

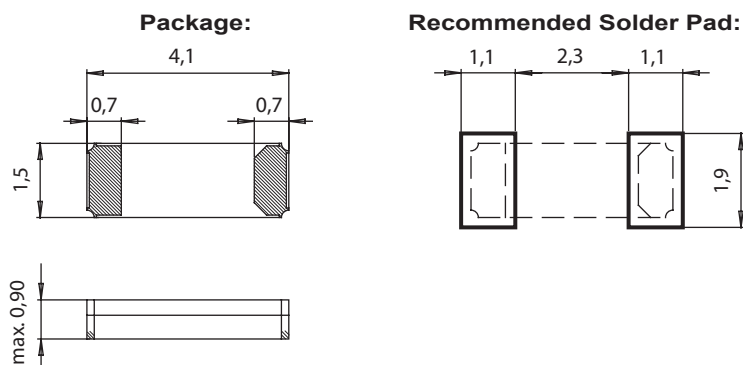
CC5V-T1A

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 1'000 crystals
- 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	32.768	kHz
Load capacitance	²⁾ C_L	7.0 / 9.0 / 12.5	pF
Frequency tolerance	$\Delta F/F$	+/-20	ppm
	$\Delta F/F$	+/-100	ppm
Series resistance typ./max.	R_s	50 / 70	k Ω
Motional capacitance typ.	C_1	2.8	fF
Static capacitance typ.	C_0	1.2	pF
Drive level max.	P	1.0	μ W
Insulation resistance min.	R_i	500	M Ω
Aging first year max.	$\Delta F/F$	+/-3	ppm
Turnover temperature	T_0	25 +/-5	°C
Frequency vs. temperature	$\Delta F/F_0$	$-0.035 \text{ ppm}/^\circ\text{C}^2 (T - T_0)^2 \text{ +/-} 10\%$	ppm

1) Other frequencies on request.

2) Other load capacitances on request.

3) Tighter and wider frequency tolerances on request.

STANDARD FREQUENCIES:

Frequency kHz
32.768
Other frequencies on request

**ENVIRONMENTAL
CHARACTERISTICS:**

		Conditions	Max. Dev.
Storage temp. range		-55 to +125°C	
TA Operating temperature range		-40 to +85°C	
TB Extended oper. temp. range		-40 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 plated pads	Reflow soldering 260°C / 20 s max.

**PRODUCT DESCRIPTION AND
ORDERING INFORMATION:**

CC5V-T1A	32.768kHz	12.5pF	+/-20ppm	TA	QC
<u>Frequency F_L</u>					
<u>C_L Load Capacitance</u>					
7.0 pF					
9.0 pF					
12.5 pF					
<u>Frequency tolerance</u>					
+/- 20 ppm					
+/- 100 ppm					
			<u>Temperature Range</u>		
			TA = -40 to 85°C (Standard)		
			TB = -40 to +125°C		
Optional: if not defined, 'Standard' will apply			<u>Qualification</u>		
			QC = Commercial (Standard)		
			QM = Medical		
A unique part number will be generated for each product specification, i.e:					
20xxxx-MG01					1'000 pcs (in 12mm tape on 7" reel)
20xxxx-MG03					3'000 pcs (in 12mm tape on 7" reel)
20xxxx-PG14					14'000 pcs (in 12mm tape on 13" reel)
Please contact us.					

All specifications subject to change without notice.



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