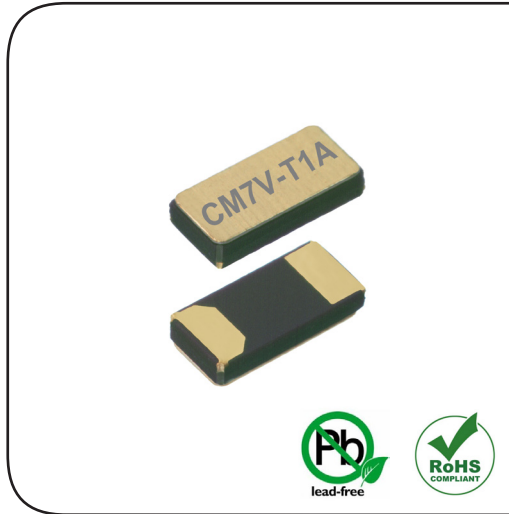
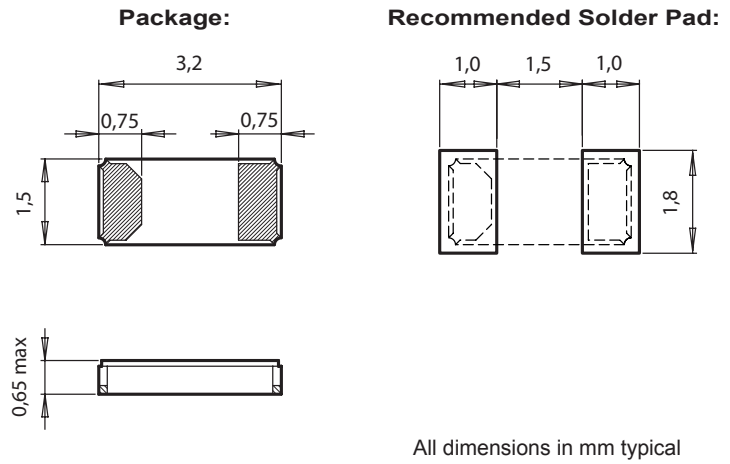


CM7V-T1A

Tuning Fork Crystal 32.768 kHz



DIMENSIONS



APPLICATIONS

IoT
 Metering
 Industrial
 Automotive
 Health Care
 Wearables, Portables

DESCRIPTION

The CM7V-T1A is a low frequency SMT Quartz Crystal Unit that incorporates a tuning fork Quartz Crystal Resonator. It operates under vacuum in a hermetically sealed ceramic package with metal lid.

FEATURES

Outstanding hermetic sealing with gold-tin preform.
 High stability and low aging guaranteed by hermetic sealing.
 Available for extended operating temperature range.
 Small size, low profile, lightweight (10.3 mg).
 High shock and vibration resistant.
 100% Pb-free, RoHS-compliant.
 Automotive qualification according to AEC-Q200 available.

ELECTRICAL CHARACTERISTICS AT 25°C

| Standard Frequencies 32.768 kHz / 100.000 kHz ¹⁾ | F _L | 32.768 | kHz |
|--|-------------------|--|-----|
| Load capacitance ²⁾ | C _L | 6.0 / 7.0 / 9.0 / 12.5 | pF |
| Frequency tolerance ³⁾ | ΔF/F | ±20 | ppm |
| | ΔF/F | ±100 | ppm |
| Series resistance typ./max. | R _S | 50 / 70 | kΩ |
| Motional capacitance typ. | C ₁ | 3.7 | fF |
| Static capacitance typ. | C ₀ | 1.2 | pF |
| Drive level max. | P | 1.0 | μW |
| Insulation resistance min. | R _i | 500 | MΩ |
| Aging first year max. | ΔF/F | ±3 | ppm |
| Turnover temperature | T ₀ | 25 ±5 | °C |
| Frequency vs. temperature | ΔF/F ₀ | -0.035 ppm/°C ² (T - T ₀) ² ±10% | |

1) Other frequencies on request.
 2) Other load capacitances on request.
 3) Tighter frequency tolerances on request.

STANDARD FREQUENCIES

| Frequencies |
|------------------------------|
| 32.768 kHz / 100.000 kHz |
| Other frequencies on request |

ENVIRONMENTAL CHARACTERISTICS

| | | Conditions | Max. Dev. |
|--------------------------------|------|------------------------|-----------|
| Storage temp. range | | -55 to +125°C | |
| TA Operating temperature range | | -40 to +85°C | |
| TB Extended oper. temp. range | | -40 to +125°C | |
| TC Extended oper. temp. range | | -55 to +125°C | |
| Shock resistance | ΔF/F | 5000 g, 0.3 ms, ½ sine | ±5 ppm |
| Vibration resistance | ΔF/F | 20 g / 10–2000 Hz | ±5 ppm |

TERMINATIONS AND PROCESSING

| Type | Termination | Processing |
|----------|-------------------------------------|---|
| CM7V-T1A | For SMT mounting Au flashed pads | IPC/JEDEC J-STD-020C 260°C / 20 - 40 s |

ORDERING INFORMATION

| C M 7 V - T 1 A Ceramic package Metal lid Package size 7 = 3.2 x 1.5 x 0.65 mm Tuning fork SMT Package Au flashed pads Pads on both ends | 32.768 kHz 12.5 pF ±20 ppm TA QC Frequency F_L Load capacitance C_L 6.0 pF 7.0 pF 9.0 pF 12.5 pF Other C_L on request Frequency tolerance ±20 ppm ±100 ppm Tighter freq. tolerances on request Temperature range TA = -40 to +85°C (Standard) TB = -40 to +125°C TC = -55 to +125°C Qualification QC = Commercial Grade (Standard) QA = Automotive Grade AEC-Q200 |
|---|--|
| A unique part number will be generated for each product specification, i.e.: | |
| 20xxxx-MG01 | 1'000 pcs (in 12 mm tape on 7" reel) |
| 20xxxx-MG03 | 3'000 pcs (in 12 mm tape on 7" reel) |
| 20xxxx-PG14 | 14'000 pcs (in 12 mm tape on 13" reel) |

All specifications subject to change without notice.



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