

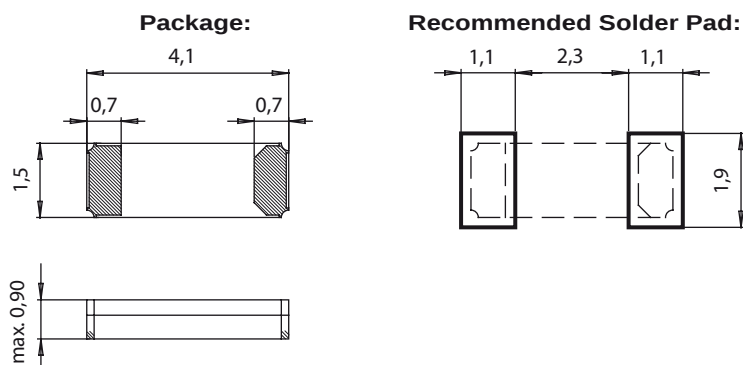
CC5V-T1A

Tuning Fork Crystal 32.768 kHz



100% leadfree, RoHS - compliant

DIMENSIONS



All dimensions in mm typical

Miniature SMT ceramic package
Package height 0.90 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 (200 crystals per tray).

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

- 7" (178 mm) reel with 3'000 crystals
- 10" (254 mm) reel with 7'000 crystals
- 13" (330 mm) reel with 14'000 crystals

ELECTRICAL CHARACTERISTICS AT 25°C:

Nominal Frequency ¹⁾	F _L	32.768	kHz
Load capacitance ²⁾	C _L	9.0 / 12.5	pF
Frequency tolerance ³⁾	ΔF/F	+/-30	ppm
	ΔF/F	+/-100	ppm
Series resistance typ./max. ⁴⁾	R _s	60 / 80	kΩ
Motional capacitance typ.	C ₁	2.1	fF
Static capacitance typ.	C ₀	1.4	pF
Drive level max.	P	1.0	μW
Insulation resistance min.	R _i	500	MΩ
Aging first year max.	ΔF/F	+/-3	ppm
Turnover temperature	T ₀	25 +/-5	°C
Frequency vs. temperature	ΔF/F ₀	-0.035 ppm/°C ² (T - T ₀) ² +/-10%	ppm

- 1) Other frequencies on request.
- 2) Other load capacitances on request.
- 3) Tighter and wider frequency tolerances on request.
- 4) On request 70 kΩ max.

STANDARD FREQUENCIES:

Frequency kHz
32.768
Other frequencies 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
CC5V-T1A	For SMD mounting Au flashed pads	Reflow soldering 260°C / 20 s max.

PART NUMBER/ ORDERING INFORMATION EXAMPLE:

<u>Crystal package</u> C = Crystal in ceramic package	<u>Package lid</u> C = Ceramic lid	<u>Package size</u> 5 = 4.1 x 1.5 x 0.90 mm	<u>Blank</u> V = Tuning fork	<u>Crystal package</u> C C	<u>Package lid</u> 5	<u>Package size</u> V	<u>Blank</u> T	<u>Crystal package</u> 1	<u>Package lid</u> A	<u>Frequency</u> 32.768 kHz	<u>Load capacitance</u> 9.0 pF	<u>Frequency tolerance</u> +/-30 ppm
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All specifications subject to change without notice. 03.07



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