



LOW PROFILE SMD TYPE CRYSTAL UNITS

• HC-49SM Series



This part is a miniature AT or BT cut strip crystal units packaged for surface mounting. HC-49SMB supplies the same crystal with a lower height of less than 3.2mm.

FEATURES

- Low Cost
- Industry Standard
- Wide Frequency Range
- Excellent Aging
- Surface Mount

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Units
Frequency Range	F ₀	49SMA	3.200		66.000	MHz
		49SMB	8.000		66.000	MHz
Frequency Tolerance	ΔF/F ₀	AT 25°C	±10	±30	±50	ppm
Temperature Stability	T _C	REF TO 25°C	±10	±30	±50	ppm
Operating Temperature Range	T _{OPR}		-20*		+70*	°C
Storage Temperature Range	T _{STG}		-40		+85	°C
Shunt Capacitance	C _O				7	pF
Load Capacitance	C _L	Customer Specified	10		Series	pF
Insulator Resistance	I _R	100V _{DC}	500			MΩ
Drive Level	D _L			100	500	μW
Aging	F _a	AT 25°C, per year	-5.0		+5.0	ppm

*Operating temperature range: BT cut can only do 0°C to 50°C

Equivalent Series Resistance(ESR) and Mode of Vibration(Mode)

Frequency Range(MHz)	Max ESR(Ω)	Mode	Frequency Range(MHz)	Max ESR(Ω)	Mode
3.200 to 4.499	150	Fundamental/AT	9.000 to 9.999	60	Fundamental/AT
4.500 to 5.999	120	Fundamental/AT	10.000 to 12.999	50	Fundamental/AT
6.000 to 6.999	100	Fundamental/AT	13.000 to 30.000	40	Fundamental/AT
7.000 to 7.999	90	Fundamental/AT	30.000 to 66.000	80	3 rd Overtone
8.000 to 8.999	80	Fundamental/AT	27.000 to 40.000	40	Fundamental/BT

Mechanical Dimensions(mm)

