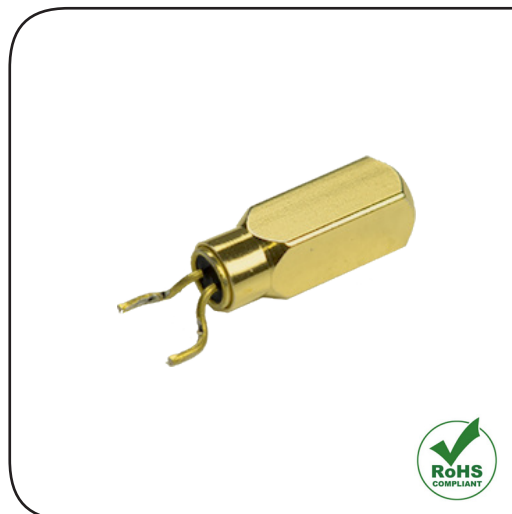


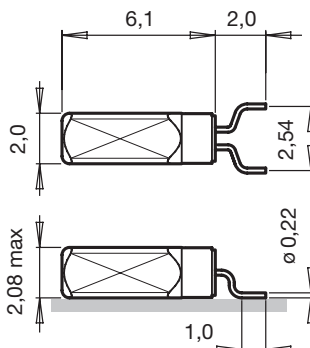
MS1V-T1K

Tuning Fork Crystal 30 kHz – 200 kHz

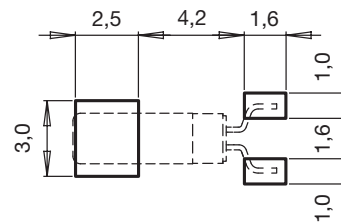


DIMENSIONS

Package:



Recommended Solder Pad:



All dimensions in mm typical

APPLICATIONS

IoT
Metering
Wearables
Health Care
Consumer Electronics

DESCRIPTION

The MS1V-T1K is a low frequency surface mount technology Quartz Crystal Unit that incorporates a tuning fork Quartz Crystal Resonator. It operates under vacuum in a hermetically sealed square-bodied metal can package.

FEATURES

High stability is guaranteed by hermetic sealing.
High shock and vibration resistant.
Proven surface mount technology package for reflow soldering.
Excellent lead coplanarity for surface mounting.
RoHS-compliant.

ELECTRICAL CHARACTERISTICS AT 25°C

| | | | |
|-----------------------------------|----------------|--|-----|
| Standard Frequency ¹⁾ | F_L | 32.768 | kHz |
| Load capacitance ²⁾ | C_L | 6.0 / 7.0 / 9.0 / 12.5 | pF |
| Frequency tolerance ³⁾ | $\Delta F/F$ | ±20 | ppm |
| | $\Delta F/F$ | ±100 | ppm |
| Series resistance typ./max. | R_S | 45 / 60 | kΩ |
| Motional capacitance typ. | C_1 | 2.25 | fF |
| Static capacitance typ. | C_0 | 0.9 | pF |
| Drive level max. | P | 1.0 | μW |
| Insulation resistance min. | R_i | 500 | MΩ |
| Aging first year max. | $\Delta F/F$ | ±3 | ppm |
| Turnover temperature | T_0 | 25 ±5 | °C |
| Frequency vs. temperature | $\Delta F/F_0$ | $-0.035 \text{ ppm}/^\circ\text{C}^2 (T - T_0)^2 \pm 10\%$ | ppm |

1) Other frequencies on request.

2) Other load capacitances on request.

3) Tighter and wider frequency tolerances on request.

STANDARD FREQUENCIES

| Frequencies | | |
|------------------------------|------------|------------|
| 32.768 kHz | 60.000 kHz | 76.800 kHz |
| Other frequencies on request | | |

ENVIRONMENTAL CHARACTERISTICS

| | | Conditions | Max. Dev. |
|--------------------------------|--------------|--------------------------|-----------|
| Storage temperature range | | -55 to +85°C | |
| TA Operating temperature range | | -40 to +85°C | |
| Shock resistance | $\Delta F/F$ | 5000 g, 0.3 ms, 1/2 sine | ±5 ppm |
| Vibration resistance | $\Delta F/F$ | 20 g / 10–2000 Hz | ±5 ppm |

TERMINATIONS AND PROCESSING

| Type | Termination | Processing |
|----------|--|--|
| MS1V-T1K | Can: Au flashed Leads: Formed leads Au flashed | For surface mounting IPC/JEDEC J-STD-020C 260°C / 20 - 40 s |
| MS1V-T1N | Can: Au flashed Leads: Straight leads Au flashed | For through-hole mounting IPC/JEDEC J-STD-020C 260°C / 20 - 40 s |

ORDERING INFORMATION

| | | | | | | | |
|---|---------------------------------------|--|--|--|--|-----------------------|-----------|
| MS1V-T1K | | 32.768 kHz | 12.5 pF | ±20 ppm | TA | QC | Au |
| Square metal package MS1V = 2.0 x 2.0 x 6.1 mm SMT Package Au flashed leads Package lead form K = SMD spacing 2.54 mm N = Straight leads | | 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 and wider freq. tolerances on request | Temperature range TA = -40 to +85°C | Qualification QC = Commercial Grade | Au flashed can | |
| A unique part number will be generated for each product specification, i.e: | | | | | | | |
| 20xxxx-ML02 | 2'000 pcs (in 16 mm tape on 7" reel) | MS1V-T1K | | | | | |
| 20xxxx-PL08 | 8'000 pcs (in 16 mm tape on 13" reel) | MS1V-T1K | | | | | |
| 20xxxx-BA01 | 1'000 pcs (in plastic bag) | MS1V-T1N | | | | | |

All specifications subject to change without notice.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Micro Crystal:

[MS1V-T1K-32.768kHz-6pF-20PPM-TA-QC-Au](#) [MS1V-T1K-32.768kHz-7pF-20PPM-TA-QC-Au](#) [MS1V-T1K-32.768kHz-9pF-20PPM-TA-QC-Au](#) [MS1V-T1K-32.768kHz-12.5pF-10PPM-TA-QC-Au](#) [MS1V-T1K-32.768kHz-10pF-20PPM-TA-QC-Au](#) [MS1V-T1K-32.768kHz-7pF-10PPM-TA-QC-Au](#) [MS1V-T1K-32.768kHz-12.5pF-20PPM-TA-QC-Au](#) [MS1V-T1K-32.768kHz-8.2pF-20PPM-TA-QC-Au](#) [MS1V-T1K-32.768kHz-6pF-10PPM-TA-QC-Au](#)