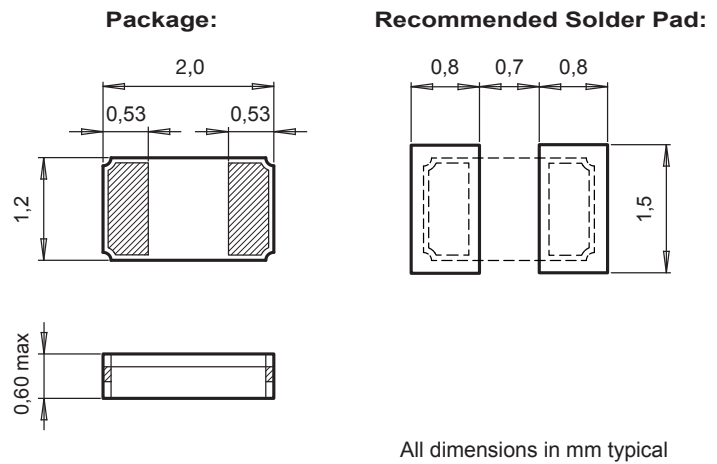


# CC8A-T1A

## AT-Cut Crystal 24 MHz – 50 MHz



### DIMENSIONS



### APPLICATIONS

Telemetry  
Optical Network  
Airborne Equipment  
Radio Communication  
Health Care and Medical

### DESCRIPTION

The CC8A-T1A is a high frequency SMD 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.  
Small size, low profile, lightweight (typ. 4.2 mg).  
Operates in fundamental mode.  
High shock and vibration resistant.  
100% Pb-free, RoHS-compliant.

### ELECTRICAL CHARACTERISTICS AT 25°C

Frequency Range	$F_L$	24 – 50	MHz
Load capacitance <sup>1)</sup>	$C_L$	3.0 / 9.0 / 16.0	pF
Frequency tolerance at +25°C <sup>2)</sup>	$\Delta F/F$	±50	ppm
Frequency vs. temperature <sup>3)</sup> 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.  $C_L$ : 20,0 pF.  
2) Tighter frequency tolerances on request; e.g. ±20 ppm.  
3) Tighter thermal stability on request.

Frequency	$R_s$ typ./max.	$C_1$ typ./max.	$C_0$ typ.
24.000 MHz to 27.999 MHz	40 Ω / 100 Ω	1.0 fF / 3.0 fF	0.7 pF
28.000 MHz to 39.999 MHz	30 Ω / 80 Ω	1.0 fF / 3.0 fF	0.7 pF
40.000 MHz to 50.000 MHz	20 Ω / 60 Ω	1.0 fF / 3.0 fF	0.7 pF

**STANDARD FREQUENCIES**

Frequencies			
24.000 MHz	26.000 MHz	32.000 MHz	48.000 MHz
Other frequencies on request			

**ENVIRONMENTAL CHARACTERISTICS**

	Conditions
Storage temperature 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
CC8A-T1A	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

**ORDERING INFORMATION**

**C C 8 A - T 1 A 24.000 MHz 9.0 pF ±50 ppm TA QI**

<p><b>Ceramic package</b> _____</p> <p><b>Ceramic lid</b> _____</p> <p><b>Package size</b> _____ 8 = 2.0 x 1.2 x 0.60 mm</p> <p><b>AT-cut</b> _____</p> <p><b>SMD package</b> _____</p> <p><b>Au flashed pads</b> _____</p> <p><b>2 pads</b> _____</p>	<p><b>Frequency <math>F_L</math></b> _____</p> <p><b>Load capacitance <math>C_L</math></b> 3.0 pF 9.0 pF 16.0 pF Other <math>C_L</math> on request</p> <p><b>Frequency tolerance</b> _____ ±50 ppm Tighter freq. tolerances on request</p> <p><b>Temperature range</b> _____ <b>TA</b> = -40 to +85°C (Standard) <b>TB</b> = -40 to +125°C <b>TC</b> = -55 to +125°C <b>TX</b> = Custom</p> <p><b>Qualification</b> _____ <b>QI</b> = Industrial Grade (Standard) <b>QM</b> = Medical Grade <b>QS</b> = Custom Specification</p>
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A unique part number will be generated for each product specification, i.e:	
20xxx-MC01	1'000 pcs (in 8 mm tape on 7" reel)
20xxx-MC03	3'000 pcs (in 8 mm tape on 7" reel)
20xxx-EA00	yyy pcs (in ESD plastic tray)

All specifications subject to change without notice.



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