

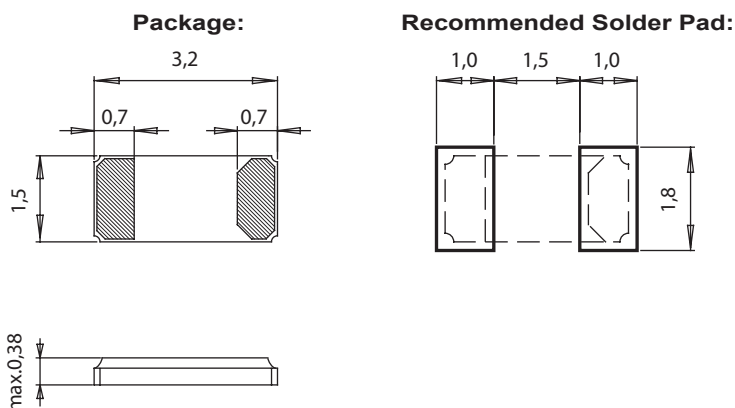
CM7V-T1A 0.4

Tuning Fork Crystal 32.768 kHz



100% leadfree, RoHS - compliant

DIMENSIONS



All dimensions in mm typical

Lowest profile SMT ceramic pack.
Ultra low profile: 0.38 mm height
SMD-package in Tape and Reel
Ind. and Ext. temperature ranges
High stability
Low aging
Low power consumption
High shock and vibration resistance

DESCRIPTION:

This SMD ceramic package has been specially designed for ultra low profile telecom and smart-card applications. A special crystal manufacturing process is used to achieve improved electrical characteristics and a miniaturized blank size.

For pick-and-place equipment, the parts are available in 8 mm tape:

- 7" (178 mm) reel with 1'000 crystals
- 7" (178 mm) reel with 3'000 crystals
- 13" (330 mm) reel with 14'000 crystals

ELECTRICAL CHARACTERISTICS AT 25°C:

Nominal Frequency ¹⁾	F _L	32.768	kHz
Load capacitance ²⁾	C _L	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 / 80	kΩ
Motional capacitance typ.	C ₁	3.5	fF
Static capacitance typ.	C ₀	1.4	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 and wider frequency tolerances on request.

STANDARD FREQUENCIES:

Frequency kHz
32.768
Other frequencies on request

ENVIRONMENTAL CHARACTERISTICS:

		Conditions	Max. Dev.
Storage temperature range		-55 to +125°C	
TA Operating temperature range		-40 to +85°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 0.4	For SMD mounting Au plated pads	Reflow soldering 260°C / 20 s max.

PRODUCT DESCRIPTION AND ORDERING INFORMATION:

CM7V-T1A 0.4	32.768kHz	12.5pF	+/-20ppm	TA	QC
<u>Frequency F₀</u>					
<u>C_L Load Capacitance</u>					
7.0 pF					
9.0 pF					
12.5 pF					
<u>Frequency tolerance</u>					
+/- 20 ppm					
+/- 100 ppm					
			<u>Temperature Range</u>		
			TA = -40 to 85°C (Standard)		
			<u>Optional:</u> if not defined, 'Standard' will apply		
			<u>Qualification</u>		
			QC = Commercial (Standard)		
A unique part number will be generated for each product specification, i.e:					
20xxxx-MC01					1'000 pcs (in 8mm tape on 7" reel)
20xxxx-MC03					3'000 pcs (in 8mm tape on 7" reel)
20xxxx-PC14					14'000 pcs (in 8mm tape on 13" reel)
Please contact us.					

All specifications subject to change without notice.



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