

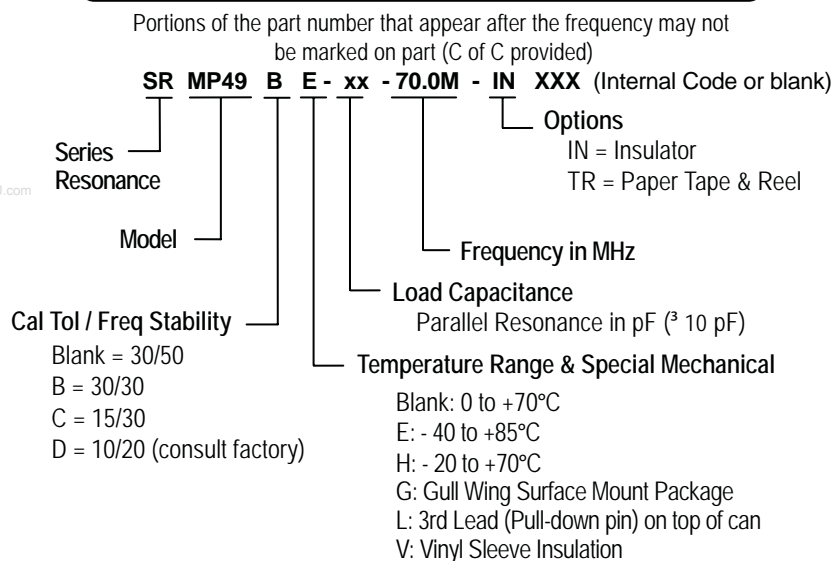
# MP49 Crystal

● HC-49U Metal Thru-Hole Crystal

● Available as Gull Wing SMD or with Pull-Down Pin on Top of Can

**1.8432 MHz – 210.00 MHz****Standard Specifications**

Calibration Frequency Tolerance at 25°C	± 30 PPM is standard, tighter tolerances available										
Operating Temperature Range (OTR)	0 to +70°C is standard, but can be extended to -40 to +85°C										
Frequency Stability (FS) over OTR	± 50 PPM is standard, see below for tighter tolerances available per OTR options										
Drive Level	50 µW is standard, customer may specify										
Aging at 25°C	± 5 PPM per year is standard, customer may specify ± 1 PPM										
Shunt Capacitance	7 pF maximum										
Pullability											
May be specified by customer in terms of frequency shift required over a certain range of load capacitance (e.g. +100 PPM from CL=12 to CL=18 pF) or as motional capacitance (f F)											
	<table><tr><th>Temperature Range</th><th>Tightest FS</th></tr><tr><td>-10 to +60°C</td><td>± 3 PPM</td></tr><tr><td>-20 to +70°C</td><td>± 5 PPM</td></tr><tr><td>-30 to +80°C</td><td>± 10 PPM</td></tr><tr><td>-40 to +85°C</td><td>± 20 PPM</td></tr></table>	Temperature Range	Tightest FS	-10 to +60°C	± 3 PPM	-20 to +70°C	± 5 PPM	-30 to +80°C	± 10 PPM	-40 to +85°C	± 20 PPM
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**Part Numbering Guide****ESR Values**

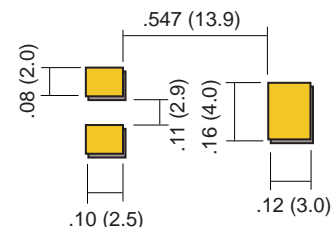
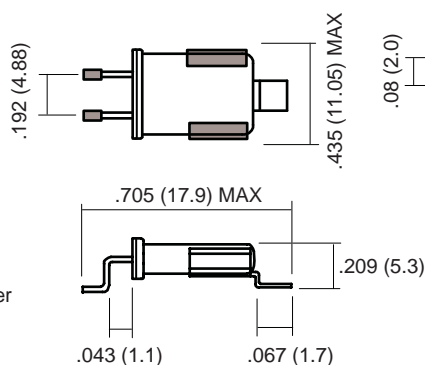
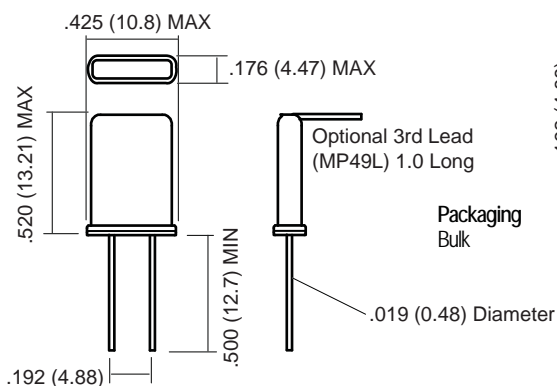
Oscillation Mode	Frequency Range (MHz)	Maximum ESR (Ohms)
Fundamental AT Cut	1.8432 – 2.999	700
	3.000 – 3.999	150
	4.000 – 6.999	100
	7.000 – 9.999	50
	10.000 – 37.000	25
3rd Overtone AT Cut	21.000 – 90.000	40
5th Overtone	60.000 – 150.000	70
7th Overtone	85.000 – 210.000	100

Consult factory for lower ESR

Consult factory for available frequencies and specs. Not all options available for all frequencies. A special part number may be assigned.

**Mechanical: inches (mm)****not to scale****Gull Wing - MP49G****Solder Pads**

Due to part size and factory abilities, part marking may vary from lot to lot and may contain our part number or an internal code.



July 2006