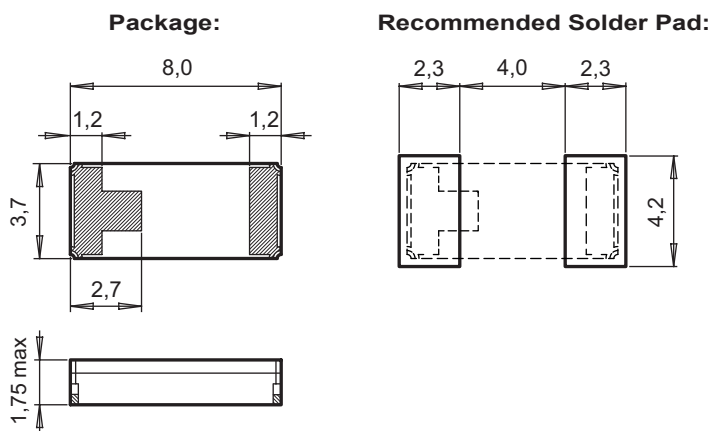


CC1V-T1A

Tuning Fork Crystal 30 kHz – 2.0 MHz



DIMENSIONS



All dimensions in mm typical

APPLICATIONS

Metering
Industrial
Automotive
Health Care
Harsh Environments
Consumer Electronics

DESCRIPTION

The CC1V-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

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

Frequency Range	F _L	30–200	201–560	561–2'000	kHz
Load capacitance ¹⁾	C _L	9.0 12.5	4.0	10.0	pF
Frequency tolerance ²⁾	ΔF/F	±20	±100	±100	ppm
	ΔF/F	±100	±250	±500	ppm
Drive level max.	P	1.0			μW
Insulation resistance min.	R _i	500			MΩ
Aging first year max.	ΔF/F	±3			ppm

Standard Frequencies ³⁾	F _L	32.768	307.200	1'843.2	kHz
Series resistance typ./max.	R _S	40 / 60	1.4 / 3.5	0.12 / 0.4	kΩ
Motional capacitance typ.	C ₁	2.0	1.6	3.8	fF
Static capacitance typ.	C ₀	1.6	2.0	1.6	pF
Turnover temperature	T ₀	25 ±5	32 ±5	33 ±5	°C
Frequency vs. temperature	ΔF/F ₀	–0.035 ppm/°C² (T – T ₀)² ±10%			ppm

1) Other load capacitances on request.

2) Tighter frequency tolerances on request.

3) Other standard frequencies, see below.

STANDARD FREQUENCIES

Frequencies				
32.768 kHz	38.400 kHz	40.000 kHz	51.200 kHz	307.200 kHz
500.000 kHz	1.0000 MHz	1.2288 MHz	1.8432 MHz	2.0000 MHz
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, 1/2 sine	±5 ppm
Vibration resistance	$\Delta F/F$	20 g / 10–2000 Hz	±5 ppm

TERMINATIONS AND PROCESSING

Type	Termination	Processing
CC1V-T1A	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

ORDERING INFORMATION

C C 1 V - T 1 A		32.768 kHz	12.5 pF	±20 ppm	TA	QC
Ceramic package		Frequency F_L				
Ceramic lid		Load capacitance C_L				
Package size		4.0 pF				
1 = 8.0 x 3.7 x 1.75 mm		9.0 pF				
Tuning fork		10.0 pF				
SMT Package		12.5 pF				
Au flashed pads		Other C_L on request				
Pads on both ends		Frequency tolerance				
		±20 ppm, ±100 ppm				
		±250 ppm				
		±500 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)				
A unique part number will be generated for each product specification, i.e:						
20xxxx-ML01	1'000 pcs (in 16 mm tape on 7" reel)					
20xxxx-PL04	4'000 pcs (in 16 mm tape on 13" reel)					

All specifications subject to change without notice.