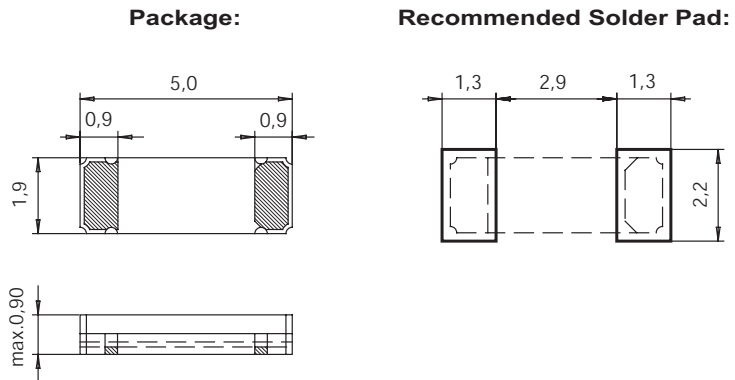


CC4V-T1A Thin

Tuning Fork Crystal 30 kHz – 1.0 MHz



DIMENSIONS



All dimensions in mm typical

Miniature ceramic package
 Package height 0.90 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 Thin 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 3'000 crystals

13" (330 mm) reel with 14'000 crystals

ELECTRICAL CHARACTERISTICS AT 25°C:

Nominal Frequency	¹⁾ F _L	30–200	kHz
Load capacitance	²⁾ C _L	9.0 / 12.5	pF
Frequency tolerance	³⁾ ΔF/F	+/-30	ppm
		+/-100	ppm
Series resistance typ./max.	R _S	50 / 80 ⁴⁾	k
Motional capacitance typ.	C ₁	2.3	fF
Static capacitance typ.	C ₀	1.4	pF
Drive level max.	P	1.0	μW
Insulation resistance min.	R _i	500	M
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 65 k 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	
Military operating temp. range		-55 to +125°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
CC4V-T1A Thin	For SMD mounting Au flashed pads	Reflow soldering 260°C/20 s max.

**PART NUMBER/
ORDERING INFORMATION
EXAMPLE:**

<p style="text-align: center;">C C 4 V - T 1 A Thin 32.768 kHz 9.0 pF +/-30 ppm</p> <p><u>Crystal package</u> C = Crystal in ceramic package</p> <p><u>Package lid</u> C = Ceramic lid</p> <p><u>Package size</u> 4 = 5.0 x 1.9 x 0.90 mm</p> <p><u>Blank</u> V = Tuning fork or Length extension</p>	<p style="text-align: center;">Frequency tolerance</p> <p style="text-align: center;">Load capacitance C_L</p> <p style="text-align: center;">Frequency F_L</p> <p style="text-align: center;">Thickness max. 0.90 mm</p> <p style="text-align: center;"><u>Package pad form</u> A = Pads on both ends</p> <p style="text-align: center;"><u>Pad plating</u> 1 = Au flashed pads</p> <p style="text-align: center;"><u>Package type</u> T = For SMD mounting</p>
--	--

All specifications subject to change without notice. 04.05



A COMPANY OF THE **SWATCH GROUP**

Headquarters:
 Micro Crystal
 Div. of ETA SA
 Mühlestrasse 14
 CH-2540 Grenchen
 Switzerland
 Tel. +41 32 655 82 82
 Fax +41 32 655 82 83
 sales@microcrystal.ch
 www.microcrystal.ch

North American Sales Office:
 Micro Crystal
 A Div. of The Swatch Group (U.S.) Inc.
 1615 Barclay Boulevard
 Buffalo Grove, IL 60089
 USA
 Tel. +1 847 818 9825
 Fax +1 847 818 9915
 sales@microcrystal.com
 www.microcrystal.com