

ES51W4E50N-32.000M



ITEM DESCRIPTION

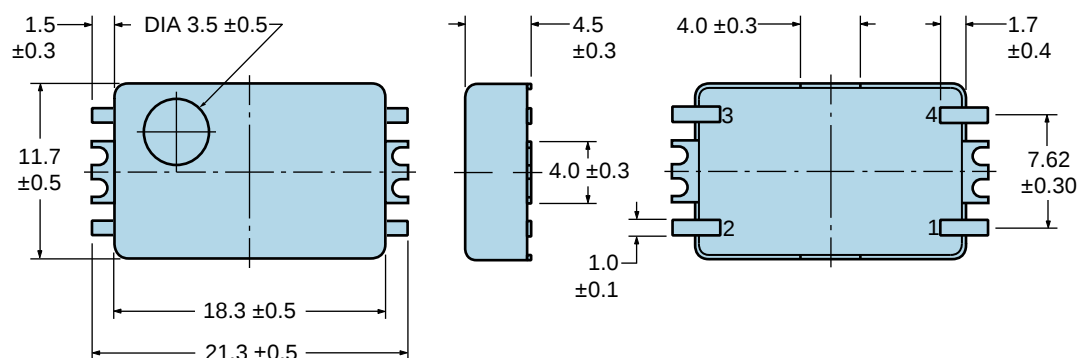
Temperature Compensated Quartz Crystal Clock Oscillators TCXO Clipped Sinewave 5.0Vdc 4 Pad 11.7mm x 21.3mm x 4.5mm PCB Surface Mount Metal (SMD) 32.000MHz ± 5.0 ppm Maximum -40°C to +85°C

ELECTRICAL SPECIFICATIONS

Nominal Frequency	32.000MHz
Frequency Stability	± 5.0 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	-40°C to +85°C
Supply Voltage	5.0Vdc $\pm 5\%$
Input Current	3.0mA Maximum
Output Voltage	1.0Vp-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 2.5Vdc)
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 (Typical Values Fo=19.200MHz at 25°C at Nominal Vdd and Vc)
Storage Temperature Range	-40°C to +85°C

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

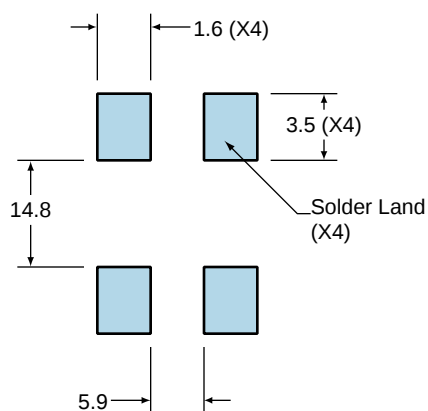
Fine Leak Test	MIL-STD-883, Method 1014 Condition A (Internal Crystal Only)
Gross Leak Test	MIL-STD-883, Method 1014 Condition C (Internal Crystal Only)
Lead Integrity	MIL-STD-883, Method 2004
Mechanical Shock	MIL-STD-202, Method 213 Condition C
Resistance to Soldering Heat	MIL-STD-202, Method 210
Resistance 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



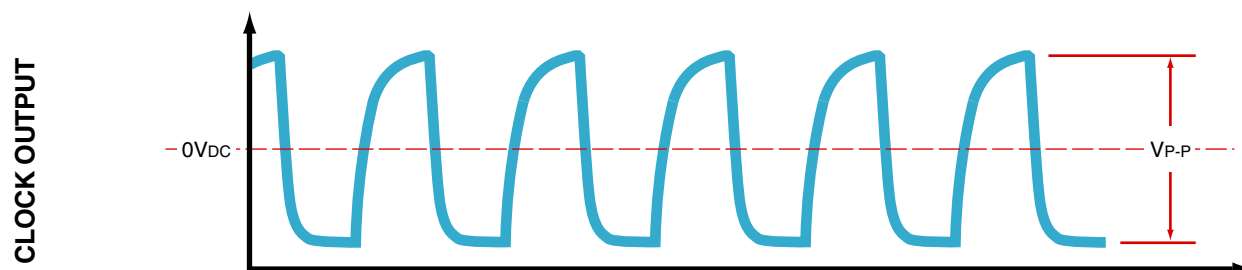
PIN	CONNECTION
1	No Connect
2	Ground
3	Output
4	Supply Voltage

LINE	MARKING
1	ECLIPTEK
2	32.000M
3	XXYZZ <i>XX=Eclipse Manufacturing Code</i> <i>Y=Last Digit of the Year</i> <i>ZZ=Week of the Year</i>

All Dimensions in Millimeters

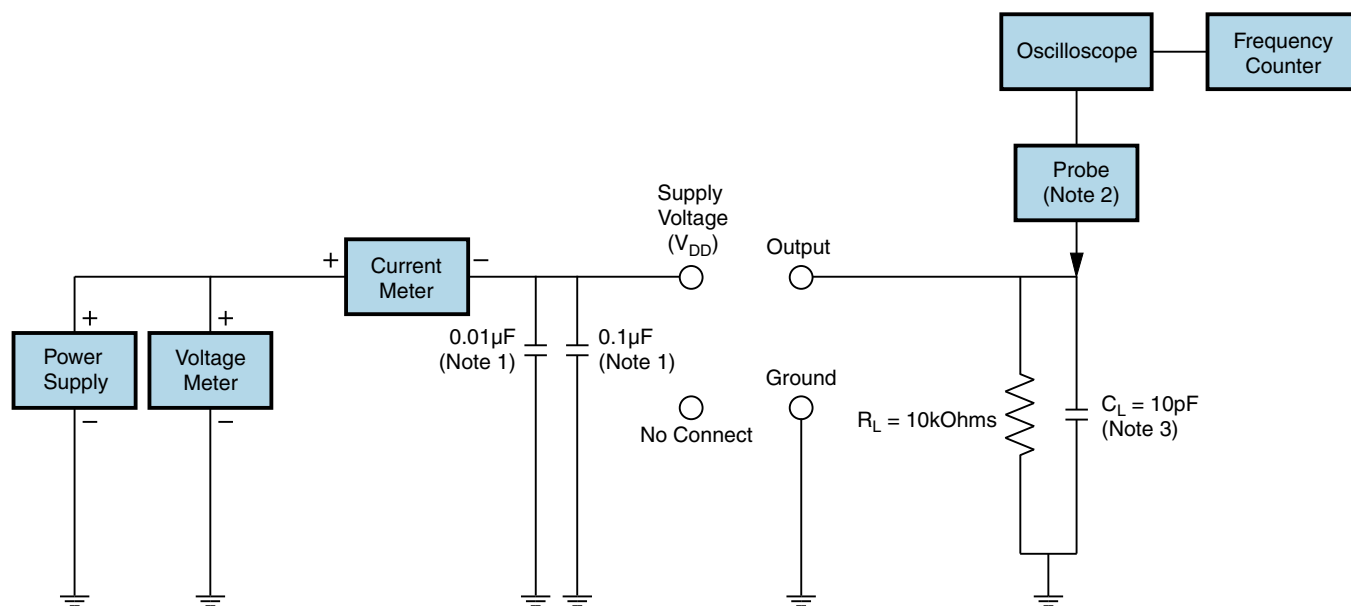


All Tolerances are ± 0.1

ES51W4E50N-32.000M **OUTPUT WAVEFORM**

ES51W4E50N-32.000M

Test Circuit for No Connect Option



Note 1: An external $0.01\mu\text{F}$ bypass capacitor in parallel with a $0.1\mu\text{F}$ high frequency ceramic bypass capacitor close (less than 2mm) to the package ground and supply voltage pin is required.

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

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

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 240°C

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) 60 - 120 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) 240°C Maximum

Target Peak Temperature (Tp Target) 240°C Maximum 2 Times / 230°C Maximum 1 Time

Time within 5°C of actual peak (tp) 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.