

# HC-49USM Crystal (FOUR PADS)

## Part Number Guide

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

T (Type 型号): MD=HC-49USM 4 Pads with height of 5.0mm Max  
 M02=HC-49USM 4 Pads with height of 4.5mm Max  
 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. 9.0000M, 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 调整精度): 30±50 ppm, etc  
 FS (Frequency Stability 温度频率): 50±50 ppm, etc  
 OT (Operating Temperature 工作温度): 1060=+10°C to +60°C 4065=-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

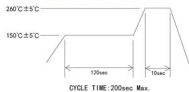
型号	Holder Type	HC-49USM 4Pads
频率范围	Frequency Range	3.5700MHz to 130.00MHz 浴 (See Note)
调整精度	Frequency Tolerance ( $\Delta F$ ) (at 25°C)	$\pm 10$ ppm to $\pm 100$ ppm
温度精度	Frequency Stability	$\pm 10$ ppm to $\pm 100$ ppm
工作温度范围	Operating Temperature Range	-10°C ~ +60°C to -40°C ~ +85°C
储存温度范围	Storage Temperature Range	-40°C ~ +85°C ~ -55°C ~ +125°C
老化	Aging (25°C)	$\pm 5$ ppm/year Maximum
静电容	Shunt Capacitance (C0)	7pF Maximum
激励功率	Drive Level	100 $\mu$ W Typical
绝缘阻抗	Insulation Resistance (Ri)	500 Megohms Minimum at 0°C 100V
负载电容	Load Capacitance (CL)	Suggested by customer

⑧Notes: for 4.5mm height, lowest frequency is 10 MHz.

## 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
3.5700 - 4.0000MHz	150Max	Fundamental
4.0000 - 5.0000MHz	120Max	Fundamental
5.0000 - 6.0000MHz	100Max	Fundamental
6.0000 - 7.0000MHz	80Max	Fundamental
7.0000 - 10.0000MHz	60Max	Fundamental
10.0000 - 14.0000MHz	50Max	Fundamental
14.0000 - 20.0000MHz	40Max	Fundamental
>20.0000MHz	30/40 (BT cut) Max	Fundamental
24.0000 - 35.0000MHz	100Max	Third Overtone
>35.0000MHz	80Max	Third Overtone

## Reflow Condition 回流焊条件



## Mechanical Dimensions 外型尺寸

Drawing For MD

