

### Features

Frequency range : 12MHz to 66MHz  
 Ceramic SMD package  
 Seam sealing  
 External dimensions (mm)  
 L : 2.5 x W : 2.0 x H : 0.55  
 RoHS compliant & Pb free

### Applications

Bluetooth, Wireless LAN  
 Microprocessor  
 Mobile phone, Computer, Modem  
 Audio, Video  
 Consumer products

### Electrical Characteristics

Item		8Z	Conditions
Frequency Range	$F_0$	12MHz ~ 66MHz	
Frequency Tolerance	$F_{tol}$	±30ppm, ±20ppm, ±10ppm	at 25°C
Frequency Stability over Operating Temperature Range (refer to 25°C)	$F_{stab}$	±30 ppm	-20°C ~ +70°C
		±20 ppm	
		±10 ppm	-30°C ~ +85°C
		±10 ppm	
		±30 ppm	-40°C ~ +85°C
		±20 ppm	
±60 ppm	-40°C ~ +125°C		
Operating Temperature Range	$T_{OTR}$	-20°C ~ +70°C	
		-40°C ~ +85°C	
		-40°C ~ +125°C	
Shunt Capacitance	$C_0$	3pF Max.	
Drive Level	$D_L$	1 ~ 200μW (100μW Typ.)	
Load Capacitance	$C_L$	6pF, 8pF, 10pF 12pF, 16pF, 18pF, 20pF	
Aging (at 25°C ± 3°C, first year)	$F_{aging}$	±3ppm Max.	Note [1]
Storage Temperature Range	$T_{STR}$	-55°C ~ +125°C	

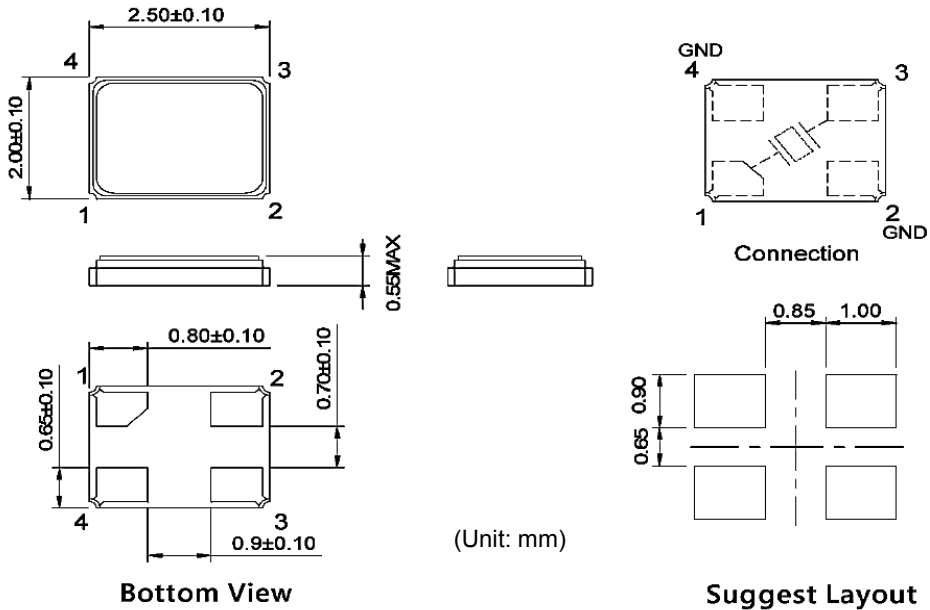
#### Notes:

[1] Please contact us for low aging +/-1ppm grade crystals.

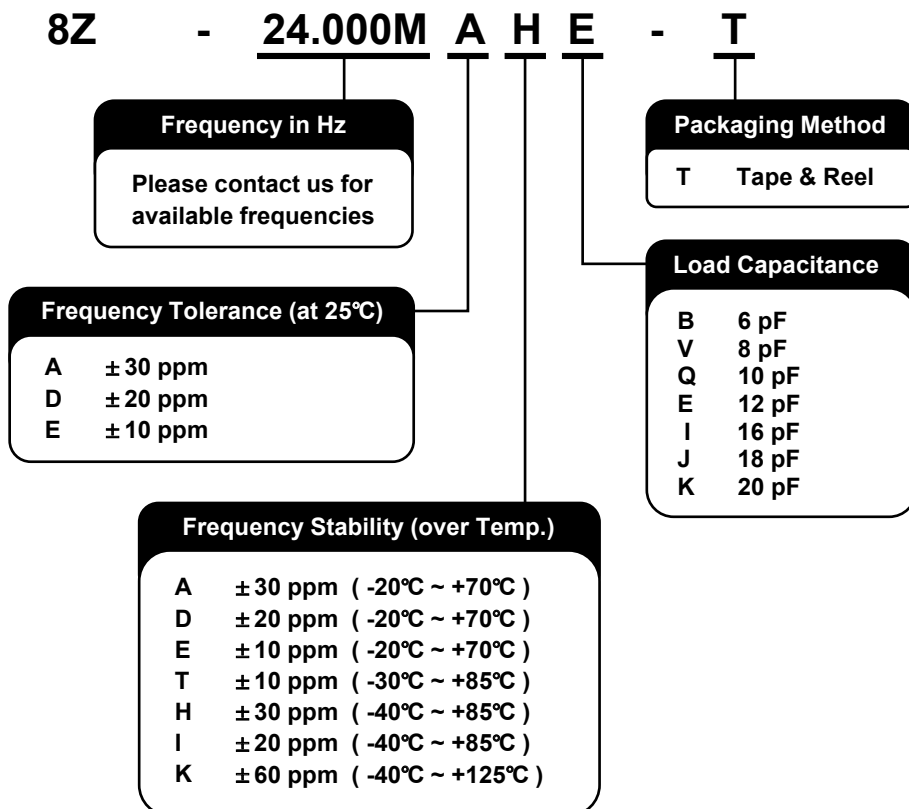
### Motional Resistance (ESR)

Fundamental	
12 ~ 13 MHz	150Ω Max.
14 ~ 30 MHz	100Ω Max.
30 ~ 66 MHz	60Ω Max.

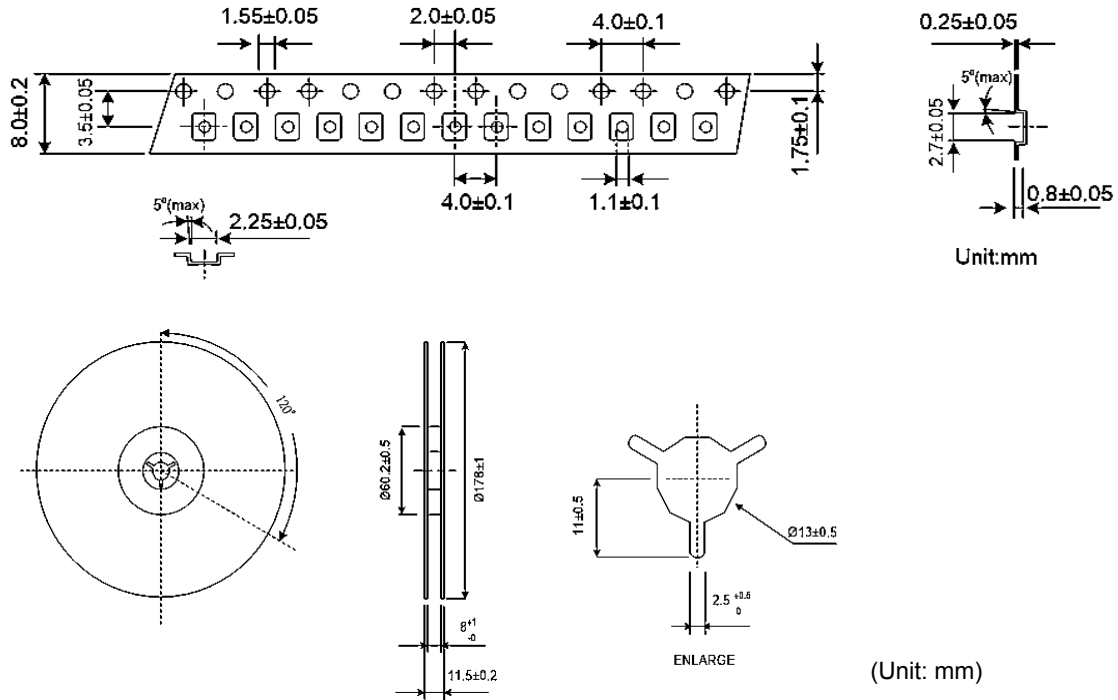
### Dimensions



### Ordering Information



### Packing



### Reflow Profile

Solder melting point :  $220^\circ\text{C} \pm 10^\circ\text{C}$ , 60 sec. Min.

Peak temperature :  $260^\circ\text{C} \pm 10^\circ\text{C}$ , 10 sec. Min.

