

# XQ Type

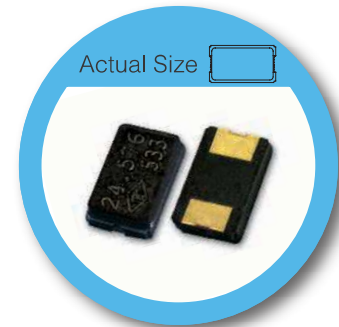
## 8.0 x 4.5 mm Glass Seal SMD Crystal

### FEATURE

- Typical 8.0 x 4.5 x 1.45 mm full ceramic SMD package.
- 16 mm width Tape & Reel package for automatic assembly.

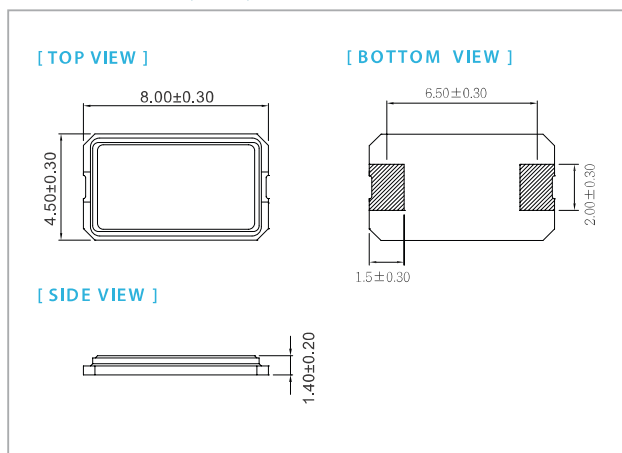
### TYPICAL APPLICATION

- Automotive
- Notebook, Computer Peripherals, Hard Disk
- Office Automation
- Audio & Video

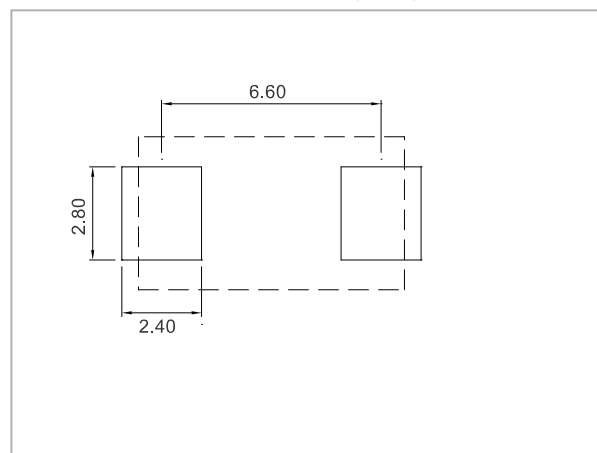


RoHS Compliant

### DIMENSION (mm)



### SOLDER PAD LAYOUT (mm)



### ELECTRICAL SPECIFICATION

Parameter	Min.	Typical	Max.	Unit
Storage Temp. Range	-55	-	125	°C
Level of Drive	-	10	300	µw
Shunt Capacitance (Co)	-	-	7.0	pF
Insulation Resistance	500 MΩ @ DC100V	-	-	
Aging		±5.0		ppm / year

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

### EQUIVALENT SERIES RESISTANCE (E.S.R)

Frequency Range	MODE	E.S.R
7.3728 MHz ≤ Fo < 11 MHz	A1	<110Ω
11 MHz ≤ Fo < 14.1 MHz	A1	< 50Ω
14.1 MHz ≤ Fo < 18 MHz	A1	< 45Ω
18 MHz ≤ Fo < 20 MHz	A1	< 30Ω
20 MHz ≤ Fo < 32 MHz	A1	< 25Ω
32 MHz ≤ Fo < 48 MHz	A3	<110Ω
48 MHz ≤ Fo ≤ 70 MHz	A3	<100Ω

### FREQ. STABILITY vs. TEMP. RANGE

Temp.(°C)	ppm			
	±5	±10	±15	±30
-10 ~ +60	△	○	○	○
-20 ~ +70	X	△	○	○
-40 ~ +85	X	X	○	○

\* ○: Available △:Conditional X: Not available

### FREQ. STABILITY vs. WIDE TEMP. RANGE

Temp.(°C)	ppm			
	±15	±20	±30	±50
-40 ~ +105	△	○	○	○
-40 ~ +125	X	X	△	○

\* ○: Available △:Conditional X: Not available

**Note: not all combination of options are available. Other specifications may be available upon request.**

Specifications subject to change without notice.

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# Model Numbering Guide – Crystal Units

## Available options

Type	package (mm)	Load Capacitance (pF)	Freq. Tol. @25°C (ppm)	Freq. Stability (ppm)	Temp. Range(°C)	Special Requirement	Oscillator Mode	Appearance	Lead Free	Dash	Freq. (MHz)
X: X'tal (MHz series)	3: 1.6x1.2 Z: 2.0x1.6 Y: 2.5x2.0 X: 3.2x2.5 V: 5.0x3.2 (4Pads) R: 6.0x3.5 2: 3.2x2.5 S: 5.0x3.2 (2Pads) Q: 8.0x4.5 I: 11.1x4.68 (U4) J: 13.0x4.85 (U4B)	L: 6 O: 7 A: 8 B: 9 C: 10 D: 12 E: 15 F: 16 G: 18 H: 20 P: 22 Q: 25 I: 30 J: 32 K: 50 N: No Standard S: Series	A: ±5 B: ±10 P: ±15 C: ±20 D: ±25 E: ±30 F: ±40 G: ±50 H: ±100 I: ±150	A: ±5 B: ±10 P: ±15 C: ±20 D: ±25 E: ±30 F: ±40 G: ±50 H: ±100 I: ±150 Z: ±150 above	A: +10~+40 B: +0~-55 E: +0~+85 I: -10~+60 C: -20~+70 D: -30~+85 L: -40~+85 M: -40~+95 J: -40~+105 H: -40~+125 G: -40~+150 F: -55~+125	A: For Automotive B: Spurious D: DLD N: No Special P: Pullability S: Several	A: AT Fundamental T: AT 3 <sup>rd</sup> Overtone	N : Normal	F: RoHS Compliant	-	XX.XXXXX
X: X'tal (32.768 kHz series)	A: 3.0x8.0 (Dip) B: 1.0x4.0 (Dip) /2.0x6.0 (Dip) D: 2.0x1.2 (2Pads) 3.2x1.5 (2Pads) /4.1x1.5 (2Pads) N: 6.9x1.4 (4Pads) /8.0x3.8 (4Pads)	L: 6 O: 7 B: 9 M: 12.5	C: ±20	H: ±100 I: ±150 Z: ±150 above	C: -20~+70 L: -40~+85	N: No Special	D: Tuning Fork	N: Normal (XA 3.0x8.0 size XB 2.0x6.0 size) J: XB 1.0x4.0 size C: XD 4.1x1.5 size D: XD 3.2x1.5 size M: XD 2.0x1.2 size E: XN 8.0x3.8 size H: XN 6.9x1.4 size	D: RoHS Compliant B: Non-RoHS Compliant	-	0.032768

**X Y C D D L N A N F – 40.000000**

\*Not all combinations of options are available.

### Example: XYCDDLNANF-40.000000

<b>Type</b>	X'tal
<b>Package</b>	2.5 x 2.0 mm
<b>Load Capacitance</b>	10 pF
<b>Freq. Tol.</b>	±25ppm
<b>Freq. Stability</b>	±25ppm
<b>Temp Range</b>	-40~+85 °C
<b>Special Requirement</b>	No Special
<b>Oscillator Mode</b>	AT Fundamental
<b>Appearance</b>	Normal Appearance
<b>Lead Free</b>	RoHS Compliant
<b>Frequency</b>	40.000000 MHz