

## Data sheet

### HMR200

### 32.768KHz Cylindrical SMD Quartz Crystal

## FEATURES

- High reliability and good stability
- Ultra-thin thickness 2.0mm (diameter)
- Excellent aging characteristics
- Reflow is possible
- Applications: Consumer electronics, Microprocessor clocks...



Parameter	min.	typ.	max.	Unit	Condition
Frequency		32.768		KHz	
Vibration mode	XY-cut				
Frequency stability					
Initial tolerance @25°C		±20		ppm	
Operating temperature range	-40		+85	°C	
Turnover temperature	25°C ±5 °C				
Parabolic curvature constant	-0.045x10 <sup>-6</sup> /°C <sup>2</sup> max.				
Equivalent Series Resistance (ESR)	50KΩ max.				
Load Capacitance (CL)	Standard: 12.5pF (see options)				
Shunt Capacitance (Co)			2.0	pF	
Drive Level			1	μW	
Aging		±5		ppm	At 25°C, first year
Insulation Resistance	500			MΩ	@ 100Vdc
Enclosure (see drawing) (LxWxH)	Diameter 2.0 x 6.0			mm	
Packing	3000 pcs per reel				

### Ordering Code:

Load Capacitance	Frequency in MHz
12.5 = 12.5pF	Specify the
10 = 10pF	frequency in KHz
9 = 9pF	
7 = 7pF	
6 = 6pF	

### Standard specifications:

- ± 20ppm
- 12.5pF

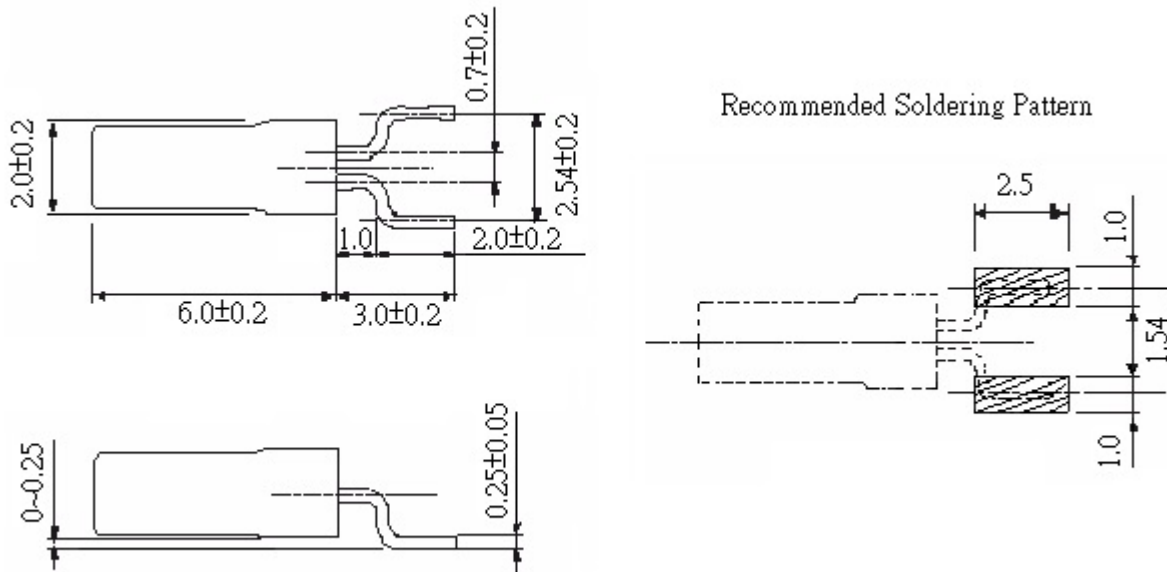
**Example: HMR200-12.5-32.768**

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**Outline Dimensions (mm):**



**Environmental conditions**

Test	IEC 60068 Part ...	IEC 60679-1 clause ...	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability	2-20	5.6.3	Test Ta Method 1
Resistance to soldering heat	2-58		Test Td <sub>1</sub> Method 2 Test Td <sub>2</sub> Method 2
Shock*	2-27	5.6.8	Test Ea, 3 x per axes 100g, 6 ms half-sine pulse
Vibration, sinusoidal*	2-6	5.6.7.1	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g
Vibration random *	2-64	5.6.7.3	Test Fdb
Endurance tests			
- ageing		5.7.1	30 days @ 85°C, OCXO @25°C
- extended aging		5.7.2	1000h, 2000h, 8000h @85°C

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