

# Package: TDS-2520F

## Ultra Miniature Surface Mount Crystal

### ■ Feature

- Minimal footprint, low profile (2.5×2.0, 0.45±0.05).
- Hermetically sealed - [Seam welding methodology]
- High Reflow Temperature Tolerant.
- RoHS compliant - Lead Free

### ■ Applications

Cellular Phones, Bluetooth, WLAN, Zigbee

### ■ Standard Specifications

Characteristic	Value
Size (mm)	2.5×2.0, 0.50t max.
Overtone Order	Fundamental
Frequency Range (MHz)	16 to 48 (See Table 1)
Equivalent Series Resistance (Ω)	50max to 80 max.
Drive Level (μWatts)	10, 30
Operating Temperature Range	See Table 2
Frequency Temperature Characteristics (in reference to 25 °C)	See Table 2



### ■ Table 1 Typical Frequencies

Frequency (MHz) - ESR	
16.369[ESR=80 max]	19.200[ESR=80 max]
26.000[ESR=60 max]	38.400[ESR=60 max]
40.000[ESR=60 max]	44.000[ESR=60 max]
48.000[ESR=60 max]	

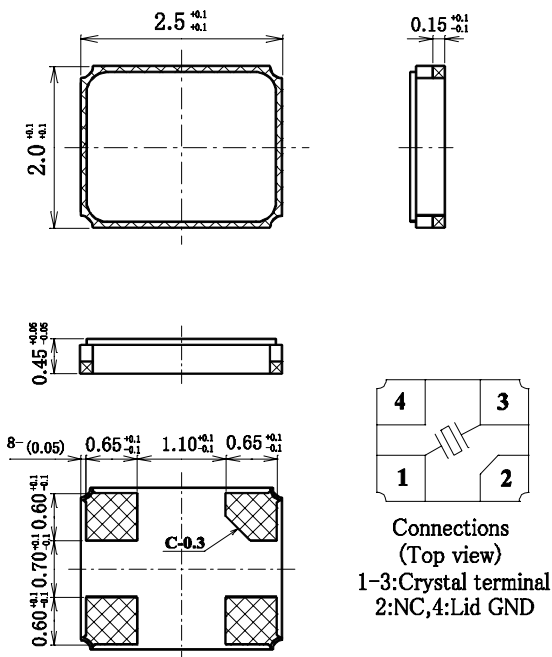
Note:

Modified specifications are available upon request for specific applications.

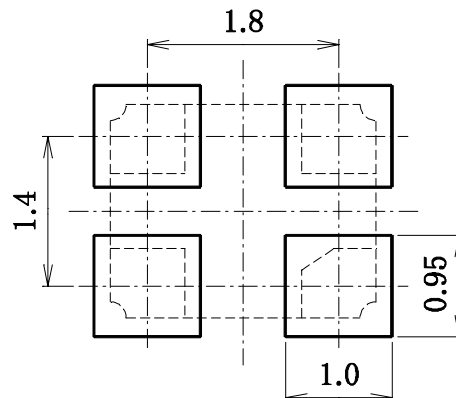
### ■ Table 2 Frequency vs. Temperature Characteristics

Temperature Range	Stability(ppm)	Frequency Tolerance(ppm@25 °C)
-10 to +60 °C	±10 max. , ± 15 max.	±10 max. , ± 20 max. (25 °C ± 3°C)
-20 to +70 °C	±12 max. , ± 20 max.	
-30 to +85 °C	±12 max., ± 15 max., ± 20 max.	

### ■ Outline Dimensions



### ■ Reference Land Patterns



The ordering number will be obtained separately by customer's requirement.