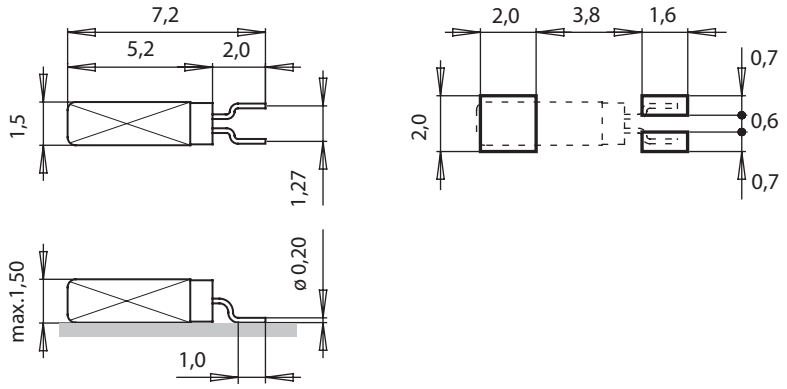
MICRO CRYSTAL SWITZERLAND

MS2V-T1S

Tuning Fork Crystal 30 kHz – 200 kHz

RoHS - compliant

DIMENSIONS



All dimensions in mm typical

Small SMT package
Package height 1.58 mm max.
Formed leads for SMD mounting
Industrial temp. range
Very price competitive
High stability
Low aging
Low power consumption
High shock and vibration resistance

DESCRIPTION:

The MS2V-T1S is a miniature square-bodied 1.5 x 7.2 x 1.5 mm metal package with formed leads, intended for surface mounting and reflow soldering.
Within the package is a high-quality tuning fork quartz crystal resonator, manufactured with a precision high-volume photolithographic process and operating in the fundamental mode.
Due to highly automated, large-volume production, the MS2V-T1S is very price competitive and ideal for any consumer and industrial applications.
For pick-and-place equipment, the crystals are supplied in 16 mm tape:
7” (178 mm) reel with 2’000 crystals
13” (330 mm) reel with 9’000 crystals

ELECTRICAL CHARACTERISTICS AT 25°C:

Frequency Range	F_L	**30–200**	**kHz**
Load capacitance 1)	C_L	7.0 / 9.0 / 12.5	pF
Frequency tolerance 2)	ΔF/F	+/-20	ppm
	ΔF/F	+/-100	ppm
Drive level max.	P	1.0	µW
Insulation resistance min.	R_i	500	MΩ
Aging first year max.	ΔF/F	+/-3	ppm

Frequency Example 3)	F_L	**32.000**	**32.768**	**75.000**	**kHz**
Series resistance typ./max.	R_S	50 / 65	50 / 65	19 / 30	kΩ
Motional capacitance typ.	C_1	2.3	2.1	1.45	fF
Static capacitance typ.	C_0	0.9	0.9	0.9	pF
Turnover temperature	T_0	25 +/-5	25 +/-5	22 +/-5	°C
Frequency vs. temperature	$\Delta F/F_0$	$-0.035\ ^{ppm}/_{°C^2}\,(T - T_0)^2$ +/-10%			ppm

1) For standard and other load capacitances consult factory.
2) Tighter and wider frequency tolerances on request.other frequencies consult factory.

STANDARD FREQUENCIES:

Frequency kHz				
32.000	32.768	38.400	75.000	76.800
77.500				
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	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
MS2V-T1S	Can: Au flashed Leads: Formed leads Au flashed	For SMD mounting Reflow soldering 260°C / 20 sec. max

PRODUCT DESCRIPTION AND ORDERING INFORMATION:

MS2V–T1S 32.768kHz 12.5pF +/-20ppm TA QC

Frequency F_L

C_L Load Capacitance

7.0 pF
9.0 pF
12.5 pF

Frequency tolerance

+/- 20 ppm
+/- 100 ppm

Temperature Range

TA = -40 to 85°C (Standard)

Optional:
if not defined,
‚Standard' will apply

Qualification

QC = Commercial (Standard)

A unique part number will be generated for each product specification, i.e:

20xxxx-ML02 2'000 pcs (in 16mm tape on 7" reel)
20xxxx-PL09 9'000 pcs (in 16mm tape on 13" reel)
Please contact us.

All specifications subject to change without notice.

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