

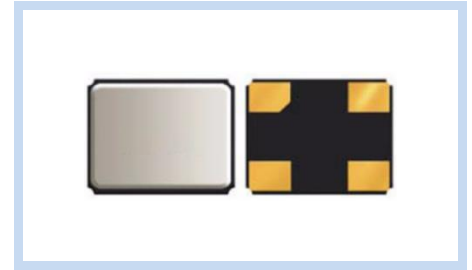
# Ceramic SMD Crystal Unit SMD 4.0 x 2.5mm Type

MX4 series

MERITEK

## FEATURE

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



## PART NUMBERING SYSTEM

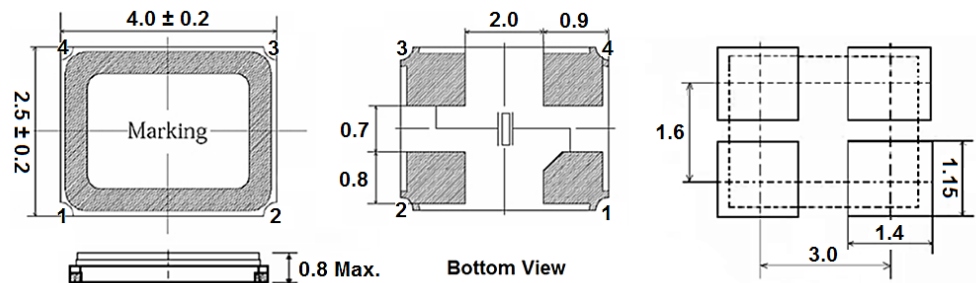
MX4   F   H   J   C   16M0  
(1)   (2)   (3)   (4)   (5)   (6)



No	Item	Code	Description	Series Reference
(1)	Meritek Series	MX4	Crystal Unit	Ceramic SMD Crystal 4.0x2.5mm 4 Pads
(2)	Load Capacitance	F	F: 20pF	E: 18pF, R: Series Resonance (see options)
(3)	Frequency Tolerance	H	H: $\pm 30$ ppm	F: $\pm 20$ ppm, G: $\pm 25$ ppm (see options)
(4)	Stability vs Oper Temp.	J	J: $\pm 50$ ppm	G: $\pm 25$ ppm, H: $\pm 30$ ppm (see options)
(5)	Operating Temp.	C	C: $-20 \sim +70^\circ\text{C}$	C: $-20 \sim +70^\circ\text{C}$ , I: $-40 \sim +85^\circ\text{C}$ (see options)
(6)	Frequency	16M0	16M0: 16.000MHz	12M0 ~ 54M0 (M denotes decimal point)

## DIMENSIONS AND RECOMMENDED PATTERN

PIN	PIN Layout
1	Input / Output
2	GND
3	Output / Input
4	GND



(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: $\pm 10$ ppm, C: $\pm 15$ ppm, F: $\pm 20$ ppm, G: $\pm 25$ ppm, H: $\pm 30$ ppm, J: $\pm 50$ ppm
Stability vs Oper Temp.	A: $\pm 10$ ppm, C: $\pm 15$ ppm, F: $\pm 20$ ppm, G: $\pm 25$ ppm, H: $\pm 30$ ppm, J: $\pm 50$ ppm, K: $\pm 100$ ppm
Operating Temperature	B: $0 \sim +70^\circ\text{C}$ , A: $-10 \sim +60^\circ\text{C}$ , C: $-20 \sim +70^\circ\text{C}$ , K: $-30 \sim +85^\circ\text{C}$ , I: $-40 \sim +85^\circ\text{C}$ , R: $-40 \sim +105^\circ\text{C}$

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

# Ceramic SMD Crystal Unit

## SMD 4.0 x 2.5mm Type

MX4 series

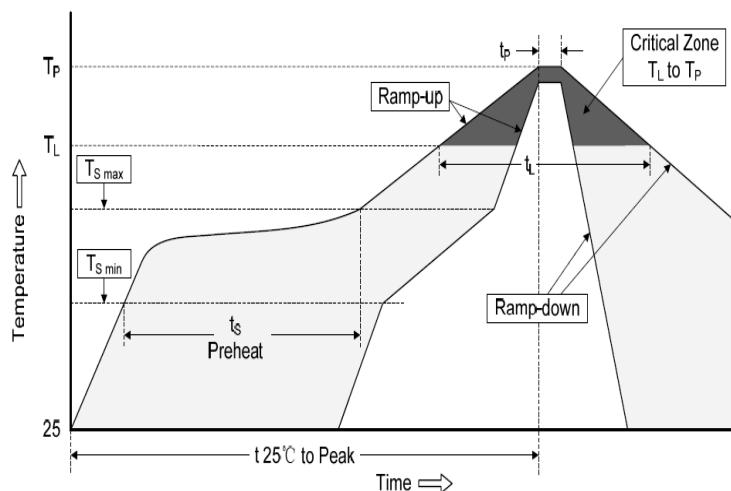
**MERITEK**

### ELECTRICAL CHARACTERISTICS

Parameters		Characteristic
Frequency Range		12.000 ~ 54.000 MHz
Operation Mode		Fundamental
Load Capacitance		18 pF (see options)
Frequency Tolerance (at 25°C)		±30 ppm (see options)
Freq Stability over Oper Temp.		±50 ppm (see options)
Operating Temperature		-40 ~ +85°C (see options)
Storage Temperature		-55 ~ +125°C
Drive Level		100µW max. (10 typ.)
Aging		±3 ppm / year
Shunt Capacitance		5.0 pF max.
Insulation Resistance		500 MΩ min. (@100Vdc ±15V)
Equivalent Series Resistance	12.0 ~ 23.999 Fundamental	80 Ω max.
	24.0 ~ 54.000 Fundamental	60 Ω max.
Packing Unit		1,000 pcs / 7" 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.