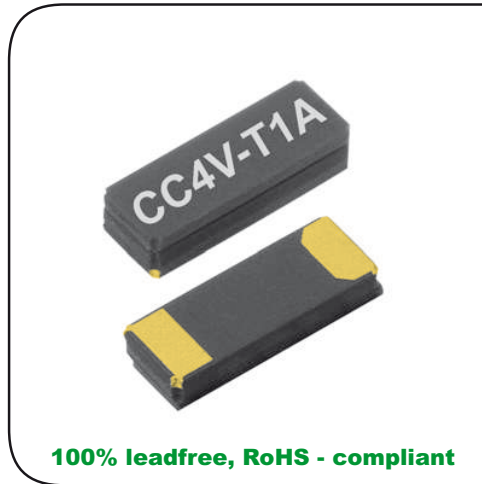
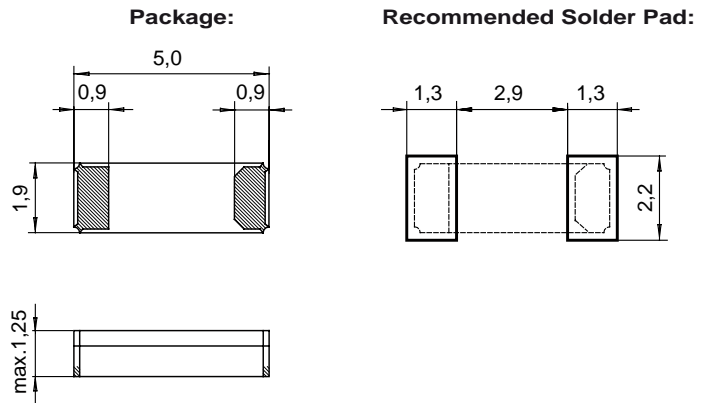


CC4V-T1A

Tuning Fork Crystal 30 kHz – 1.0 MHz



DIMENSIONS



All dimensions in mm typical

Miniature SMT ceramic package
Package height 1.25 mm
SMD-package in Tape and Reel
Ind. and Ext. temperature ranges
High stability
Low aging
Low power consumption
High shock and vibration resistance

DESCRIPTION:

This SMD ceramic package has been specially designed for miniature industrial, telecom and medical applications.

The crystals are supplied in special trays (100 crystals per tray).

For pick-and-place equipment, the parts are available in 12 mm tape:

7" (178 mm) reel with 2'000 crystals

13" (330 mm) reel with 10'000 crystals

ELECTRICAL CHARACTERISTICS AT 25°C:

Frequency Range	F_L	30-200	201-560	1'000	kHz
Load capacitance ¹⁾	C_L	9.0 / 12.5	4.0	10.0	pF
Frequency tolerance ²⁾	$\Delta F/F$	+/-30	+/-100	+/-100	ppm
	$\Delta F/F$	+/-100	+/-250	+/-500	ppm
Drive level max.	P	1.0			μW
Insulation resistance min.	R_i	500			M Ω
Aging first year max.	$\Delta F/F$	+/-3			ppm

Frequency Example ³⁾	F_L	32.768	307.200	1'000	kHz
Series resistance typ./max.	R_s	50 / 65	3.5 / 5.0	0.5 / 1.2	k Ω
Motional capacitance typ.	C_1	2.1	1.1	1.1	fF
Static capacitance typ.	C_0	1.2	1.2	1.0	pF
Turnover temperature	T_0	25 +/-5	33 +/-5	39 +/-5	°C
Frequency vs. temperature	$\Delta F/F_0$	-0.035 ppm/°C ² (T - T ₀) ²		+/-10%	ppm

1) Other load capacitances on request.

2) Tighter and wider frequency tolerances on request.

3) Values for other frequencies consult factory.

STANDARD FREQUENCIES:

Frequency kHz					Frequency MHz
32.000	32.768	36.409	38.400	40.000	1.000
60.000	75.000	76.800	100.000	128.000	1.008
153.600	240.000	307.200			
Other frequencies between 30 kHz and 1.008 MHz on request					

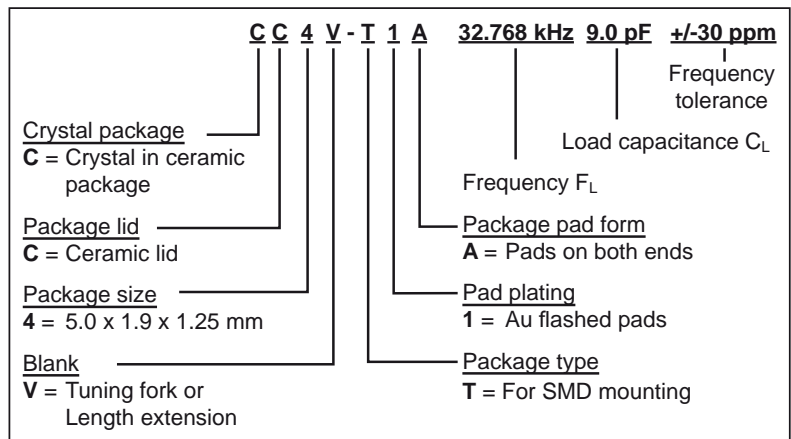
**ENVIRONMENTAL
CHARACTERISTICS:**

		Conditions	Max. Dev.
Storage temp. range		-55 to +125°C	
Industrial operating temp. range		-40 to +85°C	
Extended operating temp. range		-55 to +125°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
CC4V-T1A	For SMD mounting Au flashed pads	Reflow soldering 260°C / 20 s max.

**PART NUMBER/
ORDERING INFORMATION
EXAMPLE:**



All specifications subject to change without notice. 03.07



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