

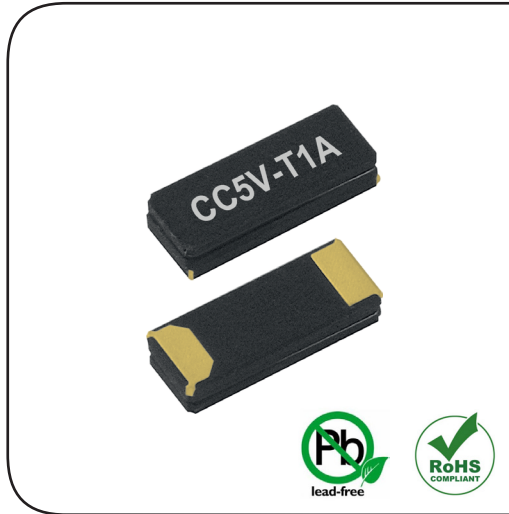


**THE DATASHEET OF  
CC5V-T1A-32.768KHZ-9PF-20PPM-TA-QC**

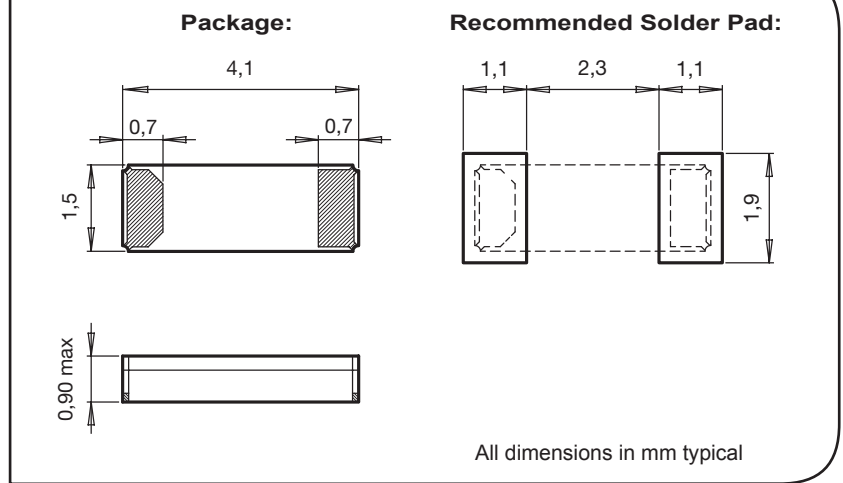


# CC5V-T1A

## Tuning Fork Crystal 32.768 kHz



### DIMENSIONS



### APPLICATIONS

Metering  
Industrial  
Automotive  
Health Care  
Medical Implantable  
Harsh Environments

### DESCRIPTION

The CC5V-T1A is a low frequency SMT Quartz Crystal Unit that incorporates a tuning fork Quartz Crystal Resonator. It operates under vacuum in a hermetically sealed ceramic package with ceramic lid.

*CC5V-T1A is compatible with other suppliers' same footprint crystals.*

### FEATURES

Mature product for harsh environments.  
Outstanding hermetic sealing with gold-tin preform.  
High stability and low aging guaranteed by hermetic sealing.  
Available for extended operating temperature range.  
High shock and vibration resistant.  
100% Pb-free, RoHS-compliant.

### ELECTRICAL CHARACTERISTICS AT 25°C

Standard Frequencies 32.768 kHz / 102.400 kHz <sup>1)</sup>	F <sub>L</sub>	32.768	kHz
Load capacitance <sup>2)</sup>	C <sub>L</sub>	6.0 / 7.0 / 9.0 / 12.5	pF
Frequency tolerance <sup>3)</sup>	ΔF/F	±20	ppm
	ΔF/F	±100	ppm
Series resistance typ./max.	R <sub>S</sub>	50 / 70	kΩ
Motional capacitance typ.	C <sub>1</sub>	2.8	fF
Static capacitance typ.	C <sub>0</sub>	1.2	pF
Drive level max.	P	1.0	μW
Insulation resistance min.	R <sub>i</sub>	500	MΩ
Aging first year max.	ΔF/F	±3	ppm
Turnover temperature	T <sub>0</sub>	25 ±5	°C
Frequency vs. temperature	ΔF/F <sub>0</sub>	-0.035 ppm/°C · (T - T <sub>0</sub> ) <sup>2</sup> ±10%	

- 1) Other frequencies on request.  
2) Other load capacitances on request.  
3) Tighter frequency tolerances on request.

**STANDARD FREQUENCIES**

Frequencies	
32.768 kHz / 102.400 kHz	
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	
TC Extended oper. 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
CC5V-T1A	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s
CC5V-T2A	SnPb plated pads available only on request	

**ORDERING INFORMATION**

**C C 5 V - T 1 A 32.768 kHz 12.5 pF ±20 ppm TA QC**

**Ceramic package** \_\_\_\_\_

**Ceramic lid** \_\_\_\_\_

**Package size** \_\_\_\_\_  
5 = 4.1 x 1.5 x 0.90 mm

**Tuning fork** \_\_\_\_\_

**SMT Package** \_\_\_\_\_

**Pads** \_\_\_\_\_  
1 = Au flashed pads  
2 = SnPb plated pads

**Pads on both ends** \_\_\_\_\_

**Frequency  $F_L$**  \_\_\_\_\_

**Load capacitance  $C_L$**  \_\_\_\_\_  
6.0 pF  
7.0 pF  
9.0 pF  
12.5 pF  
Other  $C_L$  on request

**Frequency tolerance** \_\_\_\_\_  
±20 ppm  
±100 ppm  
Tighter freq. tolerances on request

**Temperature range** \_\_\_\_\_  
**TA** = -40 to +85°C (Standard)  
**TB** = -40 to +125°C  
**TC** = -55 to +125°C

**Qualification** \_\_\_\_\_  
**QC** = Commercial Grade (Standard)  
**QM** = Medical Grade

A unique part number will be generated for each product specification, i.e:	
20xxxx-MG01	1'000 pcs (in 12 mm tape on 7" reel)
20xxxx-MG03	3'000 pcs (in 12 mm tape on 7" reel)
20xxxx-PG14	14'000 pcs (in 12 mm tape on 13" reel)

All specifications subject to change without notice.



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## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View CC5V-T1A-32.768KHZ-9PF-20PPM-TA-QC on WIN SOURCE](#)
- ⊖ [Micro Crystal AG Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management