

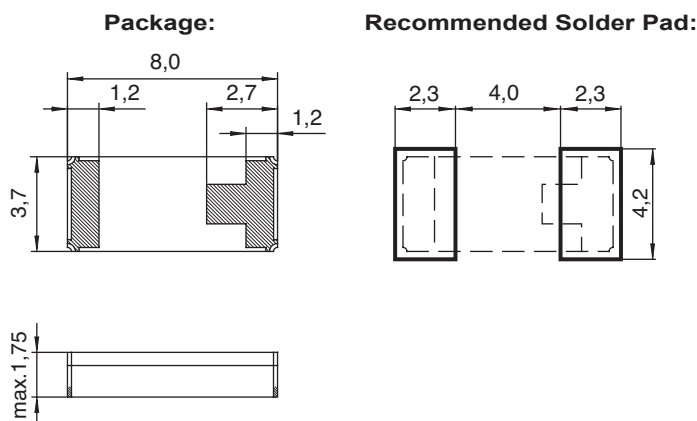
CC1A-T1AH_{up to 200°C}

AT Crystal 8 MHz – 24 MHz



100% leadfree, RoHS - compliant

DIMENSIONS



All dimensions in mm typical

Suitable for Downhole application
SMT ceramic package height 1.75 mm
Fundamental mode up to 24MHz
Extremes temperature ranges
High stability and low aging
High shock and vibration resistance
Hermetically sealed
Ultra low MSL
Excellent solderability
Swiss made quality
Customer specification on request

DESCRIPTION:

This quartz Crystal in SMD ceramic package has been specially designed with Micro Crystal photolithographic process for surface mount using infrared, vapor phase or epoxy techniques

APPLICATIONS:

- Downhole and Well drilling equipments
- Avionics
- Airborne equipments
- Geothermal equipments

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

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

- 7" with 1'000 crystals
- 10" with 2'000 crystals

ELECTRICAL CHARACTERISTICS AT 25°C:

Frequency Range	F_L	8–24	MHz
Load capacitance ¹⁾	C_L	20.0	pF
Frequency tolerance at +25°C ²⁾	$\Delta F/F$	+/-50	ppm
Frequency versus temperature ³⁾ TD: -55 to +175°C TG: -55 to +200°C	$\Delta F/F_0$	+/-150 +/-250	ppm
Drive level typ/max	P	100 / 200	μW
Insulation resistance min.	R_i	500	MΩ
Aging first year max.	$\Delta F/F$	+/-3	ppm

1) Other load capacitances on request.

2) Tighter and wider frequency tolerances on request.

3) Tighter thermal stability on request.

Frequency [MHz]	$R_s[\Omega]$ typ / max	C_1 [fF] typ / max	C_0 [pF] typ
8 to < 10	100 / 150	4 / 7	2
10 to < 12	70 / 120	5 / 8	2.2
12 to < 16	60 / 120	6 / 10	2.5
16 to < 20	50 / 100	8 / 11	2.8
20 to ≤ 24	50 / 100	9 / 13	3.2

STANDARD FREQUENCIES:

Frequency MHz						
8.0000	10.0000	10.1506	11.0592	12.0000	12.288	13.56
14.3181	14.7456	16.0000	16.3840	18.432	20.0000	24.0000
Other frequencies from 8 MHz up to 24 MHz on request						

**ENVIRONMENTAL
CHARACTERISTICS:**

	Conditions
Storage temp. range	-55 to +125°C
TD Operating temperature range	-55 to +175°C
TG Operating temperature range	-55 to +200°C
Shock resistance	10000 g, 0.3 ms, ½ sine
Vibration resistance	40 g / 10–2000 Hz

**TERMINATIONS AND
PROCESSING:**

Type	Termination	Processing
CC1A-T1AH	For SMD mounting Au plated pads	Reflow soldering +260°C / 20 s max.
Only available with TD temperature range CC1A-T3AH	For SMD mounting Sn/Ag/Cu plated	Reflow soldering +260°C / 20 s max.

**PRODUCT DESCRIPTION AND
ORDERING INFORMATION:**

CC1A–T1AH 24.0 MHz 20.0pF +/-50ppm TD QI

Frequency F_L _____

C_L Load Capacitance _____

16.0 pF
20.0 pF

Frequency tolerance _____

+/- 50 ppm
+/- 100 ppm

Temperature Range _____

TD = -55 to +175°C
TG = -55 to +200°C

Optional:
if not defined,
'Standard' will apply

Qualification _____

QI = Industrial (Standard)
QS = Custom Specification

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

20xxxx-ML01	1'000 pcs (in 16mm tape on 7" reel)
20xxxx-PL02	2'000 pcs (in 16mm tape on 13" reel)
20xxxx-DA00	xxx pcs (in foam tray)

Please contact us.

All specifications subject to change without notice.



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