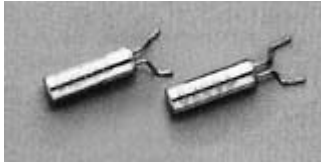


# CMR200T

(2,000pcs/reel)



## ■ FEATURES:

- Because of their excellent shock resistance and low power consumption, the units are ideal for portable equipment.
- Features superior characteristics indigenous to tuning fork-type quartz crystal units.
- Ideal for low cost SMD applications.
- Provided in Tape and Reel.

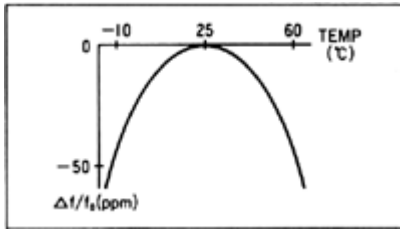
## ■ APPLICATIONS:

- Permits use as a clock source for communication equipment, AV equipment, OA equipment, measuring instruments and various types of clocks.

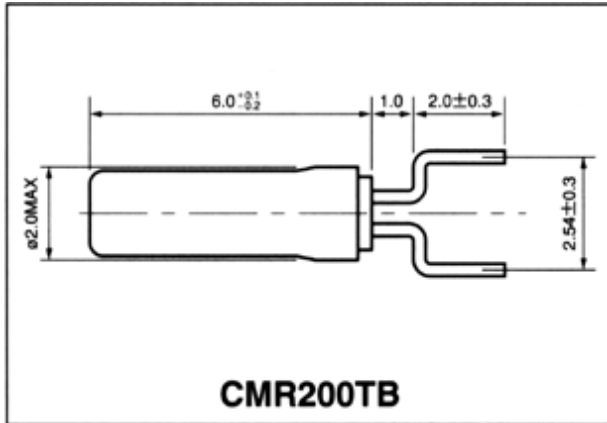
## ■ STANDARD SPECIFICATIONS

Item		CM200T	Conditions
Nominal frequency	$f_0$	32.768kHz	
Frequency tolerance	$\Delta f/f_0$	$\pm 20\text{ppm}$	At 25°C
Frequency vs. Temperature Characteristics	$\Delta f/f_0$	See drawing	-10°C to +60°C
Turnover temperature	$T_m$	25°C $\pm$ 5°C	
Temperature coefficient	beta	-0.034 $\pm$ 0.006ppm/°C <sup>2</sup>	
Operating temperature range	$T_{opr}$	-40°C to +85°C	
Storage temperature range	$T_{stg}$	-55°C to +125°C	
Equivalent series resistance	$R_1$	35k ohm MAX.	At 25°C
Load capacitance	$C_L$	12.5pF TYP.	Please specify
Motional capacitance	$C_1$	0.0030pF TYP.	
Shunt capacitance	$C_0$	1.35pF TYP.	
Capacitance ratio	gamma	450 TYP.	
Drive level	DL	1 $\mu$ W MAX.	
Insulation resistance	IR	500M ohm MIN.	DC100V $\pm$ 15V
Aging (First year)	$\Delta f/f_0$	$\pm 3\text{ppm MAX.}$	25°C $\pm$ 3°C
Sealing		1 x 10 <sup>-2</sup> $\mu$ Pa·m <sup>3</sup> /s MAX.	
Shock resistance		$\pm 5\text{ppm MAX.}$ Drop test of 3 times on a hard board from 75cm height or shock test of 3000G x 0.3ms x 1/2sin wave x 3 directions	

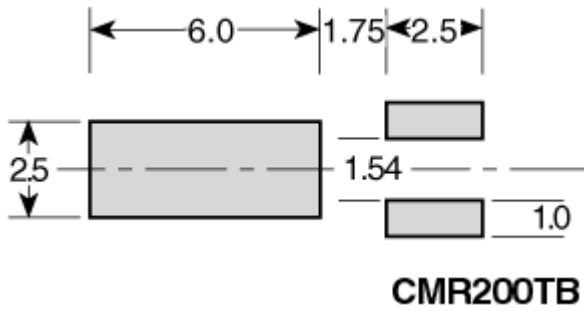
## ■ FREQUENCY vs TEMPERATURE CURVE



■ DIMENSIONS: (UNIT=mm)



■ RECOMENDED SOLDERING PATTERN: (UNIT=mm)



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