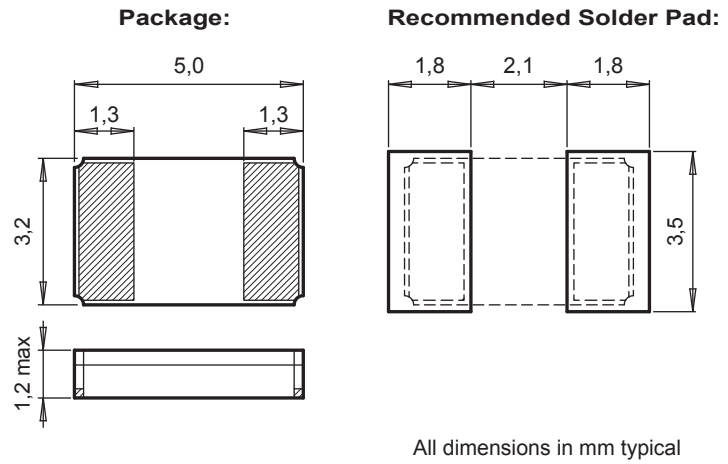


CC2A-T1A

AT-Cut Crystal 12 MHz – 70 MHz



DIMENSIONS



APPLICATIONS

Telemetry
Optical Network
Airborne Equipment
Radio Communications
Health Care and Medical

DESCRIPTION

The CC2A-T1A is a high frequency SMT Quartz Crystal Unit that incorporates an AT-cut Quartz Crystal Resonator. It operates under vacuum in a hermetically sealed ceramic package with ceramic lid.

FEATURES

Outstanding hermetic sealing with gold-tin preform.
High stability and low aging guaranteed by hermetic sealing.
Available for extended operating temperature range.
Operates in fundamental mode.
High shock and vibration resistant.
100% Pb-free, RoHS-compliant.

ELECTRICAL CHARACTERISTICS AT 25°C

Frequency Range	F_L	12 – 70	MHz
Load capacitance ¹⁾	C_L	20.0	pF
Frequency tolerance at +25°C ²⁾	$\Delta F/F$	±50	ppm
Frequency vs. temperature ³⁾ TA: -40 to +85°C TB: -40 to +125°C TC: -55 to +125°C	$\Delta F/F_0$	±50 ±80 ±100	ppm
Drive level typ./max.	P	100 / 250	μW
Insulation resistance min.	R_i	500	MΩ
Aging first year max.	$\Delta F/F$	±3	ppm

1) Other load capacitances on request; e.g. C_L : 9.0 pF.

2) Tighter frequency tolerances on request; e.g. ±20 ppm.

3) Tighter thermal stability on request; e.g. ±10 ppm from 0°C to +55°C.

Frequency	R_s typ./max.	C_1 typ./max.	C_0 typ.
12.000 MHz to 13.999 MHz	60 Ω / 100 Ω	3 fF / 5 fF	2.0 pF
14.000 MHz to 17.999 MHz	40 Ω / 80 Ω	5 fF / 8 fF	2.5 pF
18.000 MHz to 23.999 MHz	20 Ω / 60 Ω	8 fF / 10 fF	3.0 pF
24.000 MHz to 39.999 MHz	15 Ω / 50 Ω	10 fF / 12 fF	4.0 pF
40.000 MHz to 70.000 MHz	10 Ω / 40 Ω	12 fF / 14 fF	5.0 pF

STANDARD FREQUENCIES

Frequencies				
12.0000 MHz	14.7456 MHz	16.0000 MHz	16.3840 MHz	20.0000 MHz
24.0000 MHz	24.5760 MHz	25.0000 MHz	25.6000 MHz	26.0000 MHz
32.7680 MHz	40.0000 MHz			
Other frequencies on request				

ENVIRONMENTAL CHARACTERISTICS

	Conditions
Storage temp. range	-55 to +125°C
TA Operating temperature range	-40 to +85°C
TB Extended operating temp. range	-40 to +125°C
TC Extended operating temp. range	-55 to +125°C
Shock resistance	5000 g, 0.3 ms, ½ sine
Vibration resistance	20 g / 10–2000 Hz

TERMINATIONS AND PROCESSING

Type	Termination	Processing
CC2A-T1A	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s
CC2A-T3A	Sn/Ag/Cu solder dipped pads	

ORDERING INFORMATION

C C 2 A - T 1 A 20.000 MHz 20.0 pF ±50 ppm TA QI

Ceramic package ————

Ceramic lid ————

Package size ————
2 = 5.0 x 3.2 x 1.2 mm

AT-cut ————

SMT package ————

Pads ————
1 = Au flashed pads
3 = Sn/Ag/Cu solder dipped pads

Pads on both ends ————

Frequency F_L ————
20.000 MHz

Load capacitance C_L ————
20.0 pF
Other C_L on request

Frequency tolerance ————
±50 ppm
Tighter freq. tolerances on request

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

Qualification ————
QI = Industrial Grade (Standard)
QS = Custom Specification

A unique part number will be generated for each product specification, i.e:	
20xxxx-MG01	1'000 pcs (in 12 mm tape on 7" reel)
20xxxx-MG02	2'000 pcs (in 12 mm tape on 7" reel)
20xxxx-EA00	xxx pcs (in ESD plastic tray)

All specifications subject to change without notice.



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