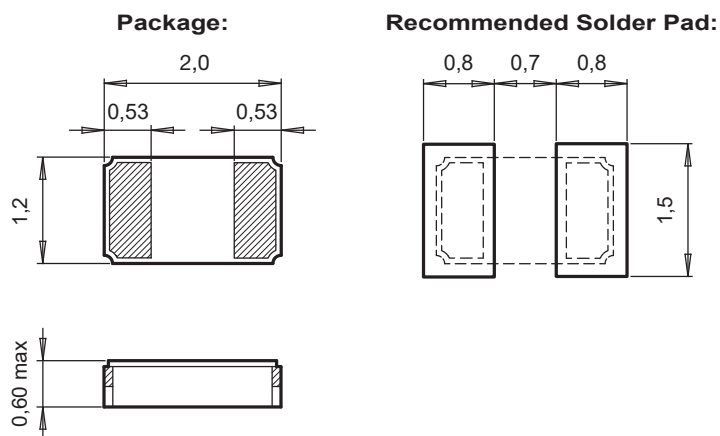


CM8V-T1A

Tuning Fork Crystal 32.768 kHz



DIMENSIONS



All dimensions in mm typical

APPLICATIONS

IoT
Metering
Industrial
Automotive
Health Care
Wearables, Portables

DESCRIPTION

The CM8V-T1A is a low frequency SMD Quartz Crystal Unit that incorporates a tuning fork Quartz Crystal Resonator. It operates under vacuum in a hermetically sealed ceramic package with metal lid.

FEATURES

Ultra small size, low profile, lightweight (4.6 mg).
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.
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	4.0 / 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	55 / 70	kΩ
Motional capacitance typ.	C ₁	4.7	fF
Static capacitance typ.	C ₀	1.2	pF
Drive level max.	P	0.5	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 temperature 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
CM8V-T1A	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

ORDERING INFORMATION

C M 8 V - T 1 A		32.768 kHz	12.5 pF	±20 ppm	TA	QC
Ceramic package		Frequency F_L				
Metal lid		Load capacitance C_L				
Package size		4.0 pF				
8 = 2.0 x 1.2 x 0.60 mm		6.0 pF				
Tuning fork		7.0 pF				
SMD Package		9.0 pF				
Au flashed pads		12.5 pF				
2 pads		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)				
		QA = Automotive Grade AEC-Q200				
A unique part number will be generated for each product specification, i.e:						
20xxxx-MC01	1'000 pcs	(in 8 mm tape on 7" reel)				
20xxxx-MC03	3'000 pcs	(in 8 mm tape on 7" reel)				

All specifications subject to change without notice.



Micro Crystal AG
Muehlestrasse 14
CH-2540 Grenchen
Switzerland

Phone +41 32 655 82 82
sales@microcrystal.com
www.microcrystal.com