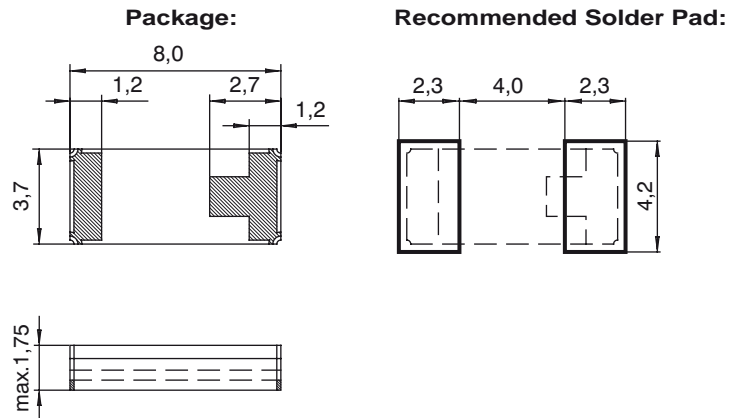


CC1A-T1A

AT Crystal 8 MHz – 30 MHz



DIMENSIONS



All dimensions in mm typical

Small ceramic package
 Package height 1.75 mm
 Fundamental mode frequencies
 SMD-package in Tape and Reel
 Industrial and MIL temp. ranges
 High stability
 Low aging
 High shock and vibration resistance

The CC1A-T1A is a completely leadfree product.

DESCRIPTION:

This SMD ceramic package has been specially designed for small industrial, telecom and electronic applications. All frequencies are generated in fundamental mode.

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

For pick-and-place equipment, the parts are available in 16 mm tapes:

7" (178 mm) reel with 1'000 crystals

10" (254 mm) reel with 2'000 crystals

ELECTRICAL CHARACTERISTICS AT 25°C:

Frequency Range	F_L	8-30	MHz
Load capacitance ¹⁾	C_L	20.0	pF
Frequency tolerance at 25°C ²⁾	$\Delta F/F$	+/-50	ppm
Frequency versus temperature -40°C to 85°C	$\Delta F/F_0$	+/-50	ppm
Drive level max.	P	500	μW
Insulation resistance min.	R_i	500	MΩ
Aging first year max.	$\Delta F/F$	+/-3	ppm

Frequency Example ³⁾	F_L	10.000	16.384	24.000	MHz
Series resistance typ./max.	R_S	35 / 75	20 / 50	20 / 50	Ω
Motional capacitance typ.	C_1	5.2	7.2	11.5	fF
Static capacitance typ.	C_0	2.2	2.8	3.6	pF

1) Other load capacitances on request.

2) Tighter and wider frequency tolerances on request.

3) Values for other frequencies consult factory.

STANDARD FREQUENCIES:

Frequency MHz				
8.0000	10.0000	10.1506	11.0592	12.0000
14.3181	16.0000	16.3840	20.0000	24.0000
Other frequencies between 8 MHz and 30 MHz on request				

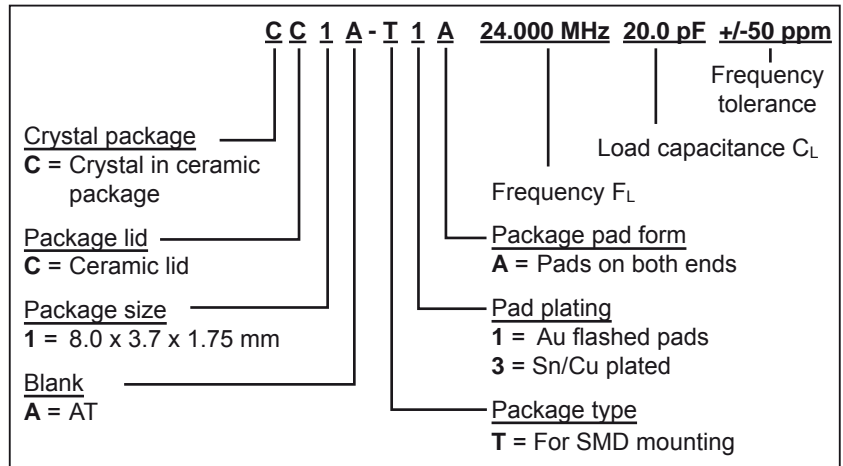
**ENVIRONMENTAL
CHARACTERISTICS:**

		Conditions	Max. Dev.
Storage temp. range		-55 to +125°C	
Industrial operating temp. range		-40 to +85°C	
Military 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 PROCES-
SING:**

Type	Termination	Processing
CC1A-T1A	For SMD mounting Au flashed pads	Reflow soldering 260°C / 20 s max.
CC1A-T3A	For SMD mounting Sn/Cu plated	Reflow soldering 260°C / 20 s max.

**PART NUMBER/
ORDERING INFORMATION EX-
AMPLE:**



All specifications subject to change without notice. 10.06



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