

# Quartz Crystal Resonator (MHz)

## SY



### General Description

The SY are metal package AT Cut crystals pin-to-pin compatible with NDK CP12

### Features

A great number of standard frequencies.  
Higher frequency pullability and lower equivalent series resistance.  
Lower cost and highly mass production capability. 100% Pb-free, RoHS-compliant

### Main Applications

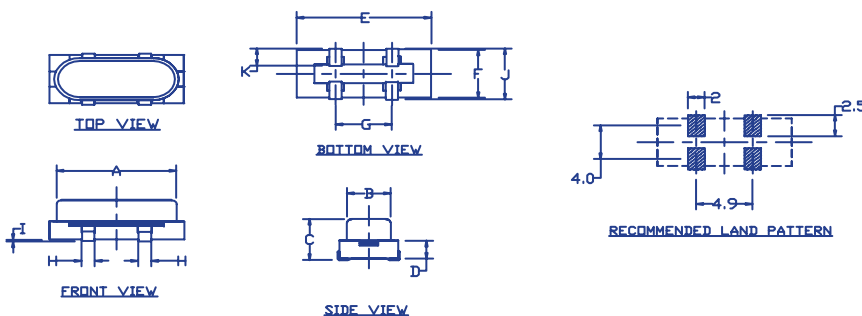
TV, STB, LCDM and Cable Modem

## Electrical characteristics

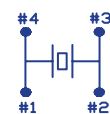
Item	Symbol	Values	
Part number		SY-E2 / SY-E3 / SY-E5	
Mode of vibration		Fund.	3rd Ov
Frequency range	F	3.01 - 50	26 - 100
Frequency tolerance (@ +25°C)	$\Delta f/F$	$\pm 30\text{ppm}$ or user spec	
Frequency stability	$\Delta f/F$	$\pm 50\text{ppm}$ or user spec	
Operating temp. range	To	-20°C/+70°C or -40°C/+85°C	
Storage temp. range	Ts	-55°C / +135°C	
Load capacitance	Cl	12pF or user spec	
Resonance Resistance	R1	125 - 25	120 - 60
Shunt capacitance	CO	< 7pF	
Insulation resistance		>500 M $\Omega$ / DC100V	
Drive level	P	1mW max	
Aging	$\Delta f/F$	$\pm 5\text{ppm}$ max @ +25°C	

Table 1	3ppm	5ppm	10ppm	15ppm	20ppm	30ppm	50ppm	100ppm
0°C / +50°C			•	•	•	•	•	•
-10°C / +60°C			•	•	•	•	•	•
-20°C / +70°C			•	•	•	•	•	•
-40°C / +85°C				•	•	•	•	•
-40°C / +105°C						•	•	•
-55°C / +125°C							•	•

## Dimensions



ITEM	DIMENSION	
A	10.16 Max.	
B	3.8 Max.	
C	XTAL TYPE	
	S6	4.1 Max.
	S7	4.5 Max.
	S8	5.5 Max.
D	1.9 Max.	
E	11.9±0.1	
F	5.2 Max.	
G	4.9	
H	1.0±0.1	
I	0.2±0.1	
J	5.5 Max.	
K	1.50±0.2	



ELECTRODE ARRANGEMENT

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## Part Number Generator

**SY-S6**    **10.000000**    **F**    **AT**    **P20**    **E**    **F**    **H**    **TR**    **xxx**  
 0                    1                    2                    3                    4                    5                    6                    7                    8                    9

**0** : Holder  
 SY-S6  
 SY-S7  
 SY-S8

**1** : Frequency (MHz)  
 □□□.□□□□□□□□  
 max 10 digits including comma

**2** : Vibration mode  
 F = Fund.  
 X = 30v

**3** : Cut  
 AT

**4** : Load capacitance  
 S=Serie  
 P20=20pF  
 P30=30pF  
 etc

**5** : Tolerance  
 A=  $\leq \pm 30$ ppm  
 C=  $\leq \pm 20$ ppm  
 E=  $\leq \pm 10$ ppm

**6** : Op. temp. range  
 F=-20/+70  
 N=-40/+85

**7** : Stability  
 A1 <  $\pm 100$ ppm  
 A <  $\pm 50$ ppm  
 B <  $\pm 40$ ppm  
 C <  $\pm 35$ ppm  
 D <  $\pm 30$ ppm  
 E <  $\pm 25$ ppm  
 F <  $\pm 20$ ppm  
 G <  $\pm 15$ ppm  
 H <  $\pm 10$ ppm

**8** : Packing  
 TR = Tape & Reel

**9** : Customized code  
 Note : factory use

Remark : specifications subject to change without prior notice. Please confirm with our sales