





EH47 25

Series

RoHS Compliant (Pb-free) 2.5V 4 Pad 2.5mm x 3.2mm
Ceramic SMD LVCMOS Oscillator

Frequency Tolerance/Stability ±25ppm Maximum

Operating Temperature Range - 0°C to +70°C

TS -50.000M

Nominal Frequency 50.000MHz

Pin 1 Connection
 Tri-State (High Impedance)

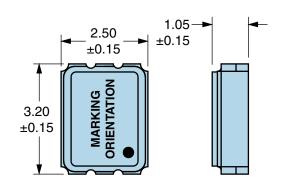
- Duty Cycle 50 ±10(%)

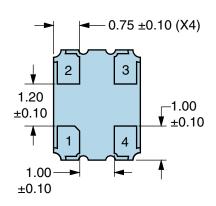
Operating 260°C Refl ing at 25°C	aximum (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°, ow, Shock, and Vibration) r Maximum C
Operating 260°C Refl ing at 25°C	remperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°, bw, Shock, and Vibration) r Maximum C fundamental Company of the C
pply Voltage over Current trut Voltage Logic High (Voh) se/Fall Time fut Cycle ad Drive Capability tput Logic Type 1 Connection Setate Input Voltage (Vih and Vil) over City +70 2.5Vdc ±59 7mA Maxim 7mA Maxim 90% of Vdc 10% of Vdc 10% of Vdc 6mSec Maxim 50 ±10(%) 50 ±10(%) 7mi-State (F	C 6 num (No Load) I Minimum (IOH = -8mA)
pply Voltage 2.5Vdc ±59 nut Current tput Voltage Logic High (Voh) 10% of Vdc tput Voltage Logic Low (Vol) 10% of Vdc tell Time 6nSec Max ty Cycle 30 ±10(%) 15pF Maxin tput Logic Type 1 Connection Tri-State (F	num (No Load) Minimum (IOH = -8mA)
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ty Cycle 50 ±10(%) ad Drive Capability 15pF Maxii tput Logic Type CMOS 1 1 Connection Tri-State (H -State Input Voltage (Vih and Vil) 90% of Vdd	Maximum (IOE = Tollie)
ad Drive Capability tput Logic Type CMOS 1 Connection Tri-State (H State Input Voltage (Vih and Vil)	imum (Measured at 20% to 80% of waveform)
tput Logic Type CMOS 1 Connection Tri-State (H -State Input Voltage (Vih and Vil) 90% of Vdd	(Measured at 50% of waveform)
n 1 Connection Tri-State (Hand Vil) State Input Voltage (Vih and Vil) 90% of Vdd	num
-State Input Voltage (Vih and Vil) 90% of Vdd	
	igh Impedance)
mpodano	Minimum or No Connect to Enable Output, 10% of Vdd Maximum to Disable Output (High
andby Current 10µA Maxi	num (Pin 1 = Ground)
solute Clock Jitter ±100pSec	
art Up Time 10mSec M	Maximum
orage Temperature Range -55°C to +	

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS		
ESD Susceptibility	MIL-STD-883, Method 3015, Class 1, HBM: 1500Vdc	
Fine Leak Test	MIL-STD-883, Method 1014, Condition A	
Flammability	UL94-V0	
Gross Leak Test	MIL-STD-883, Method 1014, Condition C	
Mechanical Shock	MIL-STD-883, Method 2002, Condition B	
Moisture Resistance	MIL-STD-883, Method 1004	
Moisture Sensitivity	J-STD-020, MSL 1	
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K	
Resistance to Solvents	MIL-STD-202, Method 215	
Solderability	MIL-STD-883, Method 2003	
Temperature Cycling	MIL-STD-883, Method 1010, Condition B	
Vibration	MIL-STD-883, Method 2007, Condition A	



MECHANICAL DIMENSIONS (all dimensions in millimeters)



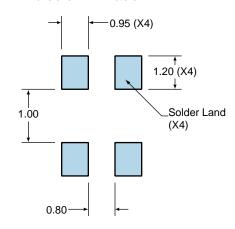


PIN	CONNECTION	
1	Tri-State	
2	Case Ground	
3	Output	
4	Supply Voltage	

LINE	MARKING
1	EPO
_	XXXXX XXXXX=Ecliptek Manufacturing Identifier

Suggested Solder Pad Layout

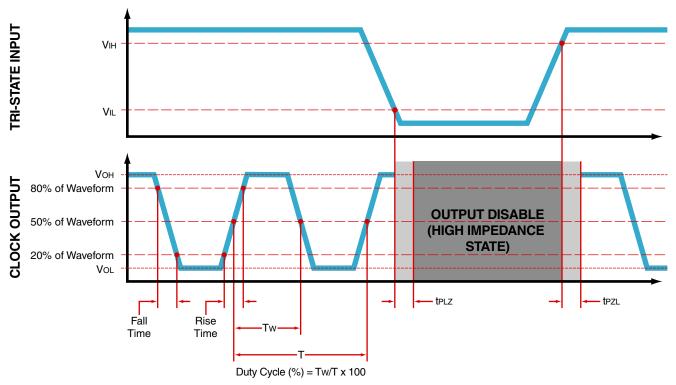
All Dimensions in Millimeters



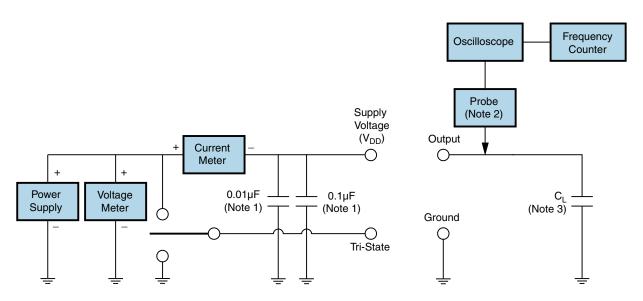
All Tolerances are ±0.1



OUTPUT WAVEFORM & TIMING DIAGRAM



Test Circuit for CMOS Output



- 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 C₁ includes sum of all probe and fixture capacitance.



Recommended Solder Reflow Methods



High Temperature Infrared/Convection

T _s MAX to T _∟ (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∟)	217°C
- Time (t∟)	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 (tp)	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∟)	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 (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.