

## Features

Frequency range : 10MHz to 114MHz  
 Ceramic SMD package  
 Seam sealing  
 External dimensions (mm)  
 L : 3.2 x W : 2.5 x H : 0.7  
 RoHS compliant & Pb free

## Applications

Bluetooth, Wireless LAN  
 Cellular phone, Pager, DSC  
 Display, TV  
 Computer peripherals  
 Consumer products

## Electrical Characteristics

Item		7M	Conditions
Frequency Range	$F_0$	10MHz ~ 114MHz	
Frequency Tolerance	$F_{tol}$	$\pm 30\text{ppm}, \pm 20\text{ppm}, \pm 10\text{ppm}$	at 25°C
Frequency Stability over Operating Temperature Range (refer to 25°C)	$F_{stab}$	$\pm 30 \text{ ppm}$	
		$\pm 20 \text{ ppm}$	-20°C ~ +70°C
		$\pm 10 \text{ ppm}$	
		$\pm 10 \text{ ppm}$	-30°C ~ +85°C
		$\pm 30 \text{ ppm}$	
		$\pm 20 \text{ ppm}$	-40°C ~ +85°C
		$\pm 15 \text{ ppm}$	
		$\pm 60 \text{ ppm}$	-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 ~ 200 $\mu\text{W}$ (100 $\mu\text{W}$ Typ.)	
Load Capacitance	$C_L$	6pF, 7pF, 8pF, 9pF, 10pF 12pF, 16pF, 18pF, 20pF	
Aging (at 25°C ± 3°C, first year)	$F_{aging}$	±3ppm Max.	Note [1]
Storage Temperature Range	$T_{STR}$	-40°C ~ +85°C	

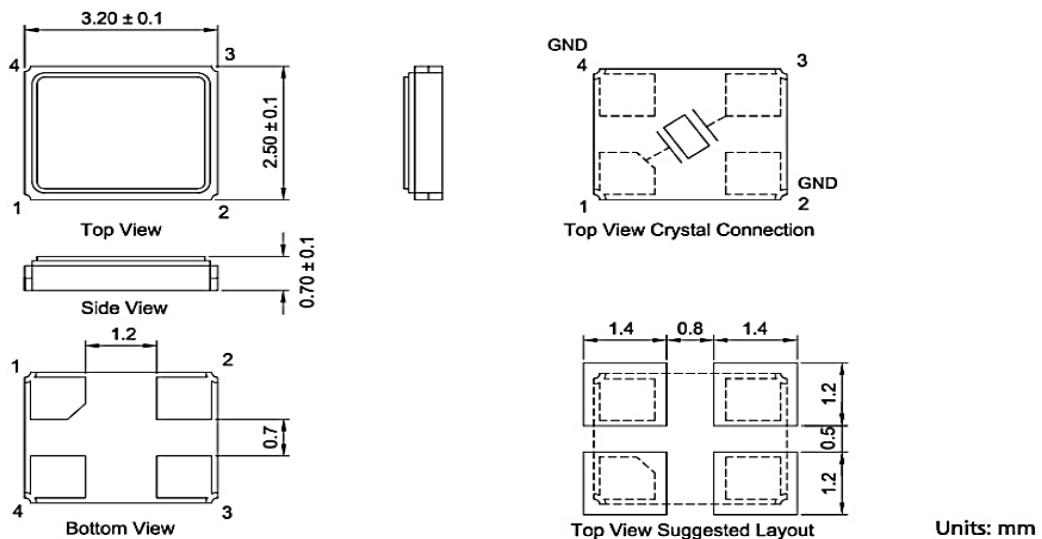
### Notes:

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

## Motional Resistance (ESR)

Fundamental		3rd Overtone	
10 ~ 12 MHz	150Ω Max.	60 ~ 80 MHz	80Ω Max.
12 ~ 16 MHz	80Ω Max.	80 ~ 114 MHz	60Ω Max.
16 ~ 20 MHz	60Ω Max.		
20 ~ 64 MHz	50Ω Max.		

## Dimensions



## Ordering Information

7M - 20.000M A H E - T

**Frequency in Hz**

Please contact us for available frequencies

**Frequency Tolerance (at 25°C)**

- A  $\pm 30$  ppm
- D  $\pm 20$  ppm
- E  $\pm 10$  ppm

**Frequency Stability (over Temp.)**

- A  $\pm 30$  ppm ( -20°C ~ +70°C )
- D  $\pm 20$  ppm ( -20°C ~ +70°C )
- E  $\pm 10$  ppm ( -20°C ~ +70°C )
- T  $\pm 10$  ppm ( -30°C ~ +85°C )
- H  $\pm 30$  ppm ( -40°C ~ +85°C )
- I  $\pm 20$  ppm ( -40°C ~ +85°C )
- J  $\pm 15$  ppm ( -40°C ~ +85°C )
- K  $\pm 60$  ppm ( -40°C ~ +125°C )

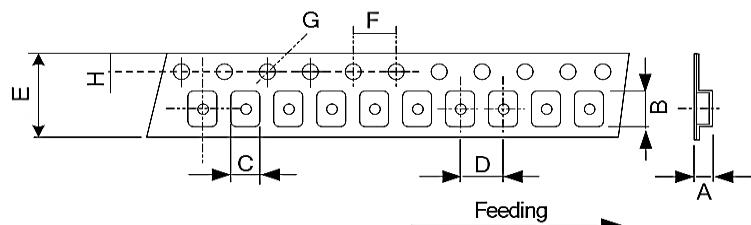
**Packaging Method**

- T Tape & Reel

**Load Capacitance**

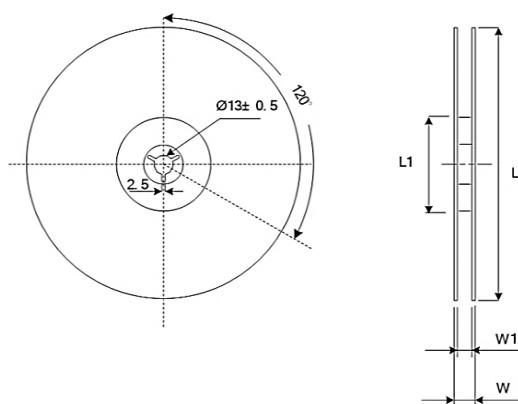
B	6 pF
Y	7 pF
V	8 pF
C	9 pF
Q	10 pF
E	12 pF
I	16 pF
J	18 pF
K	20 pF

## Packing



DIMENSIONS	A	B	C	D	E	F	G	H
	1.65 ±0.10	3.40 ±0.10	2.70 ±0.10	4.00 ±0.10	8.00 ±0.20	4.00 ±0.10	1.55 ±0.05	1.75 ±0.10

(Unit: mm)



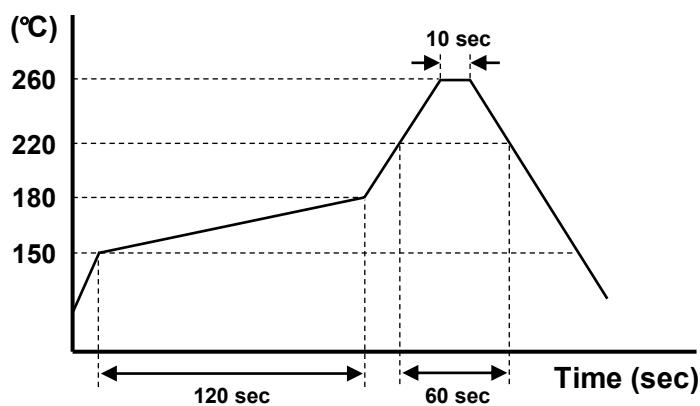
DIMENSIONS	L	L1	W	W1
	178 ±1.00	60.2 ±0.50	11.5 ±0.2	8 ±0.1

(Unit: mm)

## Reflow Profile

Solder melting point : 220°C ± 10°C, 60 sec. Min.

Peak temperature : 260°C ± 10°C, 10 sec. Min.



# Mouser Electronics

Authorized Distributor

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[TXC Corporation](#):

[7M-12.000MAAJ-T](#) [7M-12.288MAAJ-T](#) [7M-13.000MAAJ-T](#) [7M-13.560MAAJ-T](#) [7M-14.31818MAAJ-T](#) [7M-16.000MAAJ-T](#) [7M-16.384MAAJ-T](#) [7M-16.9344MAAJ-T](#) [7M-18.432MAAJ-T](#) [7M-19.200MAAJ-T](#) [7M-20.000MAAJ-T](#) [7M-24.000MAAJ-T](#) [7M-24.576MAAJ-T](#) [7M-25.000MAAJ-T](#) [7M-26.000MAAJ-T](#) [7M-27.000MAAJ-T](#) [7M-27.120MAAJ-T](#) [7M-30.000MAAJ-T](#) [7M-32.000MAAJ-T](#) [7M-36.000MAAJ-T](#) [7M-38.400MAAJ-T](#) [7M-40.000MAAJ-T](#) [7M-48.000MAAJ-T](#) [7M-10.000MAAJ-T](#) [7M-50.000MAAJ-T](#) [7M-36.000MAHV-T](#) [7M-16.000MAHV-T](#) [7M-24.000MAHV-T](#) [7M-10.000MAHV-T](#) [7M-13.000MAHV-T](#) [7M-32.000MAHV-T](#) [7M-38.400MAHV-T](#) [7M-50.000MAHV-T](#) [7M-26.000MAKV-T](#) [7M-26.000MAHV-T](#) [7M-27.120MAHV-T](#) [7M-19.200MAHV-T](#) [7M-25.000MAKV-T](#) [7M-27.000MAKV-T](#) [7M-37.400MAHV-T](#) [7M-25.000MAHV-T](#) [7M-40.000MAKV-T](#) [7M-40.000MAHV-T](#) [7M-27.000MAHV-T](#) [7M-24.000MAKV-T](#) [7M-20.000MAHV-T](#) [7M-12.288MAHV-T](#) [7M-30.000MAHV-T](#) [7M-48.000MAHV-T](#) [7M-12.000MAHV-T](#) [7M25070033](#) [7M26000028](#) [7M20020003](#) [7M25000196](#) [7M24070019](#) [7M24085001](#) [7M24000218](#) [7M25030004](#) [7M12270003](#) [7M25000055](#) [7M26070013](#) [7M40000129](#) [7M40000002](#) [7M27000050](#) [7M25070010](#) [7M12000048](#) [7M25000080](#) [7M40000009](#) [7M25070060](#) [7M25000003](#) [7M25070018](#) [7M16000099](#) [7M25000013](#) [7M25070025](#) [7M48020003](#) [7M12070021](#) [7M48000003](#) [7M25000019](#) [7M27100001](#) [7M12070015](#) [7M25070063](#) [7M31270003](#) [7M32030001](#) [7M50070014](#) [7M24070016](#) [7M12070005](#) [7M12020002](#) [7M38400010](#) [7M24000174](#) [7M25000018](#) [7M24000138](#) [7M18470004](#) [7M25000041](#) [7M25000016](#) [7M48070001](#) [7M24077005](#) [7M25070006](#) [7M16090001](#) [7M12000039](#) [7M27170001](#)