

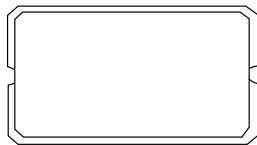
# CERAMIC PACKAGE AT CUT SURFACE MOUNT CRYSTALS

**MODEL SM2**  
**MODEL S2A**

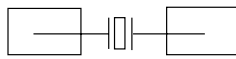
Model	SM2 / S2A
Frequency	12.0MHz-100.0 MHz
Oscillation Mode	12.0-30.0 MHz (Fund)    30.0-60.0 MHz (3rd)    60.0-100.0 MHz (5th)
Frequency Tolerance @25°C	± 50ppm    Optional Tolerances Available
Temperature Stability	± 50ppm    0°C~ +70°C Standard, Extended Temperature Ranges Available
Storage Temperature Range	-55°C~ +125°C
Equivalent Series Resistance	Resistance Specifications Below (See Chart Below)
Shunt Capacitance	7pF Max
Load Capacitance	Series resonance, 16pF, 20pF, 30pF
Drive level	10~100µW (100µW Correlation)
Aging for first year	± 5ppm Max
Reflow Soldering Condition	10 Seconds Max at +235°C ± 5°C

**DIMENSIONS**    Inches  
(mm)

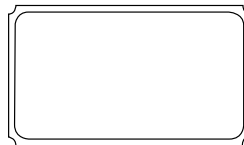
**SM2**



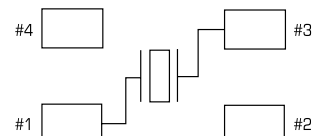
Connections (Top View)



**S2A**

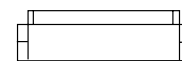
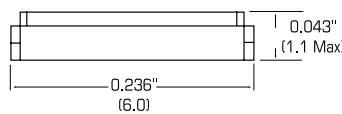
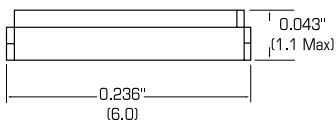


Connections (Top View)

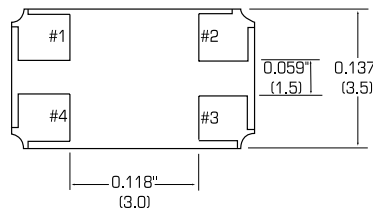
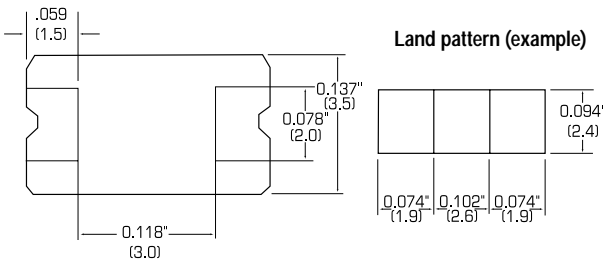


Pin Connection

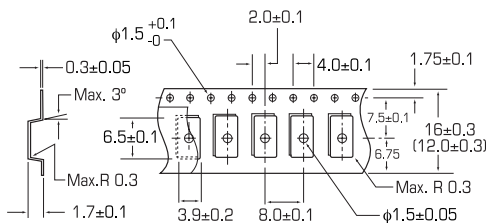
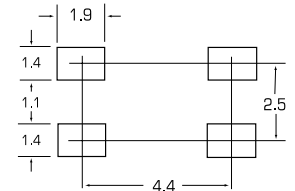
#1, #3: X'tal    #2, #4: NC



Land pattern (example)



Land pattern (example)



1,000 pcs. per reel  
(178mm dia.)

Frequency	Equivalent Series Resistance	Oscillation Mode
12.0 ~ 16.0MHz	80Ω Max	Fundamental
16.0 ~ 20.0MHz	60Ω Max	Fundamental
20.0 ~ 50.0MHz	40Ω Max	Fundamental
50.0 ~ 100.0MHz	100Ω Max	3rd Overtone

