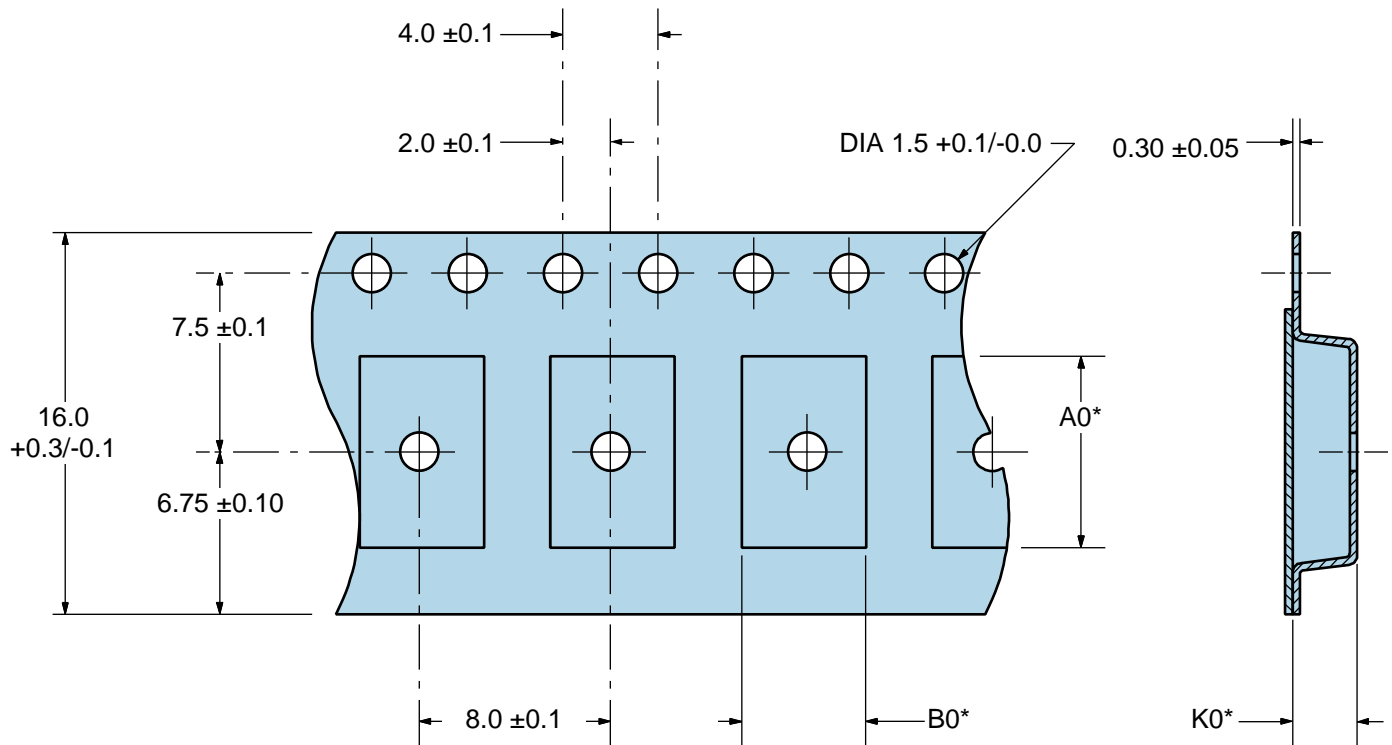
Note 1: An external 0.1µF low frequency tantalum bypass capacitor in parallel with a 0.01µF high frequency ceramic bypass capacitor close to the package ground and V_{DD} pin is required.

Note 2: A low capacitance (<12pF), 10X attenuation factor, high impedance (>10Mohms), and high bandwidth (>300MHz) passive probe is recommended.

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Tape & Reel Dimensions

Quantity Per Reel: 1,000 units



*Compliant to EIA 481A



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Recommended Solder Reflow Methods



High Temperature Infrared/Convection

T_s MAX to T_L (Ramp-up Rate)	3°C/second Maximum
Preheat	
- Temperature Minimum (T_s MIN)	150°C
- Temperature Typical (T_s TYP)	175°C
- Temperature Maximum (T_s MAX)	200°C
- Time (t_s MIN)	60 - 180 Seconds
Ramp-up Rate (T_L to T_p)	3°C/second Maximum
Time Maintained Above:	
- Temperature (T_L)	217°C
- Time (t_L)	60 - 150 Seconds
Peak Temperature (T_p)	260°C Maximum for 10 Seconds Maximum
Target Peak Temperature (T_p Target)	250°C +0/-5°C
Time within 5°C of actual peak (t_p)	20 - 40 seconds
Ramp-down Rate	6°C/second Maximum
Time 25°C to Peak Temperature (t)	8 minutes Maximum
Moisture Sensitivity Level	Level 1

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 240°C

T_s MAX to T_L (Ramp-up Rate)	5°C/second Maximum
Preheat	
- Temperature Minimum (T _s MIN)	N/A
- Temperature Typical (T _s TYP)	150°C
- Temperature Maximum (T _s MAX)	N/A
- Time (t _s MIN)	60 - 120 Seconds
Ramp-up Rate (T_L to T_p)	5°C/second Maximum
Time Maintained Above:	
- Temperature (T _L)	150°C
- Time (t _L)	200 Seconds Maximum
Peak Temperature (T_p)	240°C Maximum
Target Peak Temperature (T_p Target)	240°C Maximum 1 Time / 230°C Maximum 2 Times
Time within 5°C of actual peak (t_p)	10 seconds Maximum 2 Times / 80 seconds Maximum 1 Time
Ramp-down Rate	5°C/second Maximum
Time 25°C to Peak Temperature (t)	N/A
Moisture Sensitivity Level	Level 1

Low Temperature Manual Soldering

185°C Maximum for 10 seconds Maximum, 2 times Maximum.

High Temperature Manual Soldering

260°C Maximum for 5 seconds Maximum, 2 times Maximum.