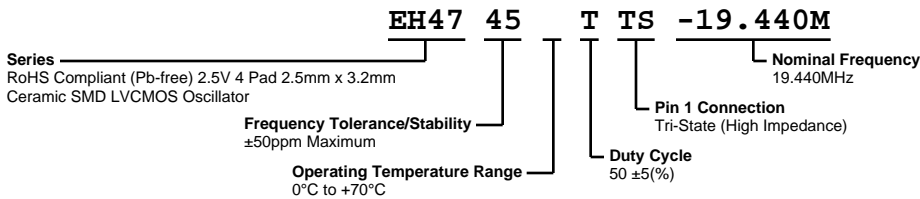


EH4745TTS-19.440M



ECLIPTEK
CORPORATION



ELECTRICAL SPECIFICATIONS

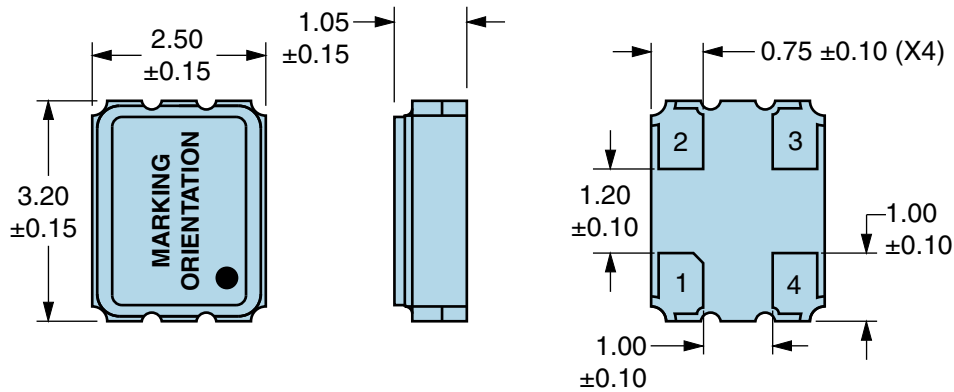
Nominal Frequency	19.440MHz
Frequency Tolerance/Stability	± 50 ppm Maximum (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°, 260°C Reflow, Shock, and Vibration)
Aging at 25°C	± 5 ppm/Year Maximum
Operating Temperature Range	0°C to +70°C
Supply Voltage	2.5Vdc ± 5 %
Input Current	6mA Maximum (No Load)
Output Voltage Logic High (Voh)	90% of Vdd Minimum (IOH = -8mA)
Output Voltage Logic Low (Vol)	10% of Vdd 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
Pin 1 Connection	Tri-State (High Impedance)
Tri-State Input Voltage (Vih and Vil)	90% of Vdd Minimum or No Connect to Enable Output, 10% of Vdd Maximum to Disable Output (High Impedance)
Standby Current	10 μ A Maximum (Pin 1 = Ground)
Absolute Clock Jitter	± 100 pSec Maximum
Start Up Time	10mSec Maximum
Storage Temperature Range	-55°C to +125°C

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

EH4745TTS-19.440M

MECHANICAL DIMENSIONS (all dimensions in millimeters)

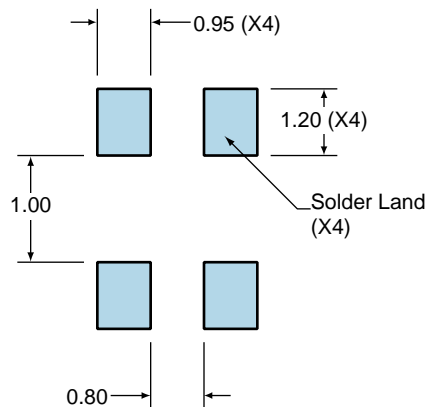


PIN	CONNECTION
1	Tri-State
2	Case Ground
3	Output
4	Supply Voltage

LINE	MARKING
1	EPO
2	XXXXXX XXXXXX=Ecliptek Manufacturing Identifier

Suggested Solder Pad Layout

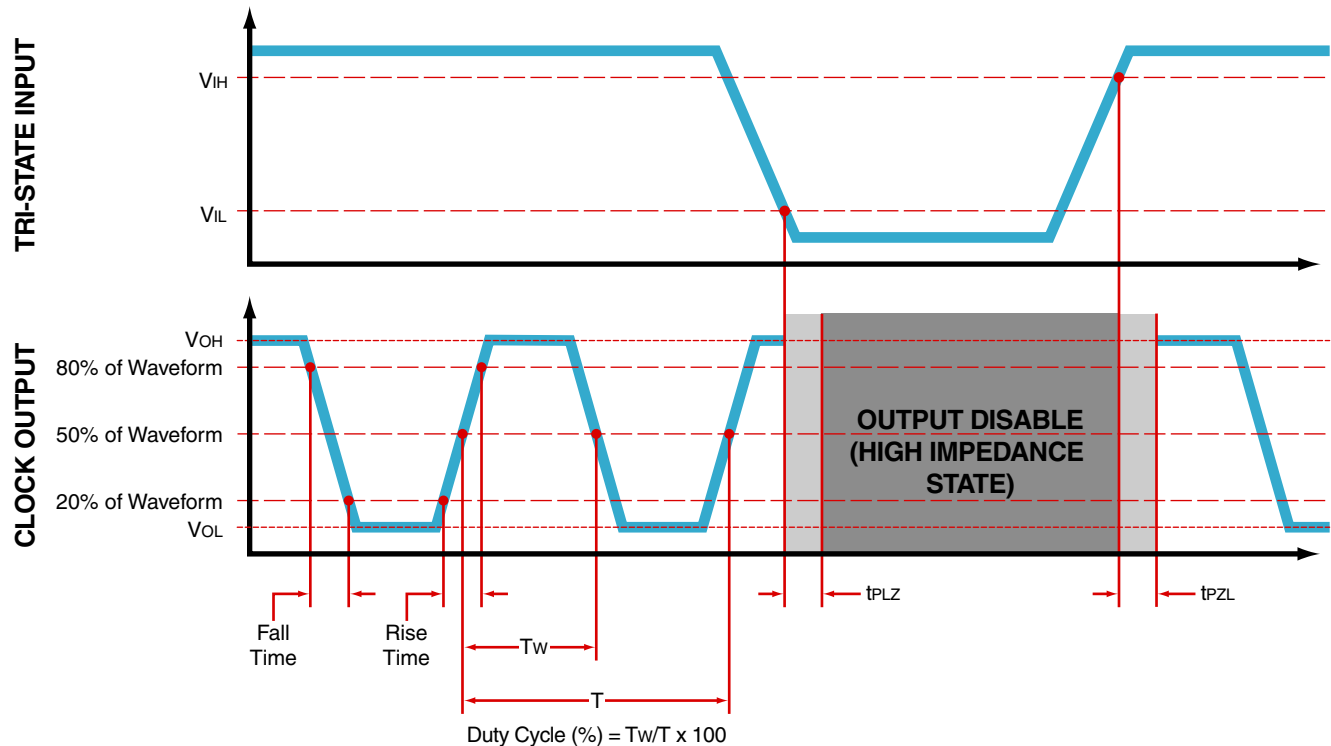
All Dimensions in Millimeters



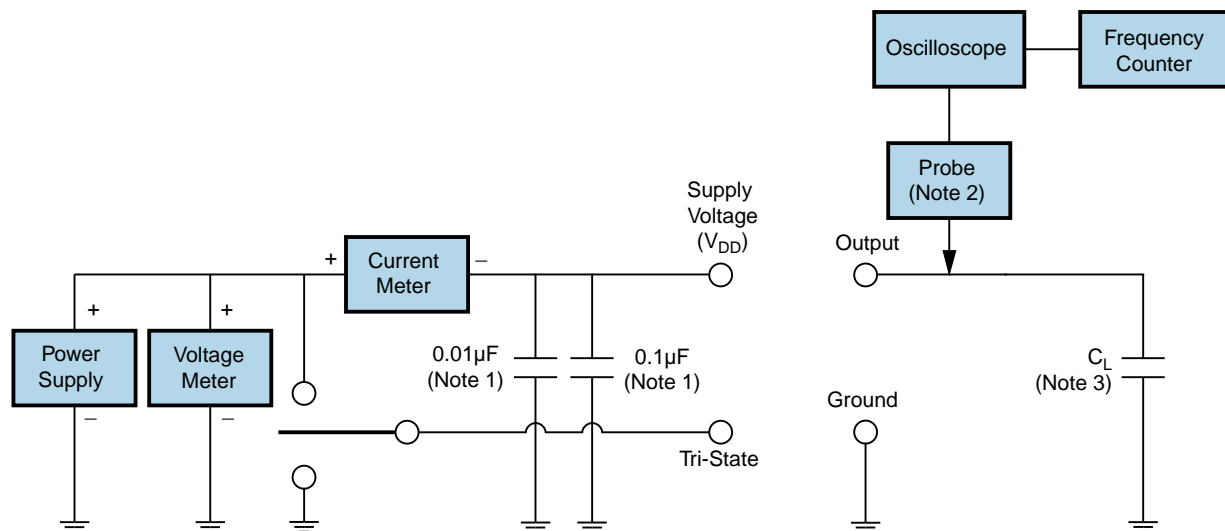
All Tolerances are ± 0.1

EH4745TTS-19.440M

OUTPUT WAVEFORM & TIMING DIAGRAM



Test Circuit for CMOS Output

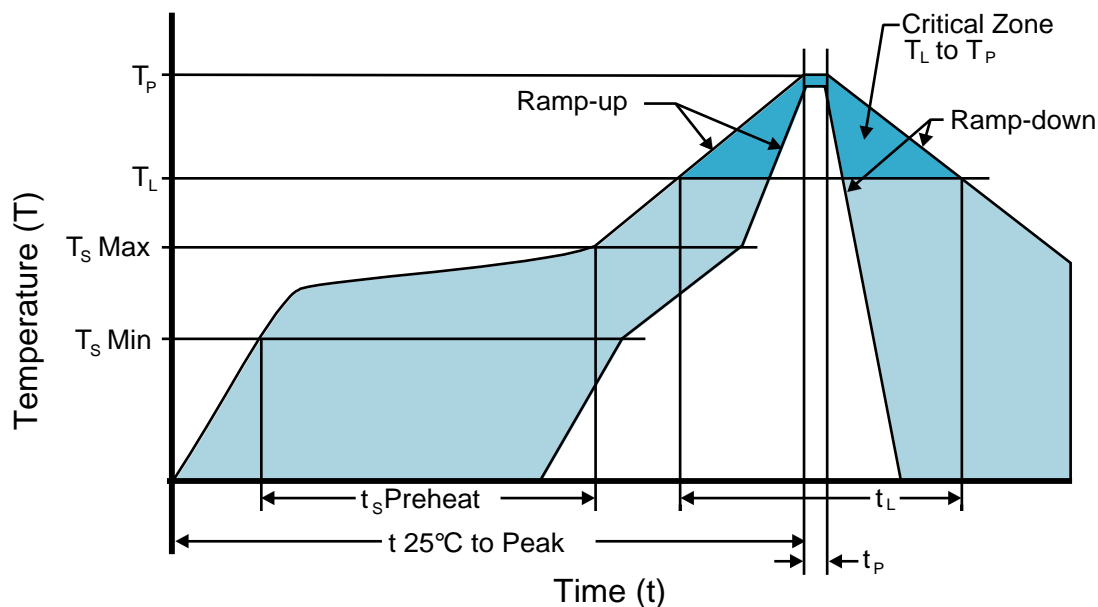


Note 1: An external $0.1\mu F$ low frequency tantalum bypass capacitor in parallel with a $0.01\mu F$ high frequency ceramic bypass capacitor close to the package ground and V_{DD} pin is required.

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.

Recommended Solder Reflow Methods



High Temperature Infrared/Convection

Ts MAX to TL (Ramp-up Rate) 3°C/second Maximum

Preheat

- Temperature Minimum (Ts MIN) 150°C
 - Temperature Typical (Ts TYP) 175°C
 - Temperature Maximum (Ts MAX) 200°C
 - Time (ts MIN) 60 - 180 Seconds

Ramp-up Rate (TL to Tp) 3°C/second Maximum

Time Maintained Above:

- Temperature (TL) 217°C
 - Time (tL) 60 - 150 Seconds

Peak Temperature (Tp) 260°C Maximum for 10 Seconds Maximum

Target Peak Temperature (Tp Target) 250°C +0/-5°C

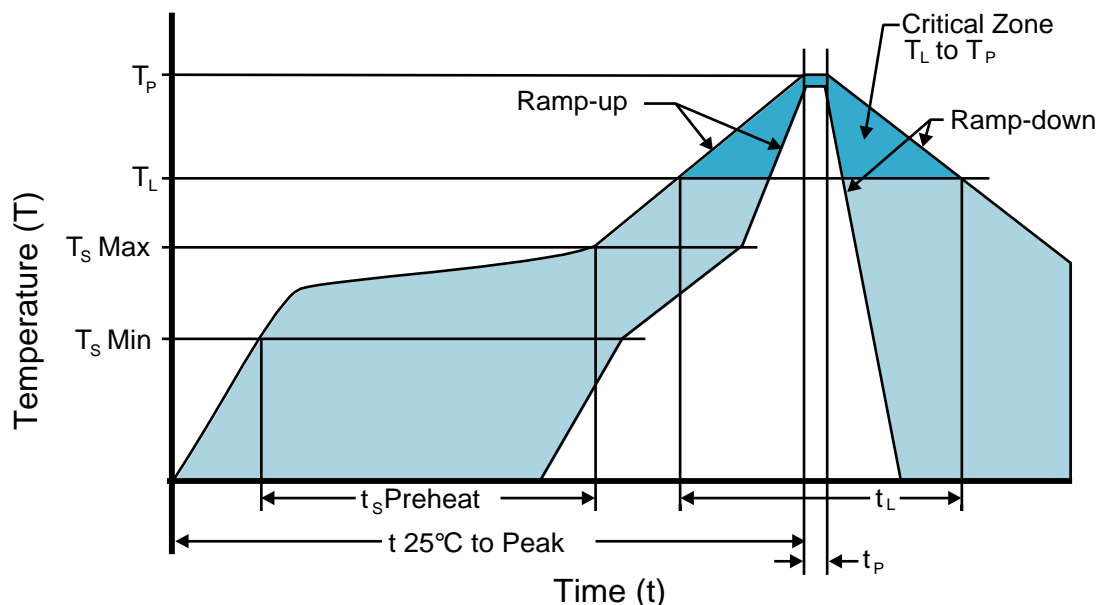
Time within 5°C of actual peak (tp) 20 - 40 seconds

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_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.