

CC4V-T1A

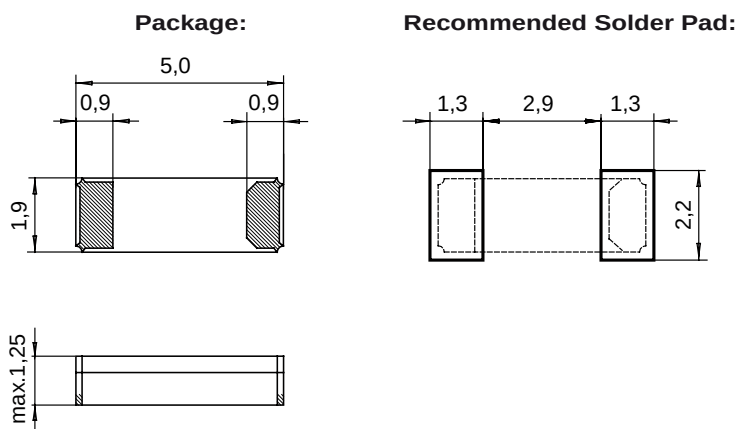
Automotive Qualified AEC Q200



100% leadfree, RoHS - compliant

AEC Q200 compliant
Miniature SMT ceramic package
Package height 1.25 mm
SMD-package in Tape and Reel
Ind. and Ext. temperature ranges
High stability
Low aging
Low power consumption
High shock and vibration resistance

DIMENSIONS



All dimensions in mm typical

DESCRIPTION:

This SMD ceramic package has been specially designed for automotive, industrial, telecom and medical applications.

The crystals are supplied in special trays (100 crystals per tray).

For pick-and-place equipment, the parts are available in 12 mm tape:

7" (178 mm) reel with 2'000 crystals

13" (330 mm) reel with 10'000 crystals

ELECTRICAL CHARACTERISTICS AT 25°C:

Nominal Frequency	¹⁾ F _L	32.768	kHz
Load capacitance	²⁾ C _L	9.0 / 12.5	pF
Frequency tolerance	³⁾ ΔF/F	+/-30	ppm
	ΔF/F	+/-100	ppm
Series resistance typ./max.	R _S	50 / 80	kΩ
Motional capacitance typ.	C ₁	2.1	fF
Static capacitance typ.	C ₀	1.4	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.

Automotive

STANDARD FREQUENCIES:

Frequency kHz
32.768
Other frequencies on request

ENVIRONMENTAL
CHARACTERISTICS:

		Conditions	Max. Dev.
Storage temp. range		-55 to +125°C	
Industrial operating temp. range		-40 to +85°C	
Extended operating 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
CC4V-T1A	For SMD mounting Au flashed pads	Reflow soldering 260°C / 20 s max.

PART NUMBER/
ORDERING INFORMATION
EXAMPLE:

<u>Crystal package</u> C = Crystal in ceramic package	<u>Package lid</u> C = Ceramic lid	<u>Package size</u> 4 = 5.0 x 1.9 x 1.25 mm	<u>Blank</u> V = Tuning fork or Length extension	<u>CC</u>	<u>4</u>	<u>V</u>	<u>-</u>	<u>I</u>	<u>1</u>	<u>A</u>	<u>32.768 kHz</u> Frequency F _L	<u>9.0 pF</u> Load capacitance C _L	<u>+/-30 ppm</u> Frequency tolerance
											<u>Package pad form</u> A = Pads on both ends		
											<u>Pad plating</u> 1 = Au flashed pads		
											<u>Package type</u> T = For SMD mounting		

All specifications subject to change without notice. 03.07



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