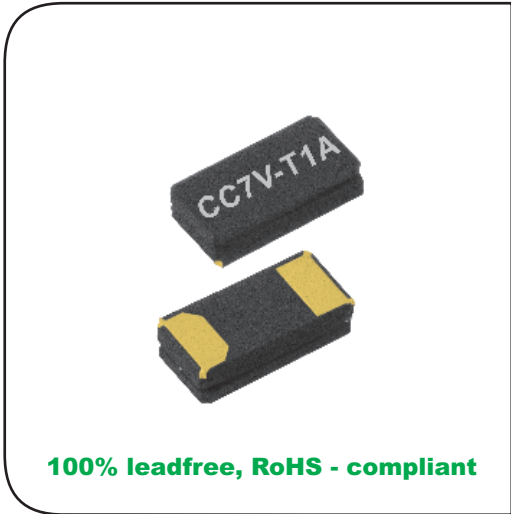
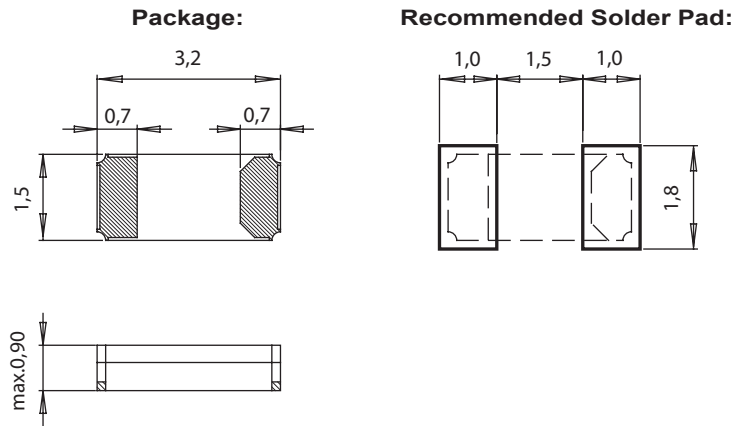


CC7V-T1A

Tuning Fork Crystal 32.768 kHz



DIMENSIONS



All dimensions in mm typical

Miniature SMT ceramic package
Package height 0.90 mm
SMD-package in Tape and Reel
Ind. and Ext. temperature ranges
AEC-Q200 automotive compliant
High stability, Low aging
Low power consumption
High shock and vibration resistance

DESCRIPTION:

This SMD ceramic package has been specially designed for miniature industrial, telecom and portable applications. This part is available for extended operating temperature range and is compliant with the AEC-Q200 quality standards for automotive applications.

A special crystal manufacturing process is used to achieve improved electrical characteristics and a miniaturized blank size.

The crystals are supplied in special trays (200 crystals per tray).

For pick-and-place equipment, the parts are available in 12 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
		+/-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 and wider frequency tolerances on request.

STANDARD FREQUENCIES:

Frequency kHz
32.768
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
CC7V-T1A	For SMD mounting Au plated pads	Reflow soldering 260°C / 20 s max.

**PRODUCT DESCRIPTION AND
ORDERING INFORMATION:**

CC7V-T1A 32.768kHz 12.5pF +/-20ppm TA QC

Frequency F₀ _____

C_L Load Capacitance _____

7.0 pF
9.0 pF
12.5 pF

Frequency tolerance _____

+/- 20 ppm
+/- 100 ppm

Temperature Range _____

TA = -40 to 85°C (Standard)
TB = -40 to +125°C
TC = -55 to +125°C

Optional:
if not defined,
,Standard' will apply

Qualification _____

QC = Commercial (Standard)
QA = Automotive AEC-Q200
QM = Medical

A unique part number will be generated for each product specification, i.e:

20xxx-MG01	1'000 pcs (in 12mm tape on 7" reel)
20xxx-MG03	3'000 pcs (in 12mm tape on 7" reel)
20xxx-PG14	14'000 pcs (in 12mm tape on 13" reel)

Please contact us.

All specifications subject to change without notice.



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