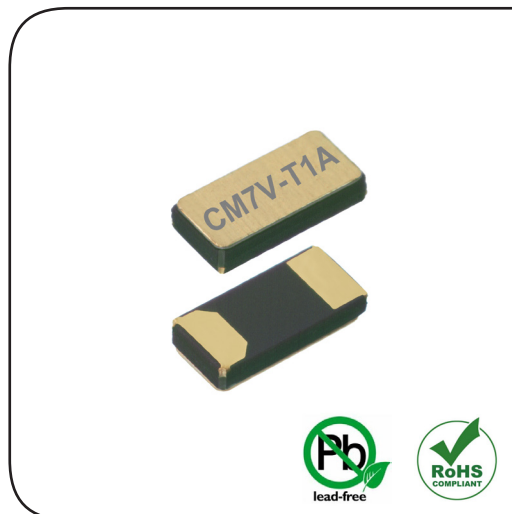
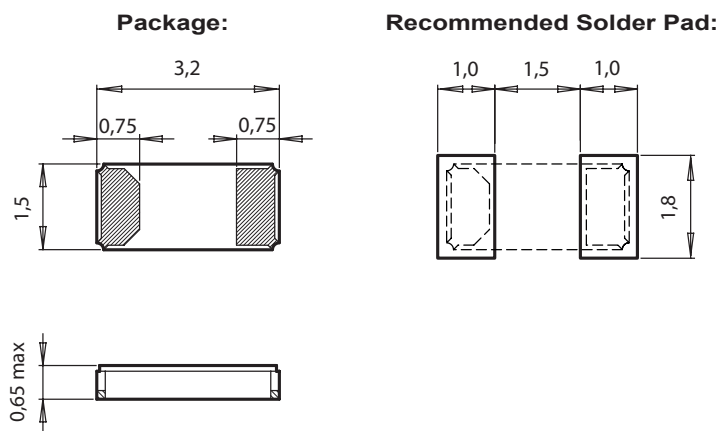


CM7V-T1A

Tuning Fork Crystal 32.768 kHz



DIMENSIONS



All dimensions in mm typical

APPLICATIONS

IoT
Metering
Industrial
Automotive
Health Care
Wearables, Portables

DESCRIPTION

The CM7V-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 metal 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 (10.3 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	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
CM7V-T1A	For SMT mounting Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

ORDERING INFORMATION

C M 7 V - T 1 A

Ceramic package

Metal lid

Package size

7 = 3.2 x 1.5 x 0.65 mm

Tuning fork

SMT Package

Au flashed pads

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

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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