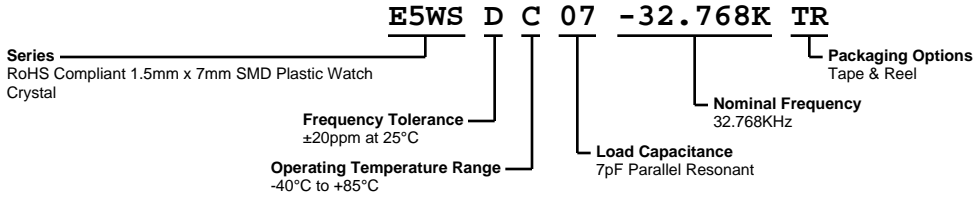


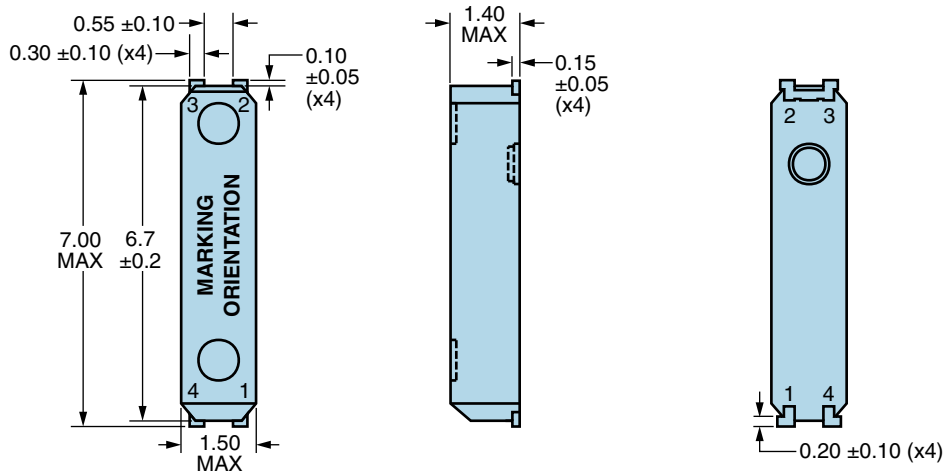
# E5WSDC07-32.768K TR



## ELECTRICAL SPECIFICATIONS

Nominal Frequency	32.768KHz
Frequency Tolerance	$\pm 20\text{ppm}$ at 25°C
Frequency Stability	Parabolic $-0.035\text{ppm}/(\text{Change in } ^\circ\text{C})^2$ Maximum
Aging at 25°C	$\pm 3\text{ppm}/\text{year}$ Maximum
Operating Temperature Range	-40°C to +85°C
Load Capacitance	7pF Parallel Resonant
Shunt Capacitance (C0)	0.85pF Typical, 2pF Maximum
Motional Capacitance	1.9fF Typical
Equivalent Series Resistance	65,000 Ohms Maximum
Mode of Operation	Tuning Fork, Turn Over Temperature at 25°C $\pm 5^\circ\text{C}$
Drive Level	1 $\mu$ Watt Maximum
Storage Temperature Range	-55°C to +125°C
Insulation Resistance	500 Megaohms Minimum at 100Vdc

## MECHANICAL DIMENSIONS (all dimensions in millimeters)



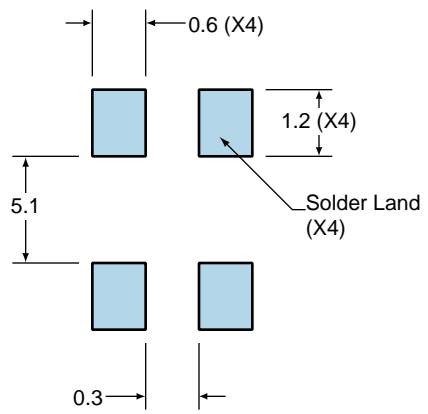
PIN	CONNECTION
1	Crystal
2	Connected to Pin 3
3	Connected to Pin 2
4	Crystal

LINE	MARKING
1	<b>CYXXXXX</b> C=Frequency Code Y=Load Capacitance XXXXX=Lot Code (5 Digits Maximum)

# E5WSDC07-32.768K TR

## Suggested Solder Pad Layout

All Dimensions in Millimeters

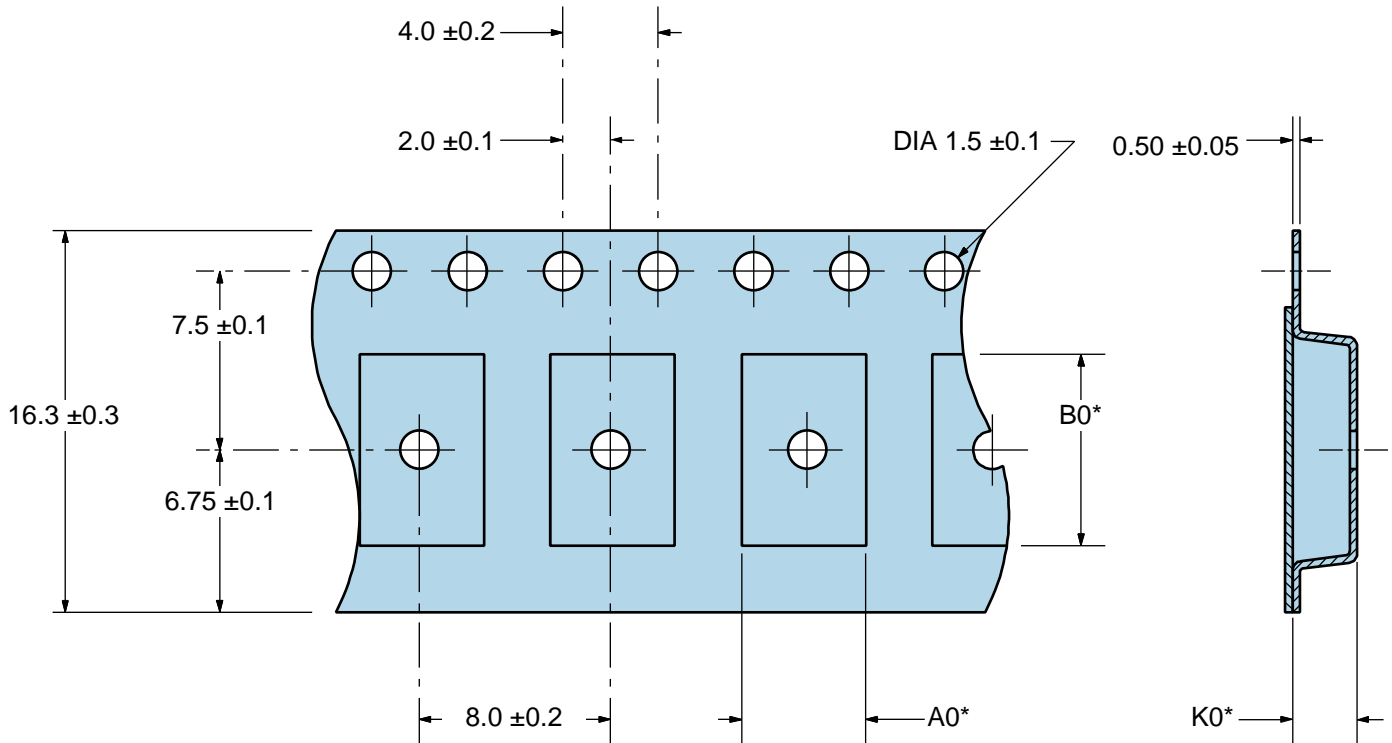


All Tolerances are  $\pm 0.1$

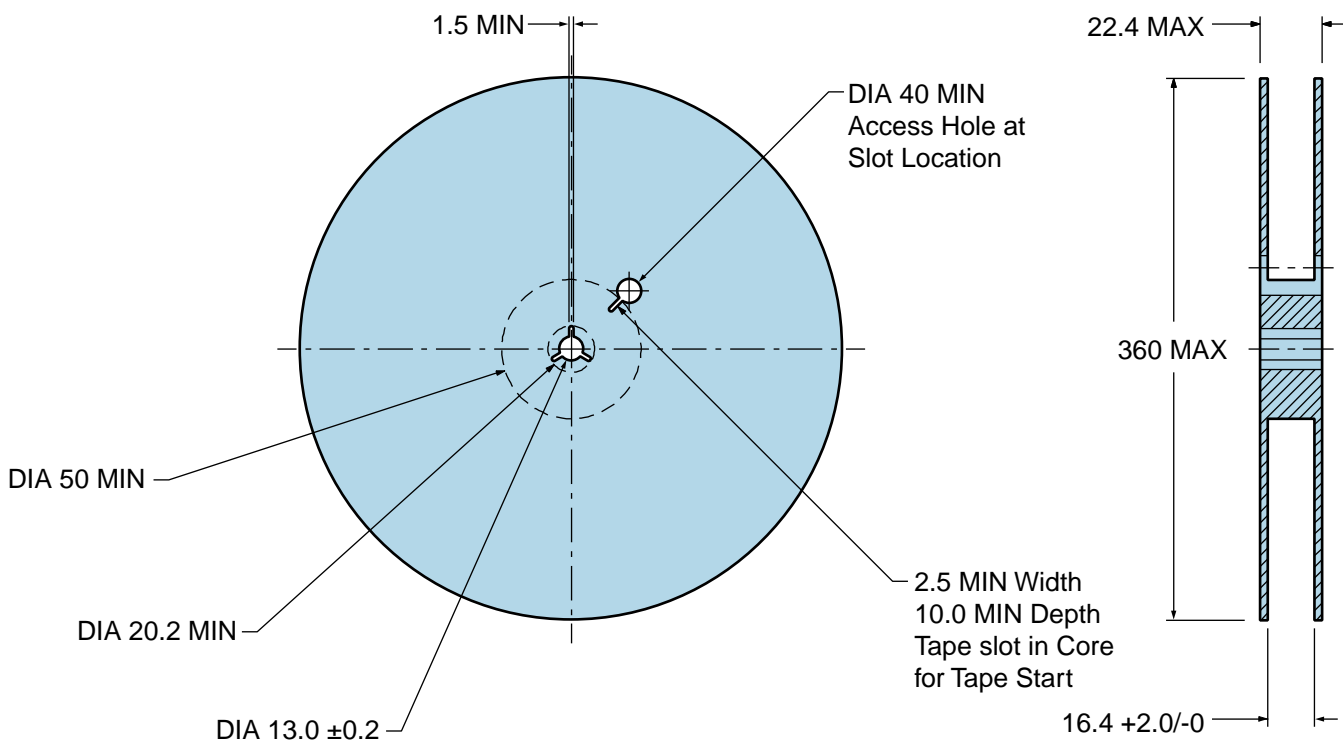
# E5WSDC07-32.768K TR

## Tape & Reel Dimensions

Quantity Per Reel: 3,000 units



\*Compliant to EIA 481A



## Recommended Solder Reflow Methods



### High Temperature Infrared/Convection

<b><math>T_S</math> MAX to <math>T_L</math> (Ramp-up Rate)</b>	3°C/second Maximum
<b>Preheat</b>	
- 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
<b>Ramp-up Rate (<math>T_L</math> to <math>T_P</math>)</b>	3°C/second Maximum
<b>Time Maintained Above:</b>	
- Temperature ( $T_L$ )	217°C
- Time ( $t_L$ )	60 - 150 Seconds
<b>Peak Temperature (<math>T_P</math>)</b>	260°C Maximum for 10 Seconds Maximum
<b>Target Peak Temperature (<math>T_P</math> Target)</b>	250°C +0/-5°C
<b>Time within 5°C of actual peak (<math>t_p</math>)</b>	20 - 40 seconds
<b>Ramp-down Rate</b>	6°C/second Maximum
<b>Time 25°C to Peak Temperature (t)</b>	8 minutes Maximum
<b>Moisture Sensitivity Level</b>	Level 1
<b>Additional Notes</b>	Temperatures shown are applied to body of device.

## Recommended Solder Reflow Methods



### Low Temperature Infrared/Convection 245°C

<b><math>T_S</math> MAX to <math>T_L</math> (Ramp-up Rate)</b>	5°C/second Maximum
<b>Preheat</b>	
- 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
<b>Ramp-up Rate (<math>T_L</math> to <math>T_P</math>)</b>	5°C/second Maximum
<b>Time Maintained Above:</b>	
- Temperature ( $T_L$ )	150°C
- Time ( $t_L$ )	200 Seconds Maximum
<b>Peak Temperature (<math>T_P</math>)</b>	245°C Maximum
<b>Target Peak Temperature (<math>T_P</math> Target)</b>	245°C Maximum 2 Times / 230°C Maximum 1 Time
<b>Time within 5°C of actual peak (<math>t_p</math>)</b>	10 seconds Maximum 2 Times / 80 seconds Maximum 1 Time
<b>Ramp-down Rate</b>	5°C/second Maximum
<b>Time 25°C to Peak Temperature (t)</b>	N/A
<b>Moisture Sensitivity Level</b>	Level 1
<b>Additional Notes</b>	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 device leads only.)

### High Temperature Manual Soldering

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