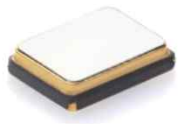
CRYSTAL UNIT

Automotive Grade
SX-A32

- AEC-Q200 Compliant
- Seam Sealed Package
- Fundamental Crystal Design
- Excellent Vibration Resistance & Shock Resistance
- High Frequency Stability
- TS-16949 Certified
- Pb-free and RoHS Compliance



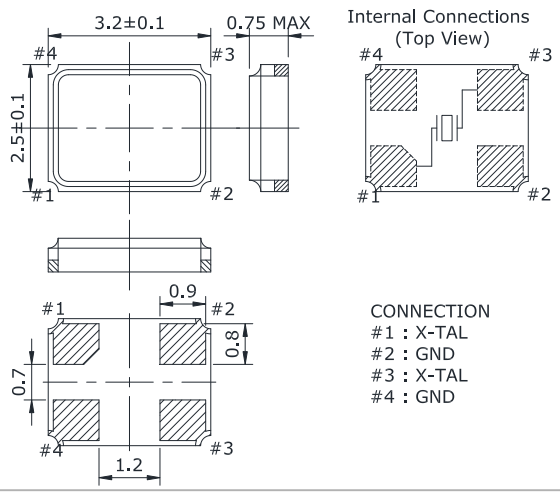
■ ELECTRICAL SPECIFICATIONS

Frequency Range	12.000 to 54.000 MHz
Operating Temperature Range	-40 to +105 ℃, -40 to +125 ℃
Storage Temperature Range	-55 to +125 ℃
Frequency Tolerance (at 25 ℃)	±15, ±30, ±50 ppm(STD), or specify
Frequency Stability Over Operating Temperature Range	±30 to ±100 ppm(-40 to +105 ℃) ±50 to ±100 ppm(-40 to +125 ℃)
Load Capacitance (CL)	12 pF(STD), Custom CL≥8 pF or Series Resonant
Drive Level	10 μW(100 μW) Max.
Shunt Capacitance (C0)	5.0 pF Max.
Aging (at 25 ℃)	±5 ppm/year Max.
Insulation Resistance	500 MΩ Min. at 100 V_{DC}

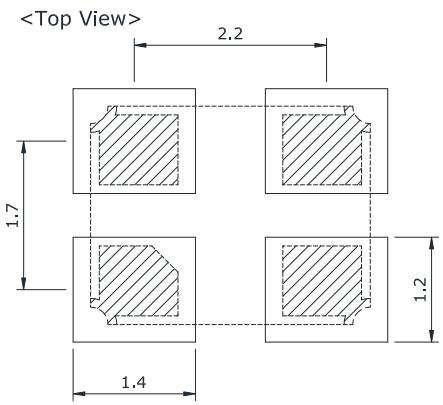
■ EQUIVALENT SERIES RESISTANCE(ESR)

Frequency Range(MHz)	ESR(Ω Max.)	Mode of Oscillation
12.000 ~ 13.999	150	Fundamental
14.000 ~ 15.999	100	Fundamental
16.000 ~ 19.999	80	Fundamental
20.000 ~ 29.999	60	Fundamental
30.000 ~ 54.000	50	Fundamental

■ MECHANICAL DIMENSIONS (mm)



■ LAND PATTERN (mm)



■ PART NUMBERING GUIDE

S P 10 1 30 M7 – 27.00000 – T&R

PACKAGE TYPE
SX-32(3.2×2.5mm)
LOAD CAPACITANCE
10 : 10 pF
SR : SERIES
MODE OF OSCILLATION
1 : FUNDAMENTAL
FREQUENCY TOLERANCE AT 25℃
30 : ±30 ppm
XX: Two digit for Tolerance

PACKAGE OPTION
BLANK : BULK
T&R : TAPE & REEL
FREQUENCY
TABLE 1.
XX: Two digit for Stability

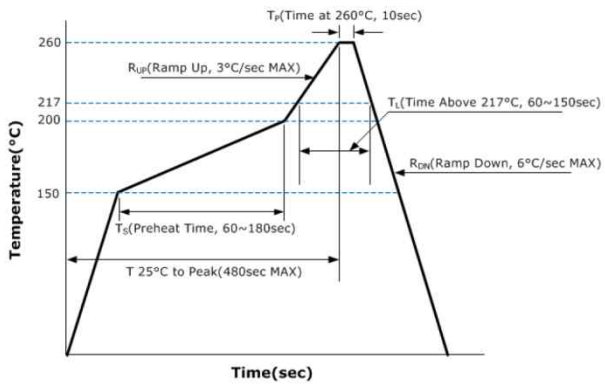
■ TABLE 1.

FREQUENCY STABILITY VS. TEMPERATURE RANGE							
Temp \ Stability		±10	±15	±20	±30	±50	±100
		3	4	5	6	7	8
-10~70℃	D	*	*	*	*	*	*
-20~70℃	E	*	*	*	*	*	*
-30~60℃	F	*	*	*	*	*	*
-20~85℃	G		*	*	*	*	*
-30~70℃	H			*	*	*	*
-30~85℃	I			*	*	*	*
-40~85℃	J			*	*	*	*
-40~90℃	K				*	*	*
-40~105℃	L				*	*	*
-40~125℃	M					*	*

■ ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

High Temperature Exposure	MIL-STD-202 Method 108
Temperature Cycling	JESD22 Method JA-104
Biased Humidity	MIL-STD-202 Method 103
Operational Life	MIL-STD-202 Method 108
Mechanical Shock	MIL-STD-202 Method 213, Conditions C
Vibration	MIL-STD-202 Method 204
Resistance to Soldering Heat	MIL-STD-202 Method 210, Condition B
Solderability	J-STD-002, Method B, D

■ REFLOW PROFILE



■ MARKING GUIDE

LINE 1 : XX.XXX
LINE 2 : S Y WW

Sunny
Year
Week
Frequency in MHz

■ TAPE AND REEL DIMENSIONS

3,000pcs/reel

