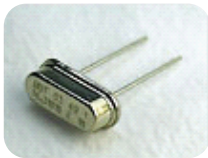


HC-49/S

Features

- Typical 11.1 x 4.68 x 3.51 mm standard footprint.
- Low profile for close PCB stacking.
- Packing : Plastic bag 200pcs or STR pack 1000pcs.



Application

- Automotive
- Bluetooth, Wireless
- Computers, Modems, Communications
- Set-top Box, DECT/WDCT

Specifications

RoHS Compliance

Parameter	Min.	Typical	Max.	Unit
Storage Temp.Range	-55	-	125	°C
Level of Drive	-	100		μW
Shunt Capacitance(Co)	-	-	7.0	pF
Insulation Resistance	500mΩ@DC 100V	-	-	
Aging	±3.0			ppm/year

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

Equivalent Series Resistance (E.S.R)

TYPE FREQUENCY	Mode	E.S.R
3.2MHz <Freq.≤4MHz	Fund	200Ω
4MHz < Freq. < 5MHz		120Ω
5MHz ≤ Freq. < 6MHz		80Ω
6MHz ≤ Freq. < 7MHz		70Ω
7MHz ≤ Freq. < 9MHz		50Ω
9MHz ≤ Freq. < 13MHz		45Ω
13MHz ≤ Freq. < 16MHz		40Ω
16MHz ≤ Freq. < 20MHz		30Ω
20MHz ≤ Freq. < 33MHz		25Ω
33MHz ≤ Freq. < 80MHz	3 rd Overtone	80Ω

Freq. Stability vs Temp. Range

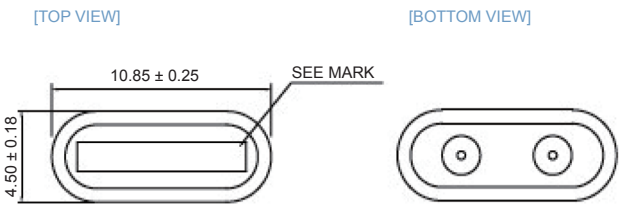
°C \ ppm	±10	±15	±20
-10~+60	△	○	○
-20~+70	△	○	○
-40~+85	X	X	○

Freq. Tolerance vs. CL

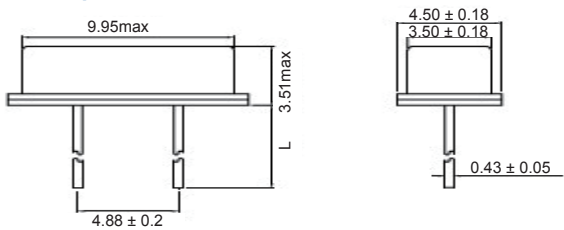
pf \ ppm	±10	±15	±20	±30
8	X	△	○	○
10	X	△	○	○
12	△	○	○	○
16	△	○	○	○
Series	○	○	○	○

○:Standard △:Available(case by case) X:Not

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



HC-49/SM

Features

- Typical 13.0 x 4.85 x 4.2 mm metal can SMD package.
- 24mm width Tape & Reel package for automatic assembly
- Packing : Tape & Reel, standard 1000pcs per Reel



Application

- Automotive
- Bluetooth, Wireless
- Computers, Modems, Communications
- Set-top Box, DECT/WDCT

Specifications

RoHS Compliance

Parameter	Min.	Typical	Max.	Unit
Storage Temp.Range	-55	-	125	°C
Level of Drive	-	100		μW
Shunt Capacitance(Co)	-	-	7.0	pF
Insulation Resistance	500mΩ@DC 100V	-	-	
Aging	±3.0			ppm/year

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

Equivalent Series Resistance (E.S.R)

TYPE FREQUENCY	Mode	E.S.R
3.2MHz <Freq.≤4MHz	Fund	200Ω
4MHz < Freq. < 5MHz		120Ω
5MHz ≤ Freq. < 6MHz		80Ω
6MHz ≤ Freq. < 7MHz		70Ω
7MHz ≤ Freq. < 9MHz		50Ω
9MHz ≤ Freq. < 13MHz		45Ω
13MHz ≤ Freq. < 16MHz		40Ω
16MHz ≤ Freq. < 20MHz		30Ω
20MHz ≤ Freq. < 33MHz		25Ω
33MHz ≤ Freq. < 80MHz	3 rd Overtone	80Ω

Freq. Stability vs Temp. Range

°C \ ppm	±10	±15	±20
-10~+60	△	○	○
-20~+70	△	○	○
-40~+85	X	X	○

Freq. Tolerance vs. CL

ppm \ pf	±10	±15	±20	±30
8	X	△	○	○
10	X	△	○	○
12	△	○	○	○
16	△	○	○	○
Series	○	○	○	○

*○:Standard △:Available(case by case) X:Not available

SOLDER PAD LAYOUT (mm)

DIMENSION (mm)

