

Cylindrical Surface Mount Crystal

10.0 x 3.0mm Cold Weld Miniature With Optional Clip

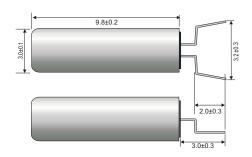


## **Specifications**

Part Number		W30SMR
Frequency		32.768kHz
Mode of Operation		Fundamental
Frequency Stability	Calib. Tol. @ 25°C	±20ppm
	Parabolic Coefficient	-0.034 ±0.006ppm/°C
	Aging/Year (fa)	±3ppm Max
Temp. Range	Turnover (To)	25°C ±5°C
	Operating (TOPR)	-40°C ~ +85°C
	Storage (TSTG)	-40°C ~ +85°C
Drive Level (DL)		1 μW Max
nce	Load	12.5pF
Capaciance	Shunt	1.35pF
Сар	Ratio	450 Typ
Series Resist. (R <sub>1</sub> )		35kΩ Max
Quality Factor		70,000 Typ
Insulation Resistance(I R)		500MΩ Min
Shock		±5ppm Max

#### Dimensions (mm)

### **Standard Package**



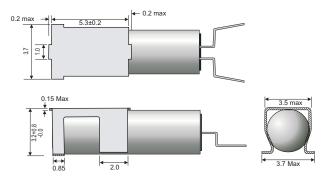


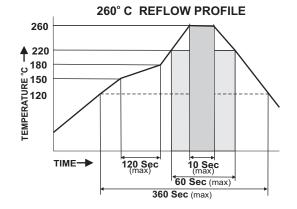




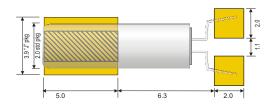


#### "J" Clip Option





#### Recommended Pad Layout (mm)

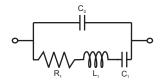




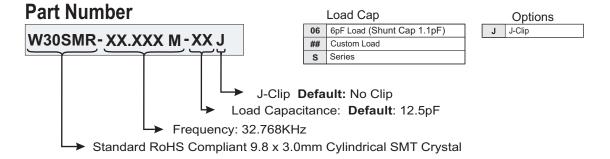
# **Environmental And Mechanical**

Temperature	10 Cycles of -30°C (30Mins), Normal (1Hr), 85°C (30Mins), Normal (1Hr)
Shock	Accelerated at 1000G for 1mS in each perpendicular axis.
Vibration	4 Cycles of 20G acceleration at 20 - 2,000Hz within 4 minutes in each perpendicular axis.
Solder	Peak Temperature of 260°C Max for 10 Seconds with preheat of 160°C for 90±10% for 10 Seconds for a maximum of 2 Cycles.

# **Equivalent Circuit**



- C<sub>o</sub> Shunt Capacitance
- R<sub>1</sub> Equivalant Series Resistance
- L<sub>1</sub> Motion Inductance
- C<sub>1</sub> Motion Capacitance



Example: W30SMR-32.768K 32.768KHz,  $\pm 20$ ppm Xtal with 12.5pF Load, ESR of 35K $\Omega$ , operating at -40°C  $\sim +85$ °C (No Clip) Example: W30SMR-32.768K-6J 32.768KHz,  $\pm 20$ ppm Xtal with 6pF Load, ESR of 35K $\Omega$ , operating at -40°C  $\sim +85$ °C, With J-Clip