

- Low height SMD package for low frequencies
- Frequency range 3.2MHz to 70.0MHz
- Fully RoHS compliant
- Standard EIA tape and reel

## DESCRIPTION

The MS2 crystal provides an ideal source of low frequency clock signals (under 10MHz) in a low-profile SMD package height of 2.0mm. The crystal features a glass to metal substrate and resistance-welded metal lid offering enhanced hermetic properties. Premium grade AT-strip crystal plate is mounted at both ends for high shock and low g sensitivity.

## SPECIFICATION

<b>Frequency Range</b>	
AT-Cut Fundamental:	3.2MHz to 30.0MHz
AT-Cut 3rd Overtone:	27.0MHz to 70.0MHz
BT-Cut Fundamental:	24.0MHz to 48.0MHz
Calibration Tolerance at 25°C*:	from ±10ppm at 25°C (±30ppm standard)
<b>Frequency stability</b>	
AT-Cut:	±30ppm over -10° to +60°C
BT-Cut:	±100ppm over -10° to +60°C
Storage Temperature:	-40°~+85°C
Equivalent Series Resistance:	See table
Shunt Capacitance (C0):	7pF maximum
Load Capacitance (CL):	Series or from 10pF to 32pF (Customer specified CL)
Ageing:	<±5ppm per year at +25°C
Drive level:	0.5mW maximum
Reflow Soldering:	10s maximum at 260°C twice or 180s at 230°C, once.
Packaging:	24mm EIA tape and reel, 1k per.

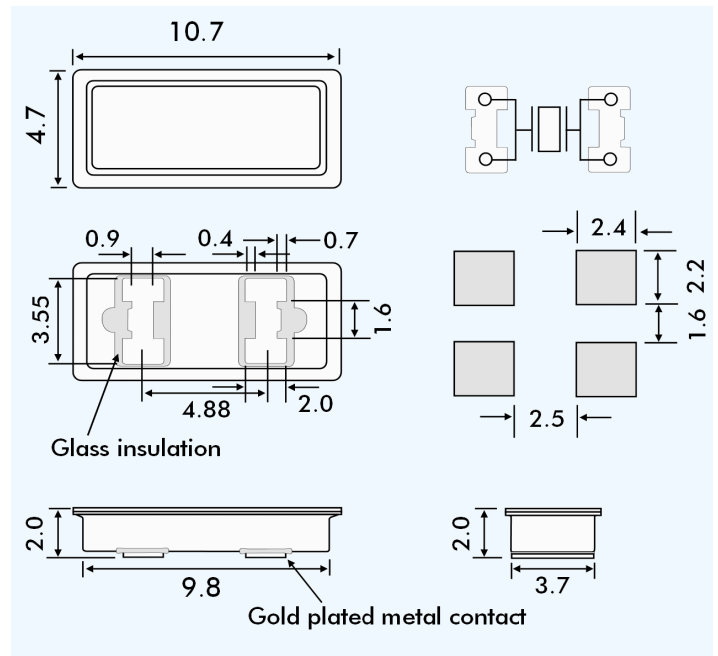
## EQUIVALENT SERIES RESISTANCE

Frequency Range MHz	ESR Ohms Max.
AT-Cut Fundamental	
3.2~3.4	300
3.5~4.0	150
4.1~4.9	120
5.0~5.9	100
6.0~8.9	80
9.0~9.9	60
10.0~12.9	50
13.0~30.0	45
AT-Cut 3rd Overtone	
25.0~30.0	150
30.0~50.0	100
50.0~70.0	80
Frequency Range MHz	ESR Ohms Max.
BTCut Fundamental	
24.0~40.0	40

## 10.7mm x 4.7mm x 2.0mm SMD



## OUTLINE & DIMENSIONS



## PART NUMBER GENERATION

Part numbers for MS2 crystals are generated as follows:

Example: 3.2000MHz MS2 30/30/-10+60/12pF/60R

