

SMD 4 Pad Type

**Features:**

- Wide frequency range
- Low profile
- AT cut & BT cut available
- Excellent clock signal generator
- 1000 pcs. per reel
- Can fit Epson 406 & 506 type footprint
- **RoHs Compliant (Pb Free)**

**Options:**

- 2 types of internal connections



**Electrical Specifications:**

<b>Frequency Range</b>		<b>3.2MHz ~ 70MHz</b>
<b>Mode of Vibration</b>	<b>AT Fund</b>	3.2MHz ~ 30MHz
	<b>BT Fund</b>	27MHz ~ 40MHz
	<b>AT 3rd</b>	27MHz ~ 70MHz
<b>Holder Type</b>		HC-49SX = Code: X
<b>Frequency Tolerance at 25°C</b>		±10ppm, ±15ppm, ±30ppm, ±50ppm, ±100ppm
<b>Frequency Stability over Temperature</b>		±10ppm, ±30ppm, ±50ppm, ±100ppm
<b>Operating Temperature Range</b>		AT-Cut: -20°C to +70°C BT-Cut: 0°C to 50°C
<b>Storage Temperature Range</b>		-40°C to +85°C
<b>Load Capacitance (CL)</b>		Parallel: 10pF to 32pF or Series ∞
<b>Aging</b>		±5ppm per year maximum
<b>Insulation Resistance</b>		> 500Mohm at DC 100Volts
<b>Shunt Capacitance</b>		7pF maximum
<b>Drive Level</b>		0.1mW Typical (500mW maximum)
<b>Equivalent Series Resistance (ESR)</b>		see chart

**Part Numbering System:**

**Example:**

Frequency = 11.0592MHz, Holder = HC-49SX,  
CL = 18pF, Mode = Fundamental,  
Oper. Temp. = -20°C to +70°C

**11X0592 — 18 F M 4 M E**  
①                      ②   ③   ④   ⑤   ⑥   ⑦

①

- First five digits of the frequency or all significant digit if frequency contains more than 5 digits.
- Holder code represented by letter "X" for holder type & indicating decimal point.

② Load Capacitance CL

Code	Load Capacitance
S	Series
10	10pF
18	18pF
20	20pF
32	32pF

③ Mode of Vibration

Code	Cut-Mode
F	AT Fund
B	BT Fund
3	AT 3rd OT

④ Frequency Tolerance

Code	Frequency
D	10 ppm
F	15 ppm
J	30 ppm
M	50 ppm
P	100 ppm

⑤ Operating Temperature

Code	Ranges
2	0°C to +70°C
3	-10°C to +70°C
4	-20°C to +70°C
5	-40°C to +85°C

⑥ Frequency Stability

Code	Stability
D	10 ppm
J	30 ppm
M	50 ppm
P	100 ppm

⑦ Internal Connection & Height

Code	Description	
C	Fig. 1	H = 5.2 max.
D		H = 4.2 max.
E	Fig. 2	H = 5.2 max.
F		H = 4.2 max.

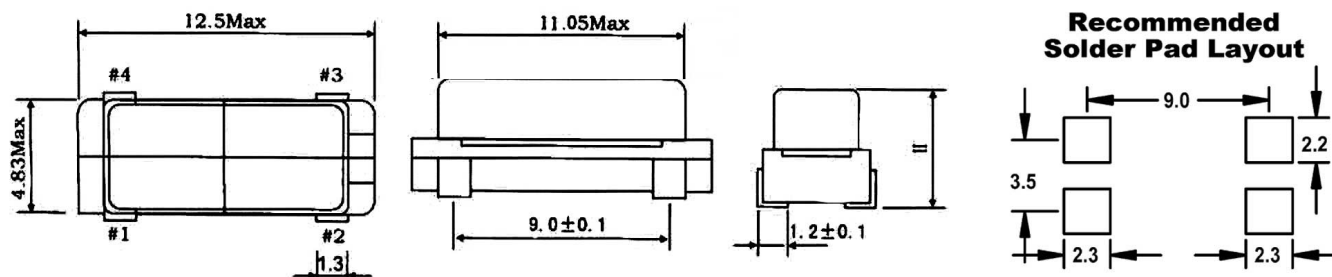
**Remark:** Specifications are subject to change without prior notice. Please confirm with our sales engineer.

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**Equivalent Series Resistance (ESR):**

Frequency	E.S.R. (ohm)	Mode
3.200MHz ~ 4.499MHz	150	Fundamental / AT
4.500MHz ~ 5.999MHz	120	Fundamental / AT
6.000MHz ~ 6.999MHz	100	Fundamental / AT
7.000MHz ~ 7.999MHz	90	Fundamental / AT
8.000MHz ~ 8.999MHz	80	Fundamental / AT
9.000MHz ~ 9.999MHz	60	Fundamental / AT
10.000MHz ~ 12.999MHz	50	Fundamental / AT
13.000MHz ~ 30.000MHz	40	Fundamental / AT
30.000MHz ~ 66.000MHz	80	3rd Overtone / AT
27.000MHz ~ 40.000MHz	40	Fundamental / AT

**Dimensions (units mm):**



**Internal Connection:**

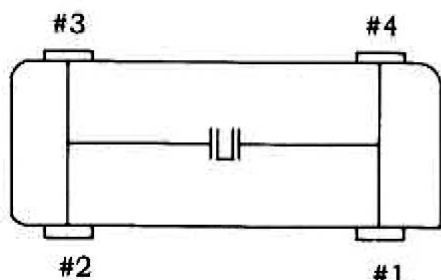


Fig. 1

Code	Description
C	H = 5.2 max.
D	H = 4.2 max.

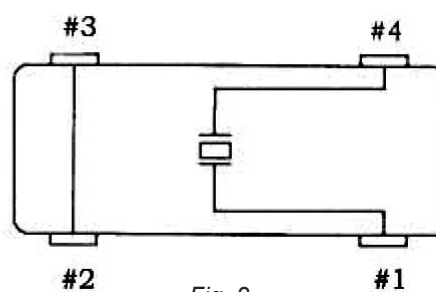


Fig. 2

Code	Description
E	H = 5.2 max.
F	H = 4.2 max.

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