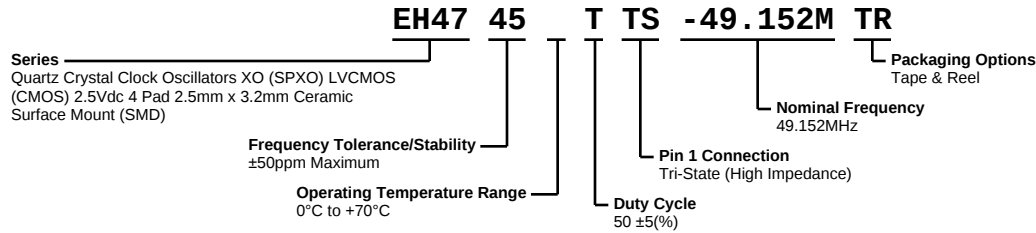


EH4745TTS-49.152M TR



ELECTRICAL SPECIFICATIONS

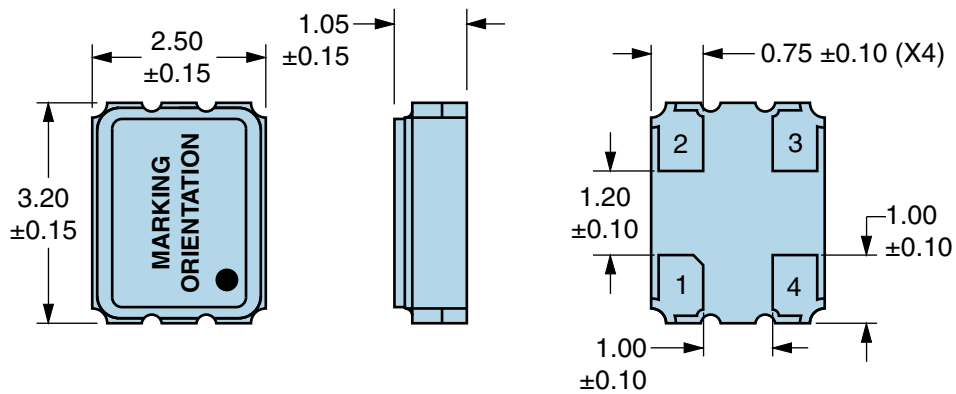
Nominal Frequency	49.152MHz
Frequency Tolerance/Stability	± 50 ppm Maximum (Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at 25°, 260°C Reflow, Shock, and Vibration)
Aging at 25°C	± 5 ppm/Year Maximum
Operating Temperature Range	0°C to +70°C
Supply Voltage	2.5Vdc ± 5 %
Input Current	7mA 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)
RMS Phase Jitter	20pSec Typical, 30pSec Maximum (Fj = 12kHz to 20MHz)
Period Jitter (RMS)	13pSec Typical
Period Jitter (pk-pk)	85pSec Typical, 100pSec 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-49.152M TR

MECHANICAL DIMENSIONS (all dimensions in millimeters)

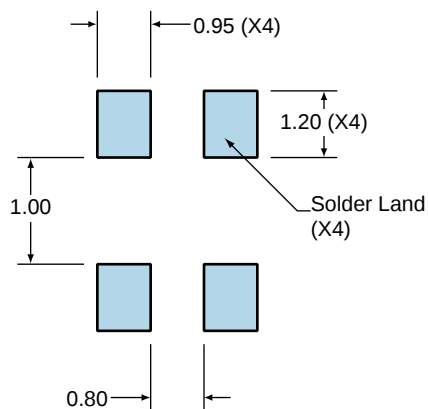


PIN	CONNECTION
1	Tri-State
2	Case Ground
3	Output
4	Supply Voltage

LINE	MARKING
1	E49.152 <i>E=Ecliptek Designator</i>
2	XXXXXX <i>XXXXXX=Ecliptek Manufacturing Identifier</i>

Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ± 0.1

EH4745TTS-49.152M TR

OUTPUT WAVEFORM & TIMING DIAGRAM



EH4745TTS-49.152M TR

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 C_L includes sum of all probe and fixture capacitance.

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Technical drawing of a mechanical part, showing front and side views with dimensions.

Front View Dimensions:

- Overall width: 4.00 ± 0.10
- Distance between hole centers: 2.00 ± 0.05
- Top hole diameter: $\text{DIA } 1.50 +0.10/-0.00$
- Distance from top edge to hole center: 3.50 ± 0.05
- Overall height: 8.00 ± 0.30
- Distance from bottom edge to hole center: 1.75 ± 0.10
- Bottom hole diameter: $\text{DIA } 1.00 \text{ MIN}$
- Distance between rectangular cutouts: 4.00 ± 0.10
- Distance from right edge to cutout center: $A0$

Side View Dimensions:

- Top thickness: 0.60 MAX
- Bottom thickness: 0.10 MAX
- Distance from top edge to cutout center: $B0$
- Distance from bottom edge to cutout center: $K0$

Technical drawing of a circular component, showing a top view (left) and a side view (right).

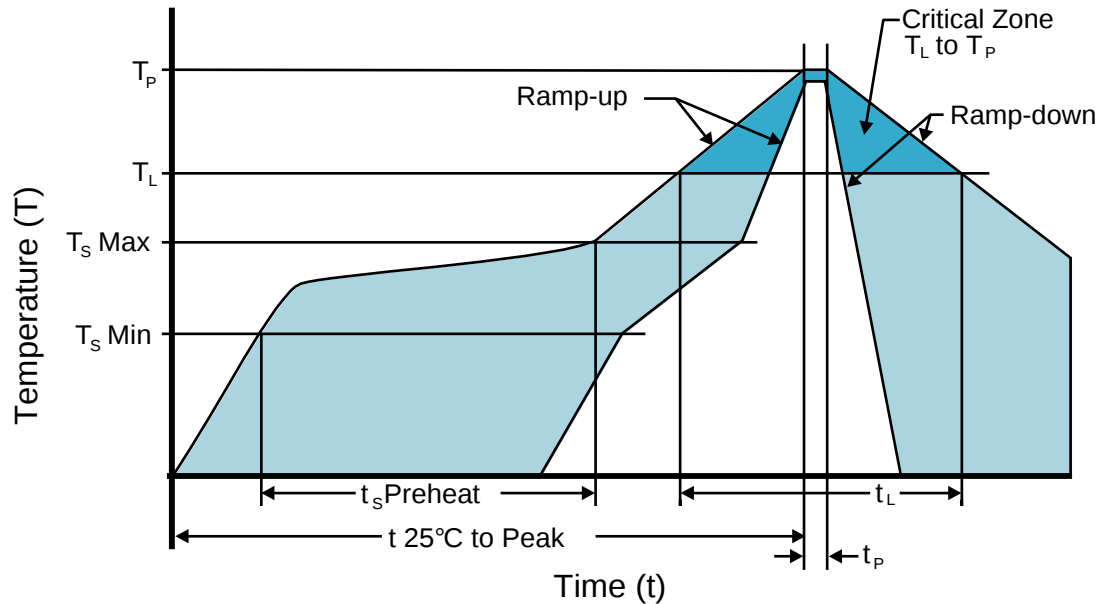
Top View Dimensions:

- Overall Diameter: DIA 50 MIN
- Inner Diameter: DIA 20.20 MIN
- Slot Width: 2.50 MIN Width
- Slot Depth: 10 MIN Depth
- Slot Location: 1.50 MIN
- Access Hole: DIA 40 MIN Access Hole at Slot Location
- Core Diameter: DIA 13.00 ± 0.20
- Tape Slot in Core for Tape Start: 8.40 +1.50/-0.00

Side View Dimensions:

- Overall Height: 180 MAX
- Slot Depth: 14.40 MAX

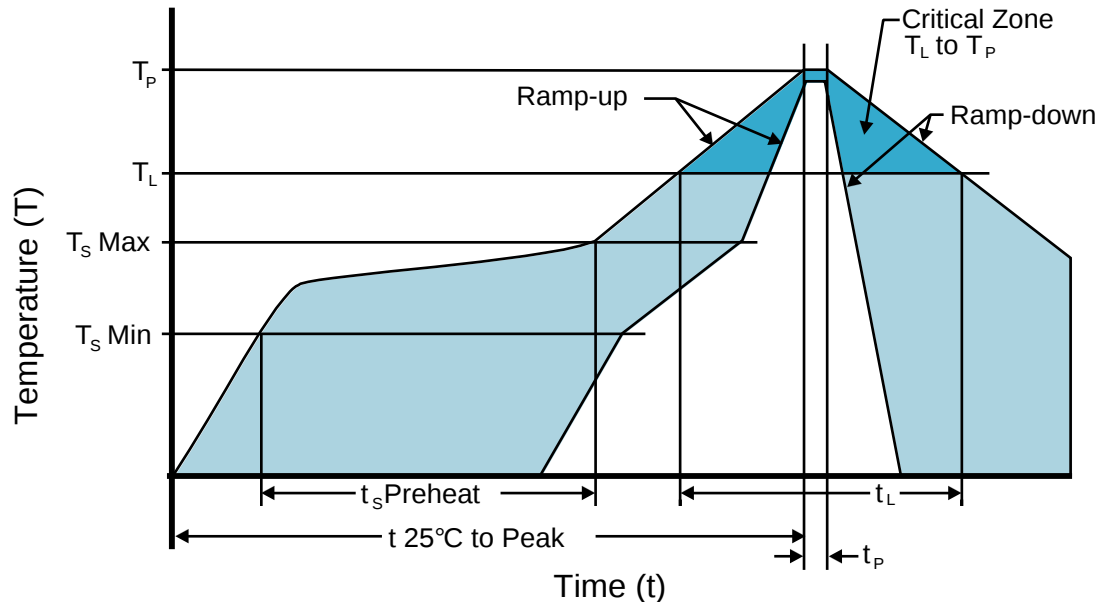
Recommended Solder Reflow Methods



High Temperature Infrared/Convection

$T_s \text{ MAX to } T_L$ (Ramp-up Rate)	3°C/second Maximum
Preheat	
- Temperature Minimum ($T_s \text{ MIN}$)	150°C
- Temperature Typical ($T_s \text{ TYP}$)	175°C
- Temperature Maximum ($T_s \text{ MAX}$)	200°C
- Time ($t_s \text{ MIN}$)	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 ($T_p \text{ Target}$)	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

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.