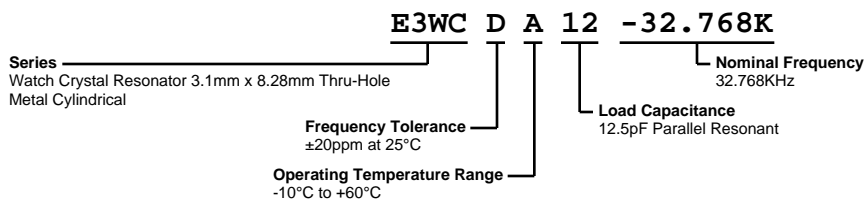


E3WCDA12-32.768K



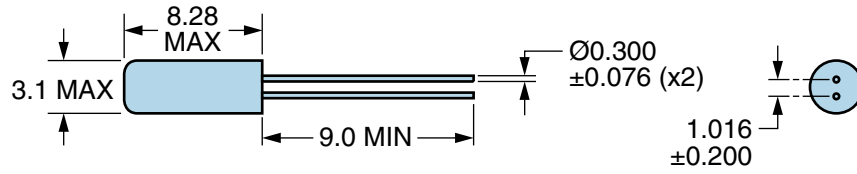
ELECTRICAL SPECIFICATIONS

Nominal Frequency	32.768KHz
Frequency Tolerance	±20ppm at 25°C
Frequency Stability Temperature Coefficient	-0.042ppm/(Change in °C) ² Maximum
Turn over Temperature	25°C ±5°C
Aging at 25°C	±5ppm/year Maximum
Operating Temperature Range	-10°C to +60°C
Load Capacitance	12.5pF Parallel Resonant
Shunt Capacitance	0.85pF Typical, 2pF Maximum
Motional Capacitance	2.0fF Typical
Equivalent Series Resistance	35,000 Ohms Maximum
Mode of Operation	Fundamental
Drive Level	1μWatt Maximum
Crystal Cut	Tuning Fork
Storage Temperature Range	-20°C to +70°C
Insulation Resistance	500 Megaohms Minimum (Measured at 100Vdc)

E3WCDA12-32.768K

MECHANICAL DIMENSIONS (all dimensions in millimeters)

LINE	MARKING
1	32.768K



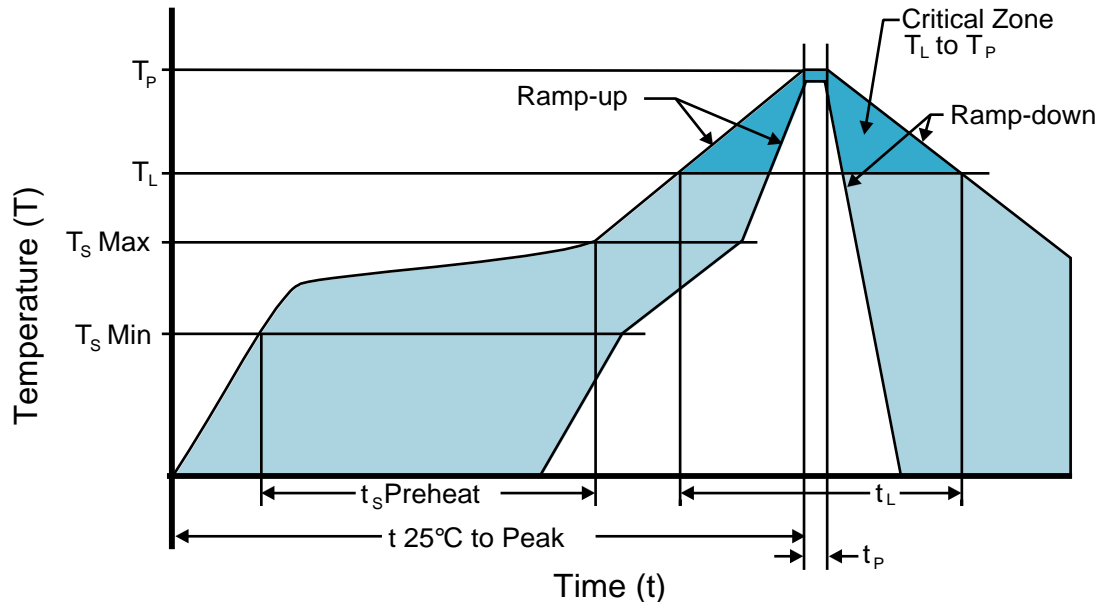
Recommended Solder Reflow Methods



High Temperature Solder Bath (Wave Solder)

T_s MAX to T_L (Ramp-up Rate)	$3^\circ\text{C}/\text{second}$ 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)	$3^\circ\text{C}/\text{second}$ 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 Target)	$250^\circ\text{C} \pm 5^\circ\text{C}$
Time within 5°C of actual peak (t_p)	20 - 40 seconds
Ramp-down Rate	$6^\circ\text{C}/\text{second}$ Maximum
Time 25°C to Peak Temperature (t)	8 minutes Maximum
Moisture Sensitivity Level	Level 1
Additional Notes	Temperatures shown are applied to back of PCB board and device leads only.

Recommended Solder Reflow Methods



Low Temperature Solder Bath (Wave Solder)

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)	30 - 60 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)	245°C Maximum
Target Peak Temperature (T_p Target)	245°C Maximum 1 Time / 235°C Maximum 2 Times
Time within 5°C of actual peak (t_p)	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
Additional Notes	Temperatures shown are applied to back of PCB board and device leads only.

Low Temperature Manual Soldering

185°C Maximum for 10 seconds Maximum, 2 times Maximum. (Temperatures shown are applied to back of PCB board and device leads only.)

High Temperature Manual Soldering

260°C Maximum for 5 seconds Maximum, 2 times Maximum. (Temperatures shown are applied to back of PCB board and device leads only.)