





#### SURFACE-MOUNT CRYSTAL 49SM

## **FEATURES**

- SMD package, 2 pad version
- Low cost, short delivery.
- Wide Frequency Range
- Applications: Computers, Modem, Microprocessor Crystal,...

11.4 x 4.7 x 4.2 MM



Item	Symbol	Specification		
Frequency Range	Fo	3.2 MHz ~ 70.0 MHz		
Operation Mode		3.2 MHz ~ 48.0 MHz Fundamental / AT-cut (see options) 27.0 MHz ~ 70.0 MHz 3rd-overtone / AT-cut (see options) 24.0 MHz ~ 54.0 MHz Fundamental / BT-cut (see options)		
Operating temperature Range	То	-20° to +70°C (see options)		
Frequency Tolerance at 25°C	Δf/F	± 50ppm max. (see options)		
Temperature Stability	Δf/F	± 50ppm max. (see options)		
Load Capacitance (CL)	CL	series or 8 pF to 50 pF (see options)		
Equivalent Series Resistance	ESR	See Table 1		
Shunt Capacitance (Co)	Co	7pF Max		
Insulation Resistance Ri		500 MΩ min. (at 100Vdc)		
Drive Level	DL	100μW typical , 500μW max.		
Aging	Δf/F	±5ppm max (at 25°C, first year)		
Packing Unit		1000pcs / reel		
Soldering Condition		260°C, 10 sec x2 max		
		Customer specifications on request		

#### TABLE 1: Standard ESR

Frequency (MHz)	ESR (Ω) max.	Frequency (MHz)	ESR (Ω) max.
3.2 - 4.499	150	13.0 - 48.0	40
4.5 - 6.9	100	27.0 - 31.99, 3rd overtone	100
7.0 - 9.9	80	32.0 - 70.0, 3rd overtone	80
10.0 - 12.99	50	24.0 - 54.0 , Fund. BT-cut	40

# **OPTIONS & ORDERING INFORMATION**

49SM-						MHz	
	Freq. Tolerance	Freq. Stability*	Operating Temp.*	Load Capacitance	Mode	Frequency in MHz	ESR if other than STD
	<b>10</b> = ±10 ppm	<b>10</b> = ±10 ppm	<b>D</b> = -10° / +60°C	Please specify CL in	F = Fundamental	Please specify the	Specify a value in $\Omega$
	<b>15</b> = ±15 ppm	<b>15</b> = ±15 ppm	<b>E</b> = 0° / +70°C	pF or S for Series	D = 3rd overtone	frequency in MHz	
	<b>20</b> = ±20 ppm	<b>20</b> = ±20 ppm	<b>F</b> = -20° / +70°C		FB = Fundamental,		
	<b>25</b> = ±25 ppm	<b>25 =</b> ±25 ppm	<b>G</b> = -30° / +75°C		BT-cut		
	<b>30</b> = ±30 ppm	<b>30</b> = ±30 ppm	<b>H =</b> -30° / +85°C				
	<b>50</b> = ±50 ppm	<b>50</b> = ±50 ppm	<b>K</b> = -40° / +85°C				

<sup>\*</sup> Note : Not all combinations are possible, please consult us.



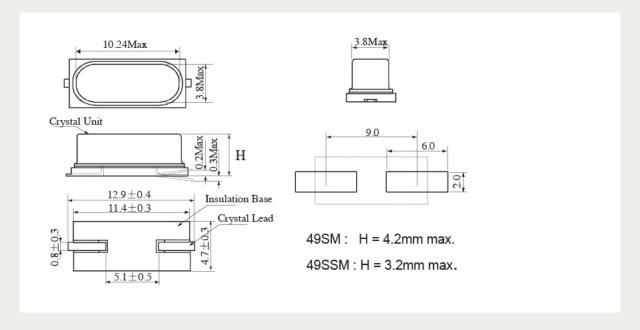








## **OUTLINE DIMENSIONS**





#### B.C.E. s.r.l.

