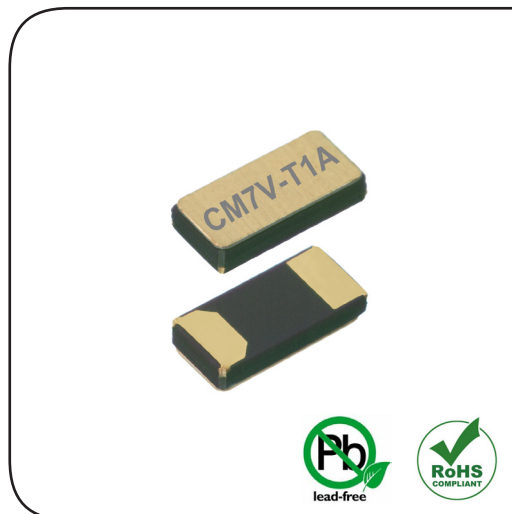
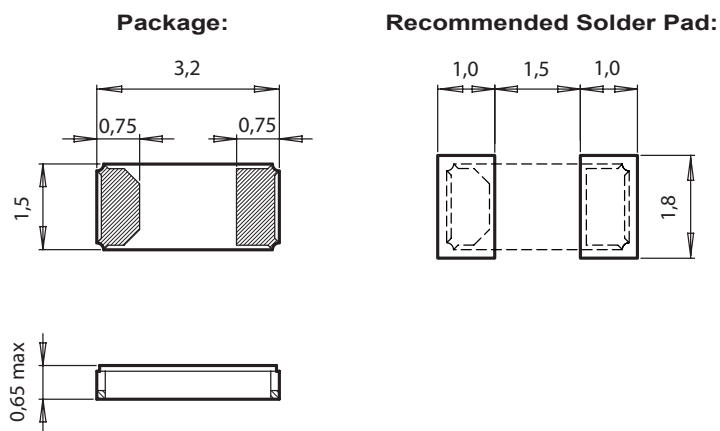


CM7V-T1A

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	$\Delta F/F$	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
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	32.768 kHz	12.5 pF	±20 ppm	TA	QC
Ceramic package									Frequency F_L				
Metal lid									Load capacitance C_L				
Package size									6.0 pF				
7 = 3.2 x 1.5 x 0.65 mm									7.0 pF				
Tuning fork									9.0 pF				
SMT Package									12.5 pF				
Au flashed pads									Other C_L on request				
Pads on both ends									Frequency tolerance				
									±20 ppm				
									±100 ppm				
									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-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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Micro Crystal:

[CM7V-T1A-32.768kHz-7pF-20PPM-TA-QC](#) [CM7V-T1A-32.768kHz-7pF-10PPM-TA-QC](#) [CM7V-T1A-32.768k-12.5pF-20PPM-TB-QA](#) [CM7V-T1A-32.768k-9pF-20PPM-TA-QA](#) [CM7V-T1A-32.768k-7pF-100PPM-TB-QA](#) [CM7V-T1A-32.768kHz-12.5pF-20PPM-TA-QC](#) [CM7V-T1A-32.768kHz-6pF-20PPM-TA-QC](#) [CM7V-T1A-32.768kHz-9pF-20PPM-TC-QC](#) [CM7V-T1A-32.768k-9pF-100PPM-TC-QA](#) [CM7V-T1A-32.768kHz-12.5pF-10PPM-TB-QC](#) [CM7V-T1A-32.768kHz-7pF-20PPM-TB-QC](#) [CM7V-T1A-100.000KHZ-9PF-100PPM-TA-QC](#) [CM7V-T1A-32.768k-7pF-20PPM-TB-QA](#) [CM7V-T1A-32.768kHz-9pF-20PPM-TA-QC](#) [CM7V-T1A-32.768kHz-6pF-10PPM-TA-QC](#) [CM7V-T1A-32.768kHz-12.5pF-20PPM-TC-QC](#) [CM7V-T1A-32.768kHz-9pF-100PPM-TA-QC](#) [CM7V-T1A-32.768kHz-12.5pF-100PPM-TC-QC](#) [CM7V-T1A-32.768k-12.5pF-10PPM-TA-QA](#) [CM7V-T1A-32.768k-12.5pF-20PPM-TC-QA](#) [CM7V-T1A-32.768kHz-12.5pF-100PPM-TA-QC](#) [CM7V-T1A-32.768k-6pF-20PPM-TB-QA](#) [CM7V-T1A-32.768kHz-12.5pF-20PPM-TB-QC](#) [CM7V-T1A-32.768kHz-12.5pF-100PPM-TB-QC](#) [CM7V-T1A-32.768k-9pF-20PPM-TB-QA](#) [CM7V-T1A-32.768kHz-9pF-20PPM-TB-QC](#) [CM7V-T1A-32.768kHz-12.5pF-100PPM-TB-QC](#) [CM7V-T1A-32.768k-9pF-20PPM-TC-QA](#) [CM7V-T1A-32.768kHz-7pF-100PPM-TA-QC](#) [CM7V-T1A-32.768kHz-12.5pF-10PPM-TA-QC](#) [CM7V-T1A-32.768k-7pF-20PPM-TC-QA](#) [CM7V-T1A-32.768kHz-9pF-10PPM-TB-QC](#) [CM7V-T1A-32.768k-12.5pF-20PPM-TA-QA](#) [CM7V-T1A-32.768kHz-9pF-10PPM-TA-QC](#) [CM7V-T1A-32.768k-7pF-20PPM-TA-QA](#) [CM7V-T1A-32.768k-9pF-20PPM-TA-QA T3](#) [CM7V-T1A-32.768kHz-7pF-20PPM-TB-QA](#) [201563-MG03](#) [CM7V-T1A-32.768kHz-7pF-10PPM-TA-QC T3](#) [CM7VT1A32.768K12.5PF20PT3](#) [CM7VT1A32.768K7PF20PTR1](#)