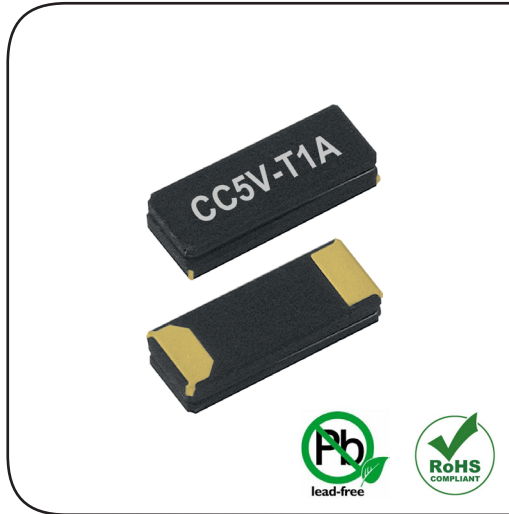
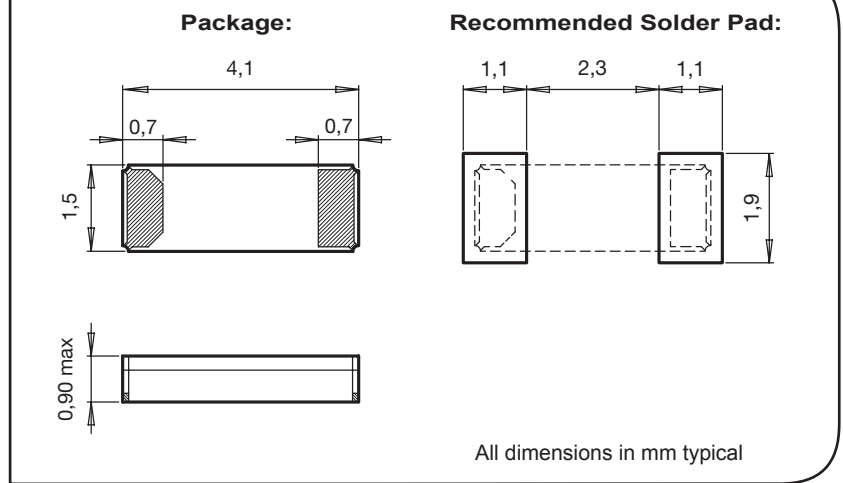


CC5V-T1A

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 ¹⁾	F_L	32.768	kHz
Load capacitance ²⁾	C_L	6.0 / 7.0 / 9.0 / 12.5	pF
Frequency tolerance ³⁾	$\Delta F/F$	±20	ppm
	$\Delta F/F$	±100	ppm
Series resistance typ./max.	R_S	50 / 70	kΩ
Motional capacitance typ.	C_1	2.8	fF
Static capacitance typ.	C_0	1.2	pF
Drive level max.	P	1.0	μW
Insulation resistance min.	R_i	500	MΩ
Aging first year max.	$\Delta F/F$	±3	ppm
Turnover temperature	T_0	25 ±5	°C
Frequency vs. temperature	$\Delta F/F_0$	$-0.035 \text{ ppm}/^\circ\text{C}^2 (T - T_0)^2 \pm 10\%$	ppm

- 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

<p>Ceramic package _____</p> <p>Ceramic lid _____</p> <p>Package size _____ 5 = 4.1 x 1.5 x 0.90 mm</p> <p>Tuning fork _____</p> <p>SMT Package _____</p> <p>Pads _____ 1 = Au flashed pads 2 = SnPb plated pads</p> <p>Pads on both ends _____</p>	<p>Frequency F_L _____</p> <p>Load capacitance C_L _____ 6.0 pF 7.0 pF 9.0 pF 12.5 pF Other C_L on request</p> <p>Frequency tolerance _____ ±20 ppm ±100 ppm Tighter freq. tolerances on request</p> <p>Temperature range _____ TA = -40 to +85°C (Standard) TB = -40 to +125°C TC = -55 to +125°C</p> <p>Qualification _____ QC = Commercial Grade (Standard) QM = Medical Grade</p>
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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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