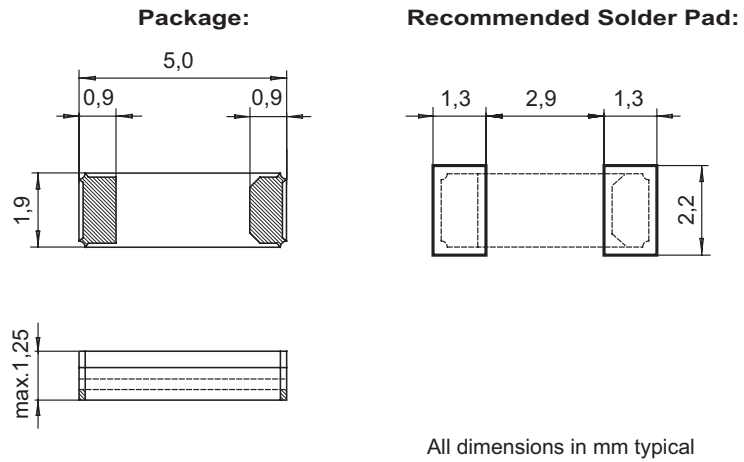


CC4V-T1A

Tuning Fork Crystal 30 kHz – 1.0 MHz



DIMENSIONS



Miniature ceramic package
 Package height 1.25 mm
 SMD-package in Tape and Reel
 Industrial and MIL temp. ranges
 High stability
 Low aging
 Low power consumption
 High shock and vibration resistance

The CC4V-T1A is a completely leadfree product.

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⁾	ΔF/F	+/-30	+/-100	+/-100	ppm
	ΔF/F	+/-100	+/-250	+/-500	ppm
Drive level max.	P	1.0			μW
Insulation resistance min.	R _i	500			M
Aging first year max.	ΔF/F	+/-3			ppm

Frequency Example ³⁾	F _L	32.768	307.200	1'000	kHz
Series resistance typ./max.	R _S	50 / 80	3.5 / 5.0	0.5 / 1.2	k
Motional capacitance typ.	C ₁	2.3	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	ΔF/F ₀	-0.035 ppm/°C² (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					

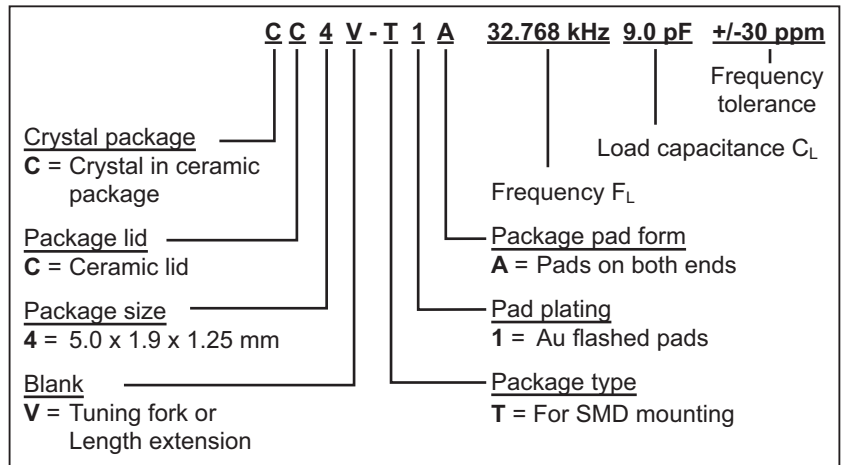
ENVIRONMENTAL CHARACTERISTICS:

		Conditions	Max. Dev.
Storage temp. range		-55 to +125°C	
Industrial operating temp. range		-40 to +85°C	
Military 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. 04.05



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