

# HC-49SMD Crystal Unit

## Low Profile Type

MXJ series

**MERITEK**

### FEATURE

- Surface Mount Low Profile
- Excellent Heat Resistance
- High precision and high frequency stability
- Applications: Wired Network, Mobile Communication, WiMAX, WLAN, Test Equipment



### PART NUMBERING SYSTEM

**MXJ** **F** **H** **J** **I** **20M0**  
 (1) (2) (3) (4) (5) (6)

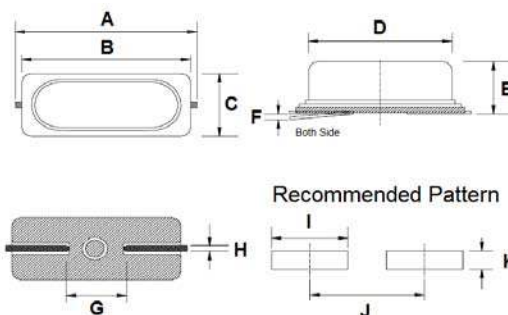


No	Item	Code	Description	Series Reference
(1)	Meritek Series	MXJ	Crystal Unit	HC-49SMD
(2)	Load Capacitance	F	F: 20pF	E: 18pF, R: Series Resonance (see options)
(3)	Frequency Tolerance	H	H: ±30ppm	F: ±20ppm, G: ±25ppm (see options)
(4)	Stability vs Oper Temp.	J	J: ±50ppm	G: ±25ppm, H: ±30ppm (see options)
(5)	Operating Temp.	I	I: -40~+85°C	C: -20~+70°C, I: -40~+85°C (see options)
(6)	Frequency	20M0	20M0: 20.00MHz	3M579545 ~ 75M0 (M denotes decimal point)

### DIMENSIONS AND RECOMMENDED PATTERN

Item	Size	Item	Size
A	12.7±0.6	G	4.88±0.20
B	11.40±0.15	H	0.65±0.15
C	4.70±0.15	I	5.6
D	10.3 Max.	J	9.5
E	4.2 Max.	K	2.1
F	0.1 Max.	-	-

Unit: mm



### AVAILABLE OPTIONS

Parameters	Part Number Options
Load Capacitance	R: Series Resonance, 3: 3pF ~ 8: 8pF, A: 10pF, B: 12pF, C: 15pF, D: 16pF, E: 18pF, F: 20pF, K: 22pF, G: 25pF, H: 30pF, L: 32pF
Frequency Tolerance	A: ±10ppm, C: ±15ppm, F: ±20ppm, G: ±25ppm, H: ±30ppm, J: ±50ppm
Stability vs Oper Temp.	A: ±10ppm, C: ±15ppm, F: ±20ppm, G: ±25ppm, H: ±30ppm, J: ±50ppm, K: ±100ppm
Operating Temperature	B: 0~+70°C, A: -10~+60°C, C: -20~+70°C, K: -30~+85°C, I: -40~+85°C, R: -40~+105°C

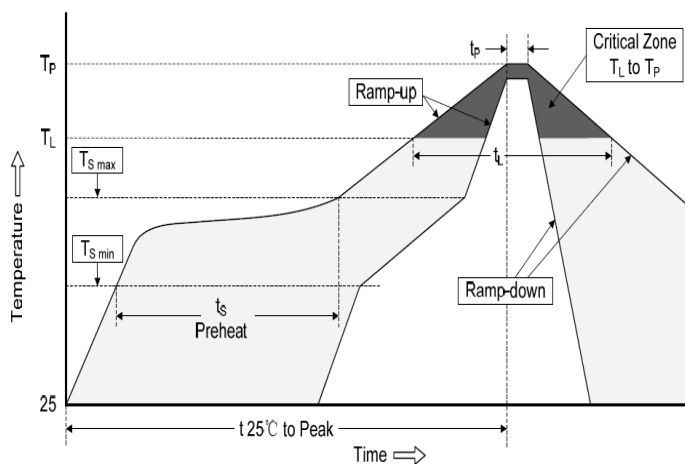
Note: Custom options available. Contact Meritek for more information.

ELECTRICAL CHARACTERISTICS

Parameters		Characteristic
Nominal Frequency Range		3.579545 ~ 75.000 MHz
Operation Mode	Fundamental	3.579545 ~ 31.999 MHz
	3 <sup>rd</sup> Overtone	32.000 ~ 75.000 MHz (standard frequencies)
Load Capacitance		20.0 pF (see options)
Frequency Tolerance (at 25°C)		±30 ppm (see options)
Freq Stability over Oper Temp.		±50 ppm (see options)
Operating Temperature		-20 ~ +70°C (see options)
Storage Temperature		-55 ~ +125°C
Drive Level		1 mW max. (100 µW typ.)
Aging		±5 ppm / year
Shunt Capacitance		7.0 pF max.
Insulation Resistance		500 MΩ min. (@100Vdc ±15V)
Drive Level Dependency (DLD)		1 µW ~ 500 µW (min. 7 points tested)
Equivalent Series Resistance	3.579545 ~ 4.999 Fund.	180 Ω max.
	5.0 ~ 5.999 Fundamental	120 Ω max.
	6.0 ~ 7.999 Fundamental	100 Ω max.
	8.0 ~ 8.999 Fundamental	80 Ω max.
	9.0 ~ 9.999 Fundamental	60 Ω max.
	10.0 ~ 15.999 Fundamental	50 Ω max.
	16.0 ~ 31.999 Fundamental	40 Ω max.
	32.0 ~ 75.000 3 <sup>rd</sup> OT/AT	80 Ω max.
Packing Unit		1,000 pcs / 13" Reel

RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	180°C
	Time (min. to max.) ( $t_s$ )	60~120 seconds
Average ramp up rate ( $T_L$ ) to peak		1°C/second max.
$T_{s(max)}$ to $T_L$ (Ramp-up rate)		3°C/second max.
Reflow	Temp. ( $T_L$ )	230°C
	Time (min. to max.) ( $t_L$ )	30~40 seconds
Peak Temperature ( $T_P$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		10 seconds max.
Ramp-down Rate		6°C/second



\*Specifications subject to change without notice.