

ES52F3D20N-18.414M

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REGULATORY COMPLIANCE (Data Sheet downloaded on Aug 28, 2016)



ITEM DESCRIPTION

Temperature Compensated Quartz Crystal Clock Oscillators TCXO Clipped Sinewave 3.3Vdc 14-Pin DIP Metal Thru-Hole 18.414MHz ± 2.0 ppm Maximum -30°C to +75°C

ELECTRICAL SPECIFICATIONS

Nominal Frequency	18.414MHz
Frequency Stability	± 2.0 ppm Maximum (Inclusive of Operating Temperature Range)
Frequency Stability vs. Input Voltage	± 0.3 ppm Maximum ($\pm 5\%$)
Frequency Stability vs. Load	± 0.2 ppm Maximum (± 2 pF)
Aging at 25°C	± 1 ppm/Year Maximum
Operating Temperature Range	-30°C to +75°C
Supply Voltage	3.3Vdc $\pm 5\%$
Input Current	1.5mA Maximum
Output Voltage	0.7Vp-p Minimum
Load Drive Capability	10kOhms//10pF
Output Logic Type	Clipped Sinewave
Control Voltage	None (No Connect on Pin 1)
Internal Trim	± 3 ppm Minimum (Top of Can)
Modulation Bandwidth	10kHz Minimum (Measured at -3dB with a Control Voltage of 1.65Vdc)
Input Impedance	10kOhms Typical
Phase Noise	-70dBc at 10Hz Offset, -100dBc at 100Hz Offset, -130dBc at 1kHz Offset, -140dBc at 10kHz Offset, -145dBc at 100kHz Offset
Storage Temperature Range	-40°C to +85°C

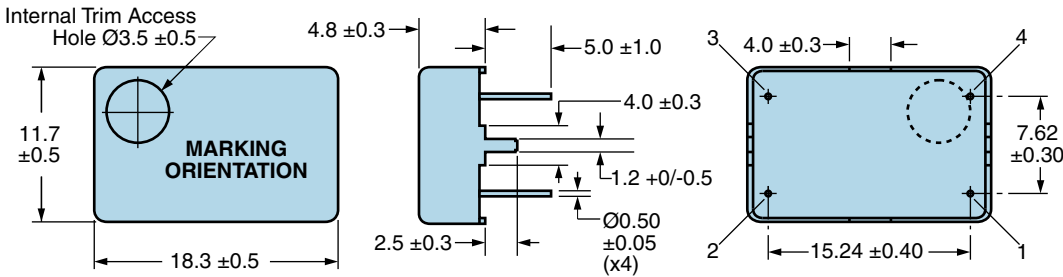
ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Fine Leak Test	MIL-STD-883, Method 1014 Condition A (Internal Crystal Only)
Gross Leak Test	MIL-STD-883, Method 1014 Condition C (Internal Crystal Only)
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
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)



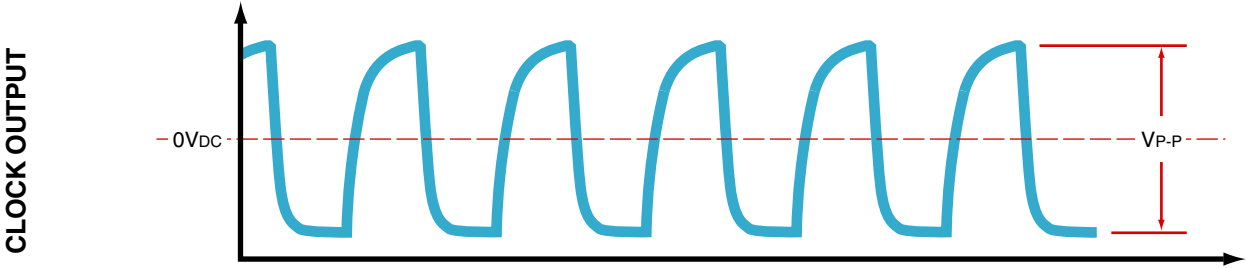
PIN	CONNECTION
1	No Connect
2	Case/Ground
3	Output
4	Supply Voltage

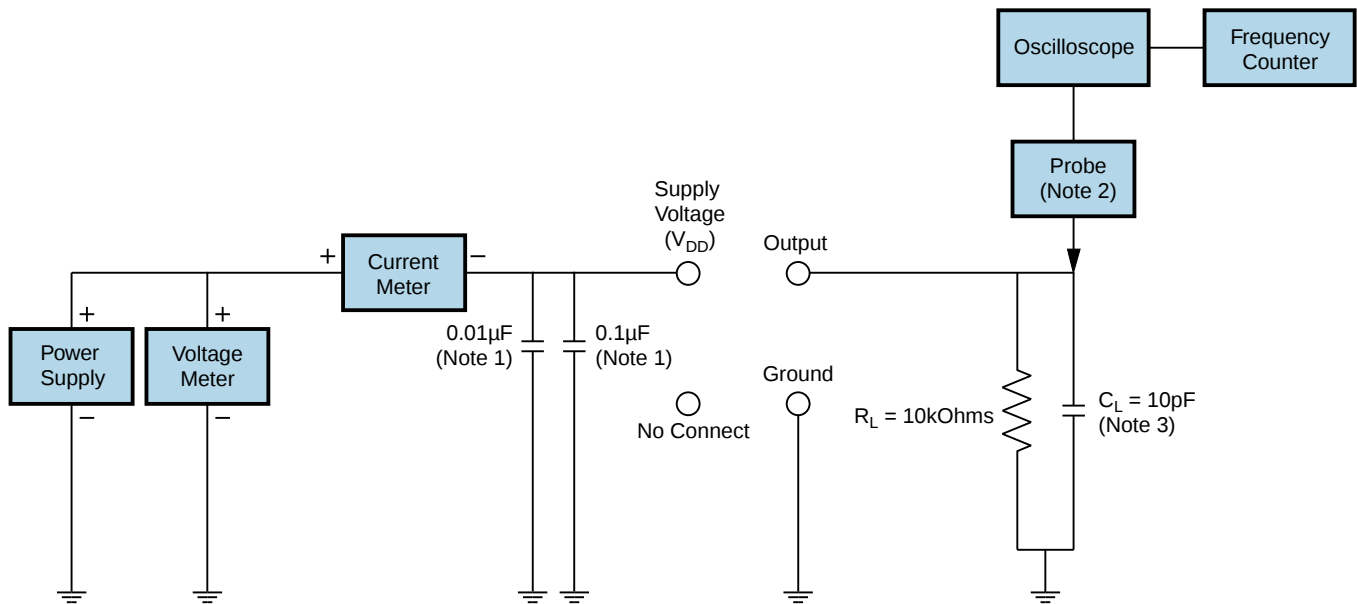
LINE	MARKING
1	ECLIPTEK
2	18.414M M=Nominal Frequency Unit of Measure
3	XXYYZZ XX=Ecliptek Manufacturing Code Y=Last Digit of the Year ZZ=Week of the Year

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OUTPUT WAVEFORM



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Test Circuit for No Connect Option

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.

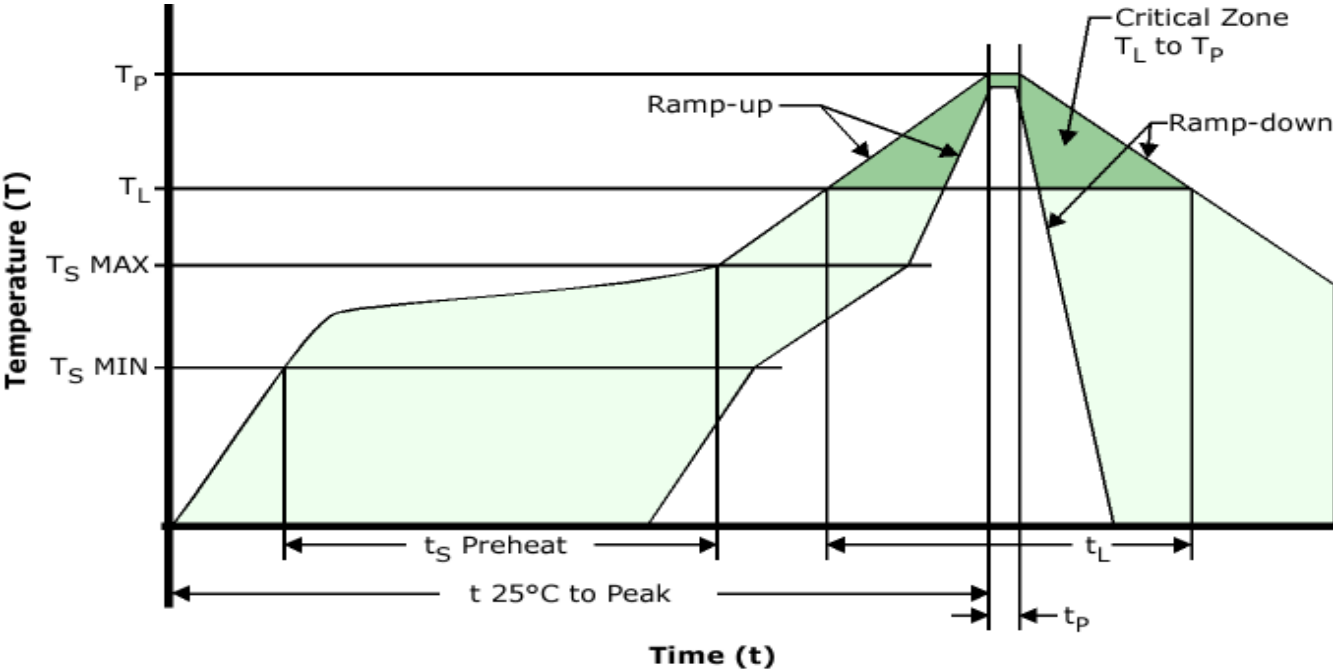
Note 2: A low capacitance (<12pF), 10X attenuation factor, high impedance (>10Mohms), and high bandwidth (>300MHz) passive probe is recommended.

Note 3: Capacitance value C_L includes sum of all probe and fixture capacitance.

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Recommended Solder Reflow Methods



Low Temperature Solder Bath (Wave Solder)

Ts MAX to TL (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 (TL to TP)	5°C/Second Maximum
Time Maintained Above:	
- Temperature (TL)	150°C
- Time (tL)	200 Seconds Maximum
Peak Temperature (TP)	245°C Maximum
Target Peak Temperature (TP Target)	245°C Maximum 1 Time / 235°C Maximum 2 Times
Time within 5°C of actual peak (tp)	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

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures listed are applied to device leads only.)

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperatures listed are applied to device leads only.)

Low Temperature Solder Bath (Wave Solder) Note 1

Device is non-hermetic; Post reflow aqueous wash is not recommended

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Low Temperature Solder Bath (Wave Solder) Note 2

Temperatures shown are applied to back of PCB board and device leads only.