



Quartz crystal SPK-HC-49/U

- Typical applications:

motherboard of computers, consumer electronics, CD-ROM, VTR, data communication, automotive electronics, modem, TV games

- Features:

low profile, bulk, offer fitted insulator, large range of frequencies, resistance weld

- Electrical specifications:

Frequency range, fundamental mode	1.56 MHz ~ 30 MHz
Frequency range, 3rd overtone mode	27 MHz ~ 100 MHz
Crystal cut	AT-CUT or 3rd AT-CUT
Load capacitance	Series or 8 to 50 PF
Calibration tolerance (at 25°C)	+/-10ppm ~ +/-50ppm
Frequency stability	+/-10ppm ~ +/-50ppm
Operating temperature range	0~50°C, -10~60°C, -20~70°C, -30~80°C, -40~85°C.
Shunt capacitance (Co)	7 pF maximum
Equivalent series resistance (E.S.R.)	see table 1
Aging (per year at +25°C)	+/-3 ppm
Drive level	0.05, 0.1, 0.2, 0.5, 1.0mW (to be specified by customer)
Insulation resistance	>500M Ω min/DC100V

Please consult for other specifications.

- **Table 1: Equivalent series resistance (ESR Ω)**

Frequency	E.S.R. max.	Frequency	E.S.R. max.
1.56 MHz	800	3.91~5.0 MHz	100
1.8432 MHz	600	5.01~7.0 MHz	50
2.01~3.0 MHz	400	7.01~10.0 MHz	35
3.01~3.2 MHz	200	10.0~30.0 MHz	25
3.21~3.5 MHz	150	30.1~45.0 MHz	20
3.51~3.9 MHz	120	24.0~100 MHz	40