

HC-49USM Crystal (TWO PADS)

Part Number Guide

T-M-FF FFFFM-LC-FT-D-OT-ESR-TR-S

T (Type) 型号: 表HC-49USM with height of 4.9mm Max

80-HC-49004 with height of 2.5mm Max

80-HC-49004 with height of 2.5mm Max

84-HC-49004 with height of 2.0mm Max

M (Mode of Operation) 振荡模式: Fundamental, T-Third Overtone, etc.

F (Frequency) 标称频率

LC (Load Capacitance) 负载电容: 20±2pF, 99±series, etc.

FT (Frequency Tolerance) 频率精度: ±30±20 ppm, etc.

FD (Frequency Drift) 温度频率漂移: ±90±90 ppm, etc.

OT (Operating Temperature) 工作温度: -100~-10°C to +60°C, -60~-80°C to +65°C, etc.

ESR (Equivalent Series Resistance) 等效串联电阻

TR (Type and Res.) 封装

S (Special Requirement) 特殊要求



Electrical Specifications 电气参数

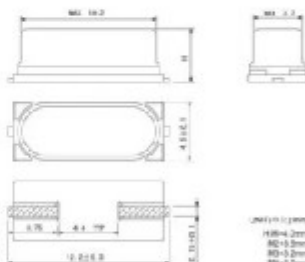
| 型号 | Model Type | HC-49USM |
|--------|------------------------------------|----------------------------------|
| 频率范围 | Frequency Range | 3,200kHz to 50,000kHz (for spec) |
| 频率精度 | Frequency Tolerance (A/F) (±0.01%) | ±50ppm to ±100ppm |
| 温度精度 | Frequency Drift | ±50ppm to ±100ppm |
| 工作温度范围 | Operating Temperature Range | -10°C ~ +60°C to -40°C ~ +65°C |
| 储存温度范围 | Storage Temperature Range | -40°C ~ +85°C / -55°C ~ +125°C |
| 老化 | Aging (A/F) | ±5ppm/ year Maximum |
| 静态电容 | Static Capacitance (C0) | typ. maximum |
| 驱动电平 | Drive Level | 100µW Typical |
| 绝缘电阻 | Insulation Resistance (Rx) | 500 Megohms Minimum at D.C. 100V |
| 负载电容 | Load Capacitance (CL) | Suggested by customer |

Note: For 5.0mm height, lowest frequency is 10 kHz.

For 3.5mm & 4.5mm height, lowest frequency is 6 kHz.

Mechanical Dimensions 外形尺寸

Drawing For Ref



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 |
|----------------------|--------------------|----------------|
| 3,200 ~ 3,570 kHz | 120 Max | Fundamental |
| 3,570 ~ 4,000 kHz | 100 Max | Fundamental |
| 4,000 ~ 5,000 kHz | 80 Max | Fundamental |
| 5,000 ~ 6,000 kHz | 65 Max | Fundamental |
| 6,000 ~ 7,000 kHz | 50 Max | Fundamental |
| 7,000 ~ 10,000 kHz | 30 Max | Fundamental |
| 10,000 ~ 14,000 kHz | 50 Max | Fundamental |
| 14,000 ~ 25,000 kHz | 40 Max | Fundamental |
| >25,000 kHz | 30/40 (BT cut) Max | Fundamental |
| 24,000 ~ 35,000 kHz | 100 Max | Third Overtone |
| >35,000 kHz | 80 Max | Third Overtone |

Reflow Condition (回流焊条件)



Cool Time 100sec Max