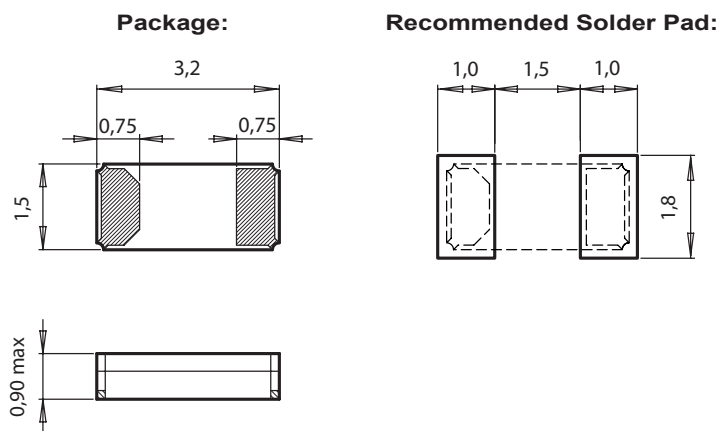


CC7V-T1A

Tuning Fork Crystal 32.768 kHz



DIMENSIONS



All dimensions in mm typical

APPLICATIONS

Metering
Industrial
Automotive
Health Care
Medical Implantable

DESCRIPTION

The CC7V-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.

FEATURES

Outstanding hermetic sealing with gold-tin preform.
High stability and low aging guaranteed by hermetic sealing.
Available for extended operating temperature range.
Small size, low profile, lightweight (12.5 mg).
High shock and vibration resistant.
100% Pb-free, RoHS-compliant.
Automotive qualification according to AEC-Q200 available.

ELECTRICAL CHARACTERISTICS AT 25°C

Standard Frequencies 32.768 kHz / 100.000 kHz ¹⁾	F _L	32.768	kHz
Load capacitance ²⁾	C _L	6.0 / 7.0 / 9.0 / 12.5	pF
Frequency tolerance ³⁾	ΔF/F	±20	ppm
	ΔF/F	±100	ppm
Series resistance typ./max.	R _S	50 / 70	kΩ
Motional capacitance typ.	C ₁	3.7	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.	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 frequency tolerances on request.

STANDARD FREQUENCIES

Frequencies
32.768 kHz / 100.000 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	$\Delta F/F$	5000 g, 0.3 ms, ½ sine	±5 ppm
Vibration resistance	$\Delta F/F$	20 g / 10–2000 Hz	±5 ppm

TERMINATIONS AND PROCESSING

Type	Termination	Processing
CC7V-T1A	For SMT mounting Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s
CC7V-T2A	SnPb plated pads available on request	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

ORDERING INFORMATION

C Ceramic package C Ceramic lid 7 Package size 7 = 3.2 x 1.5 x 0.90 mm V Tuning fork T SMT Package 1 Pads 1 = Au flashed pads 2 = SnPb plated pads A Pads on both ends	32.768 kHz Frequency F_L 12.5 pF Load capacitance C_L 6.0 pF 7.0 pF 9.0 pF 12.5 pF Other C_L on request ±20 ppm Frequency tolerance ±20 ppm ±100 ppm Tighter freq. tolerances on request TA Temperature range TA = –40 to +85°C (Standard) TB = –40 to +125°C TC = –55 to +125°C QC Qualification QC = Commercial Grade (Standard) QA = Automotive Grade AEC-Q200 QM = Medical Grade
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A unique part number will be generated for each product specification, i.e:	
20xxx-MG01	1'000 pcs (in 12 mm tape on 7" reel)
20xxx-MG03	3'000 pcs (in 12 mm tape on 7" reel)
20xxx-PG14	14'000 pcs (in 12 mm tape on 13" reel)

All specifications subject to change without notice.



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