

# 3.2x2.5 SMD Crystal

## •Part Number Guide

T-M-FF.FFFM-LC-FTFS-OT-ESR-TR-S

**T**(Type型号) :K=3.2×2.5 SMD 4pads

**M**(Mode of Operation振荡模式) :F=Fundamental T=Third Overtone, etc

**F**(Frequency标称频率) :Normal – 5 digits of Frequency, e.g. 12.000M

Special – All digits of Frequency, e.g. 13.225625M

**LC**(Load Capacitance负载电容) :20=20pf 00=series, etc

**FT**(Frequency Tolerance调整频差) :30=±30 ppm, etc

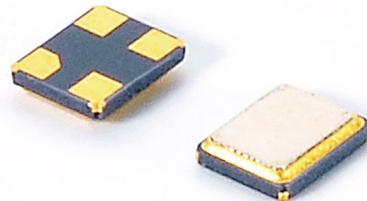
**FS**(Frequency Stability温度频差) :50=±50 ppm, etc

**OT**(Operating Temperature工作温度) :1060=–10°C to +60°C 4085=–40°C to +85°C, etc

**ESR**(Equivalent Series Resistance等效阻抗)

**TR**(Tape and Reel编带)

**S**(Special Requirement特殊要求)



Pb Free

RoHS Compliant  
Directive 2002/95/EC

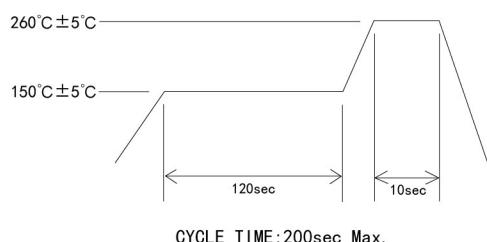
## •Electrical Specifications 电气参数

型号	Holder Type	3.2x2.5mm Ceramic Surface Mount
频率范围	Frequency Range	12.000MHz to 150.00MHz
调整频差	Frequency Tolerance ( $\Delta F$ ) (at 25°C)	±10ppm to ±100ppm
温度频差	Frequency Stability	±10ppm to ±100ppm
工作温度范围	Operating Temperature Range	–10°C ~ +60°C to –40°C ~ +85°C
储存温度范围	Storage Temperature Range	–40°C ~ +85°C / –55°C ~ +125°C
老化	Aging (25°C)	±5ppm/year Maximum
静电容	Shunt Capacitance (C0)	7pF Maximum
激励功率	Drive Level	10μW Typical
绝缘阻抗	Insulation Resistance (Rs)	500 Megohms Minimum at D.C100V
负载电容	Load Capacitance (CL)	Suggested by customer

## •Equivalent Series Resistance and Mode of Operation 等效阻抗和振荡模式

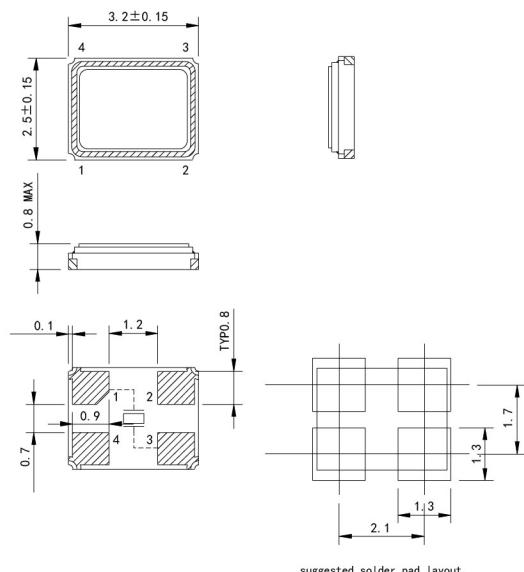
Frequency Range 频率范围	ESR (Ω) 等效阻抗	Mode 振荡模式
12.000–13.000MHz	100Max	Fundamental
13.000–16.000MHz	80Max	Fundamental
16.000–20.000MHz	60Max	Fundamental
20.000–26.000MHz	50Max	Fundamental
≥26.000MHz	40Max	Fundamental

## •Reflow Condition 回流焊条件



## •Mechanical Dimensions 外型尺寸

UNIT(单位): mm(毫米)



suggested solder pad layout

Note) #2, #4 is connected with a cover  
(Please connect with a GND or a power supply)