

REGULATORY COMPLIANCE



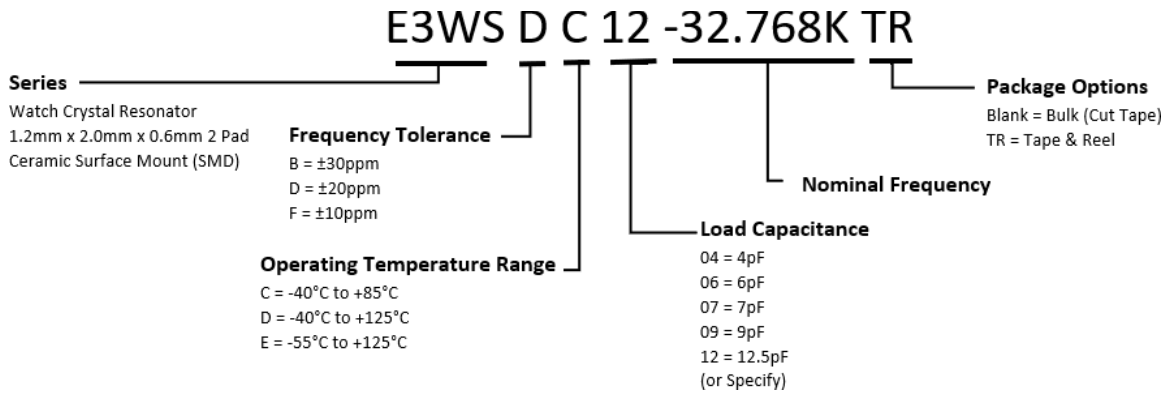
ITEM DESCRIPTION

Watch Crystal Resonator 1.2mm x 2.0mm x 0.6mm 2 Pad Plastic Surface Mount (SMD) 32.768kHz

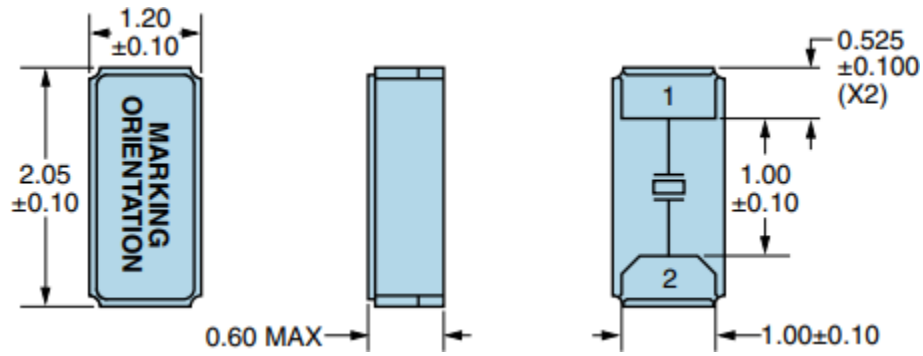
ELECTRICAL SPECIFICATIONS

Nominal Frequency	32.768kHz
Frequency Tolerance (at 25°C)	±20ppm (See Options)
Load Capacitance	12.5pF (See Options)
Operating Temperature Range	-40°C to +85°C (See Options)
Storage Temperature Range	-55°C to +125°C
Turnover Temperature	+25°C±5°C
Mode of Operation	Flexural Mode (Tuning Fork)
Frequency Stability	-0.03ppm/(Change in °C) ² Typical, -0.04ppm/(Change in °C) ² Maximum, Parabolic Curve
Equivalent Series Resistance	90,000 Ohms Maximum (-40°C to +85°C Option) 110,000 Ohms Maximum (-40°C to +125°C Option)
Drive Level	0.5µWatt Maximum
Aging (at 25°C)	±2ppm/First Year Maximum
Quality Factor	9000 Minimum
Shunt Capacitance (Co)	0.9 pF ~ 1.2pF Typical
Insulation Resistance	500 Megaohms Minimum (Measured at 100Vdc ±15Vdc)

PART NUMBERING GUIDE

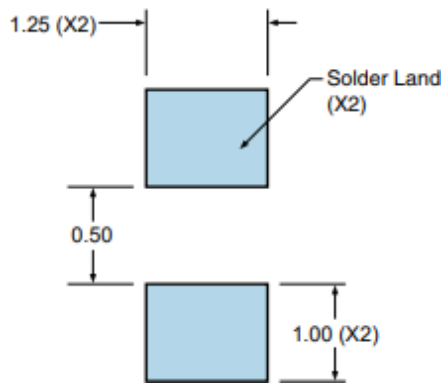


MECHANICAL DIMENSIONS



Note: Due to material availability, the outline and finish color of the component may vary. This variation in no way affects the electrical performance of the product.

SUGGESTED SOLDER PAD LAYOUT



PIN	CONNECTION
1	Crystal
2	Crystal

All Tolerances are ± 0.1

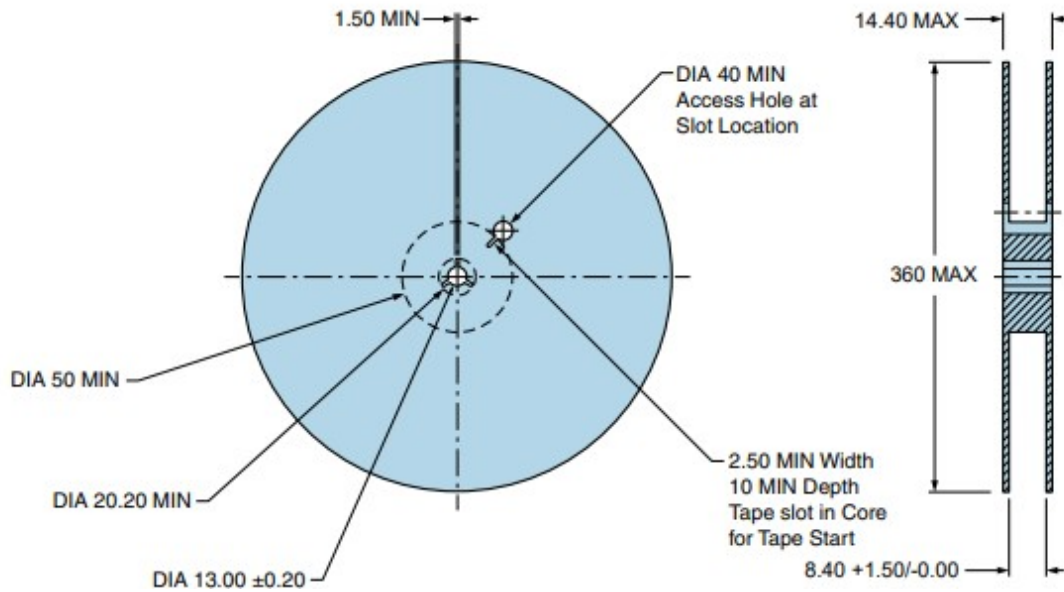
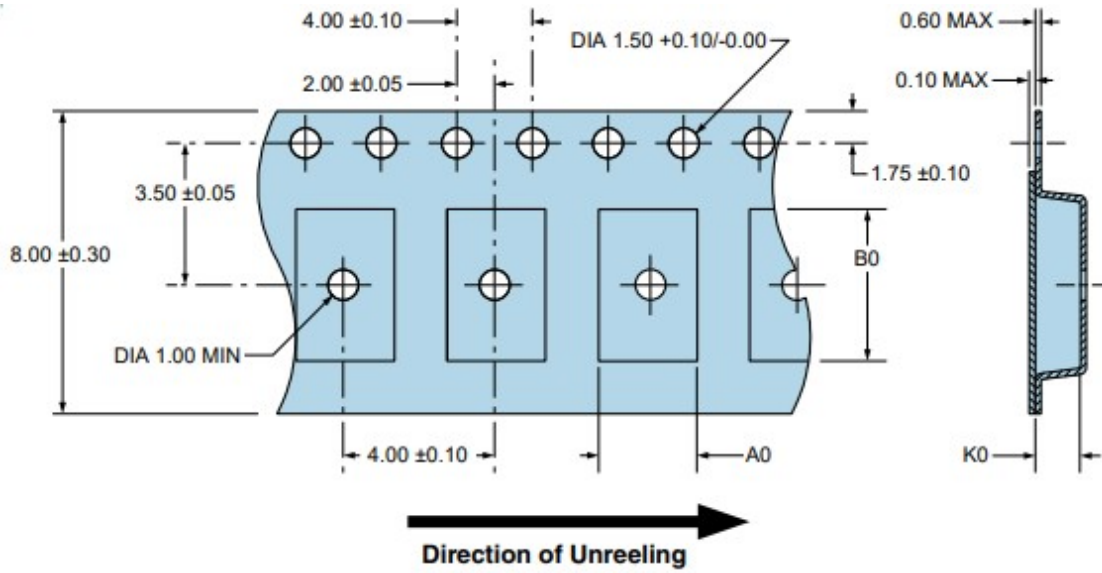
All Dimensions in Millimeters

TAPE & REEL DIMENSIONS

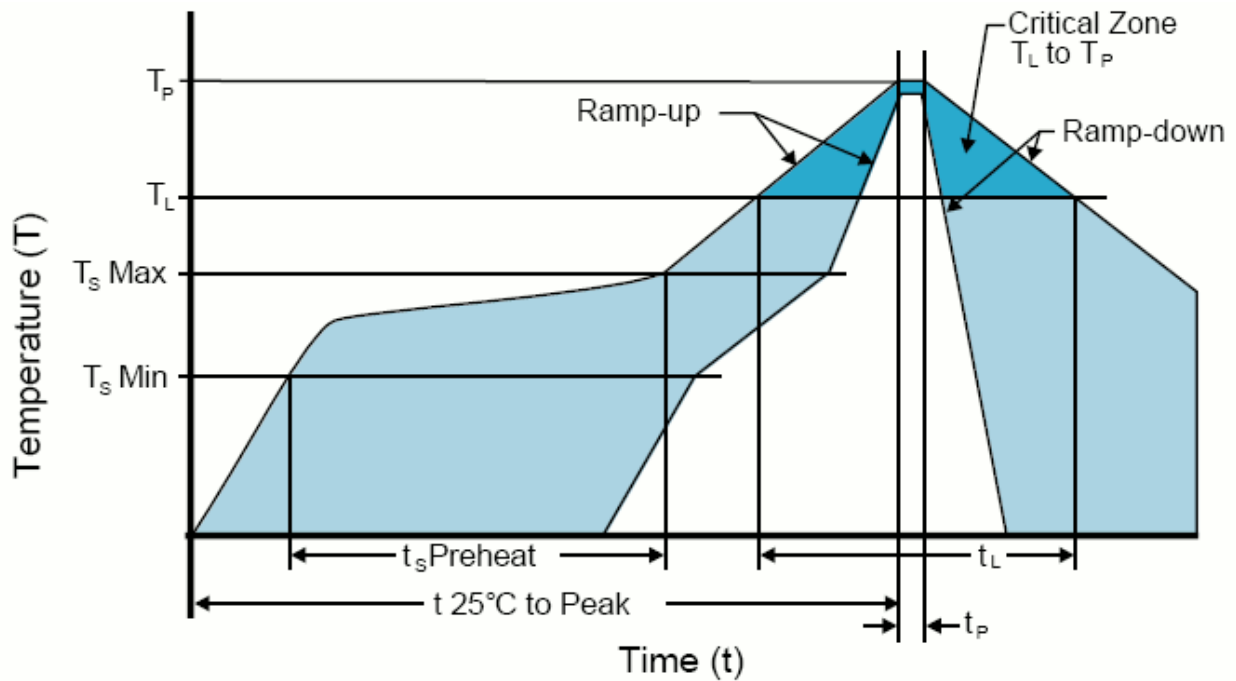
Quantity per Reel: 3000 Units

All Dimensions in Millimeters

Compliant to EIA-481



RECOMMENDED SOLDER REFLOW METHODS

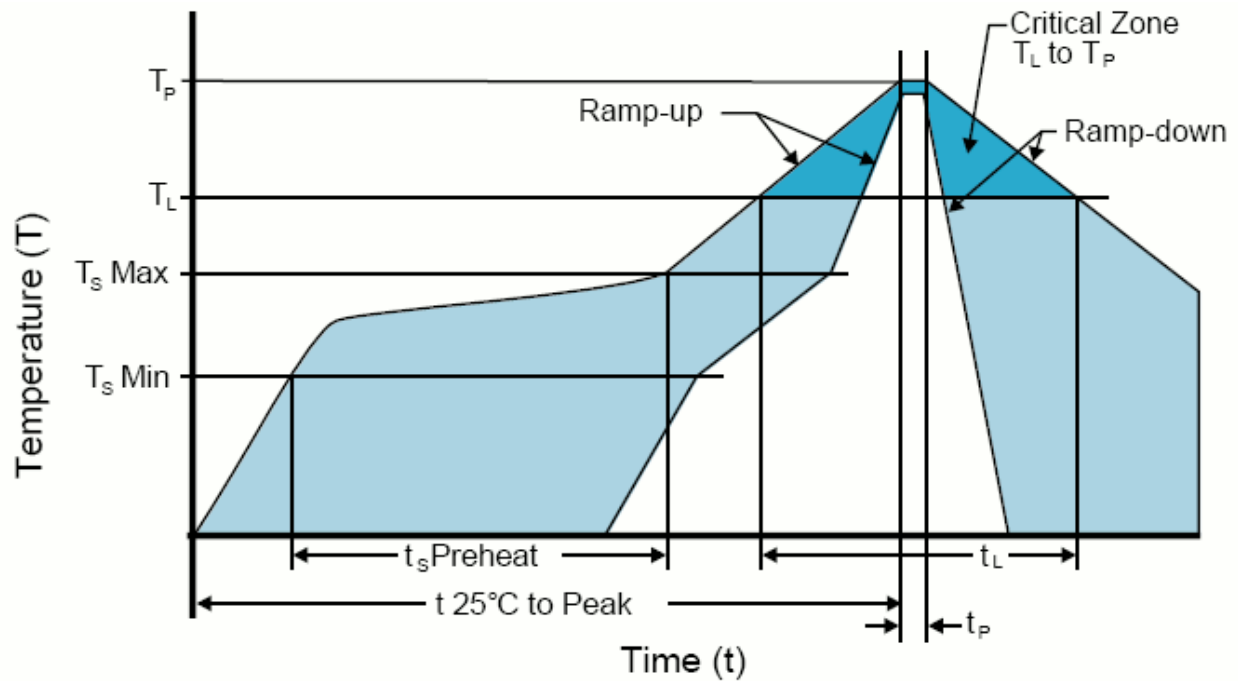


LOW TEMPERATURE INFRARED/CONVECTION 240°C	
T _s MAX to T _L (Ramp-up Rate)	5°C/Second Maximum
Preheat	
- Temperature Minimum (T _s MIN)	N/A
- Temperature Typical (T _s TYP)	150°C
- Temperature Maximum(T _s MAX)	N/A
- Time (t _s)	60 - 120 Seconds
Ramp-up Rate (T _L to T _p)	5°C/Second Maximum
Time Maintained Above:	
- Temperature (T _L)	150°C
- Time (t _L)	200 Seconds Maximum
Peak Temperature (T _p)	245°C Maximum
Target Peak Temperature (T _p Target)	245°C Maximum 2 Times / 230°C Maximum 1 Time
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
Additional Notes	Temperatures shown are applied to body of device.

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to body of device.)

RECOMMENDED SOLDER REFLOW METHOD



LOW TEMPERATURE INFRARED/CONVECTION 245°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)	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 2 Times / 230°C Maximum 1 Time
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
Additional Notes	Temperatures shown are applied to body of device.

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to body of device.)

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to body of device.)