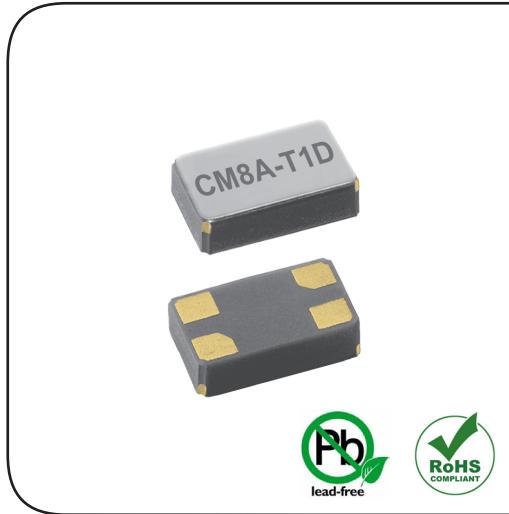
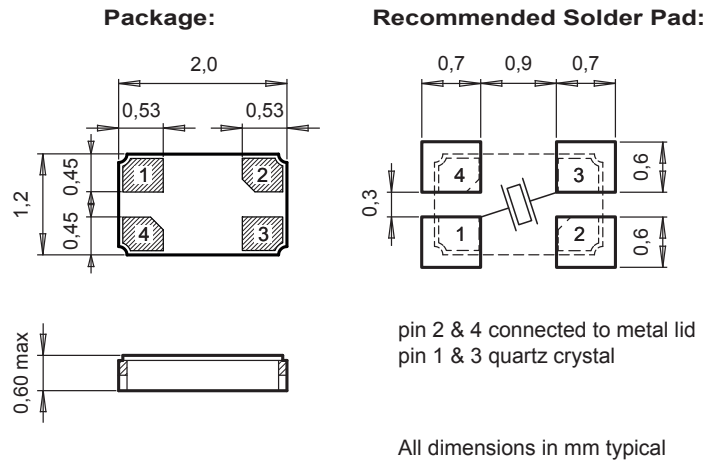


CM8A-T1D

AT-Cut Crystal 24 MHz – 50 MHz



DIMENSIONS



APPLICATIONS

Telemetry
Optical Network
Airborne Equipment
Medical Implantable
Radio Communications
Health Care and Medical

DESCRIPTION

The CM8A-T1D 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 metal 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 (4.1 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 ¹⁾	C_L	3.0 / 9.0 / 16.0	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 : 20,0 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.
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 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, 1/2 sine
Vibration resistance	20 g / 10-2000 Hz

TERMINATIONS AND PROCESSING

Type	Termination	Processing
CM8A-T1D	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s
CM8A-T5D	ENEPIG plated pads available only on request	

ORDERING INFORMATION

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

Ceramic package _____

Metal lid _____

Package size _____
8 = 2.0 x 1.2 x 0.60 mm

AT-cut _____

SMT package _____

Pads _____
1 = Au flashed pads
5 = ENEPIG plated pads

4-pads _____

Frequency F_L _____

Load capacitance C_L
3.0 pF
9.0 pF
16.0 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)
QM = Medical Grade
QS = Custom Specification

A unique part number will be generated for each product specification, i.e:	
20xxxx-MC01	1'000 pcs (in 8 mm tape on 7" reel)
20xxxx-MC03	3'000 pcs (in 8 mm tape on 7" reel)
20xxxx-EA00	xxx pcs (in ESD plastic tray)

All specifications subject to change without notice.



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