

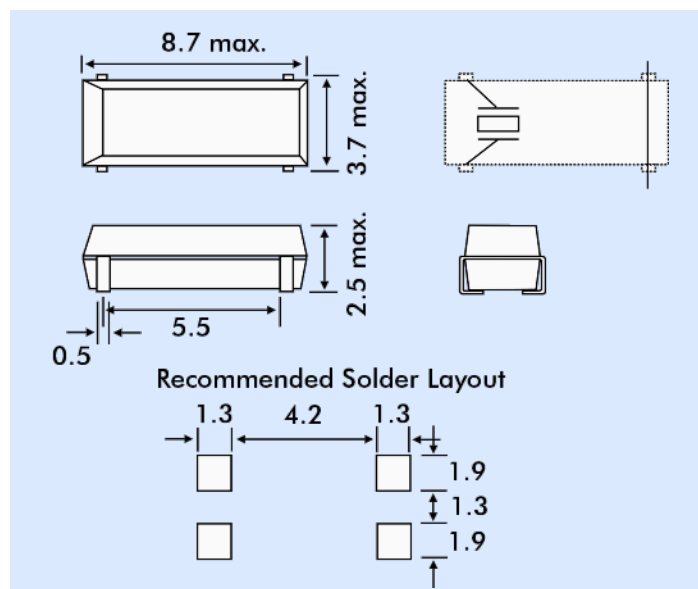
- **Frequency 32.768kHz**
- **Industry-standard package**
- **Compact and low-profile**
- **Supplied on EIA tape and reel**

**DESCRIPTION**

90SMX(S) crystals are miniature surface-mount crystals specifically designed to provide a low-cost and reliable source of real time clock 32.768kHz frequency for mass-market applications. The crystals are low-profile and encapsulated in epoxy resin.

SPECIFICATION

Nominal Frequency:	32.7680kHz
Calibration Tolerance at 25°C:	±20ppm
Load Capacitance (CL):	12.5pF*
Equivalent Series Resistance (ESR):	50k Ohms
Drive level:	1.0 µW max.
Quality Factor:	50,000 minimum
Temperature Coefficient:	-0.035±0.008ppm/°C ² (Parabolic)
Turnover Temperature:	+25°±5°C
Shunt Capacitance:	1.0pF typical
Motional Capacitance:	0.0019pF typical
Capacitance Ratio:	520 typical
Ageing:	±5ppm max. in first year at 25°C
Insulation Resistance:	500M Ohm minimum @100VDC
Crystal Cut:	X-Cut
Operating Temperature Range:	-40° to +85°C
Storage Temperature Range:	-55° to +125°C
Reflow Soldering:	10s maximum at 260°C twice or 180s at 230°C, once.
Shock:	±5ppm max, free drops x3 from 75cm height onto hard wood surface.
Packaging:	EIA tape and reel, 3k pieces/reel
RoHS Status:	Compliant

OUTLINE & DIMENSIONS**PART NUMBER AND SPECIFICATION**

Order stock number: PH32768XS for 32.768kHz ±20ppm, 12.5pF

**STABILITY OVER TEMPERATURE
X-Cut Crystal**