



S1V-T1K

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)	FL	32.768	kHz
Load capacitance	2)	CL	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.		Р	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		$\Delta F/F_0$	$-0.035 \text{ ppm/}_{C^2} (T - T_0)^2 \pm 10\%$	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, ½ sine	±5 ppm
Vibration resistance	$\Delta F/F$	20 g / 10–2000 Hz	±5 ppm

TERMINATIONS AND PROCESSING

Туре	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

<u>M S</u>	<u>1 V - T 1 K</u> <u>32.768 kHz</u> <u>12.5 pF</u> <u>±20 ppm</u> <u>TA</u> <u>QC</u>
Square metal packa MS1V = 2.0 x 2.0 x 6 SMT Package — Au flashed leads — Package lead form K = SMD spacing 2.54 N = Straight leads	b.1 mm Load capacitance C_ 6.0 pF 7.0 pF 9.0 pF 12.5 pF Other C, on request
A unique part numb	per 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.



Micro Crystal AG Muehlestrasse 14 CH-2540 Grenchen Switzerland Phone +41 32 655 82 82 sales@microcrystal.com www.microcrystal.com