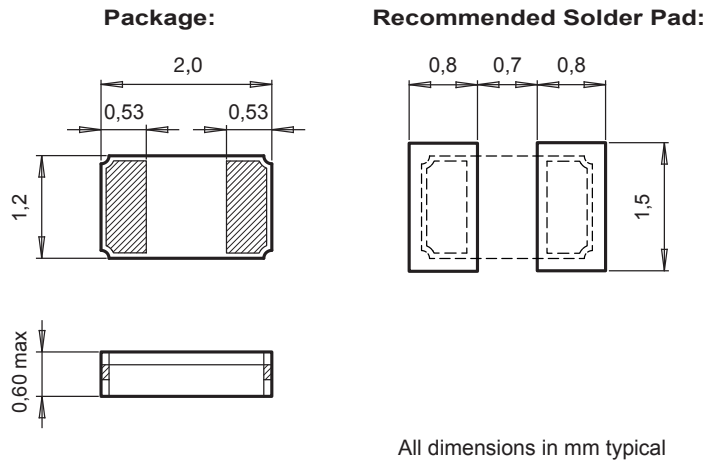


# CC8A-T1A Medical

## AT-Cut Crystal 24 MHz – 50 MHz



### DIMENSIONS



### APPLICATIONS

Pacemakers  
Defibrillators  
Neurostimulators  
Cardiac Monitoring Devices  
Implantable Drug Delivery Pumps  
Infusion Pumps  
Cochlear Implants  
Smart Orthopedic Implants

### DESCRIPTION

The CC8A-T1A Medical AT-Cut Crystal is manufactured specifically for use in implantable medical devices. Micro Crystal's long history in supplying medical grade timing devices ensures that the CC8A-T1A Medical is produced in accordance with the highest quality production technologies. Long-term reliability is of utmost importance (Class III Implantable) and a hallmark of Micro Crystal's entire medical implantable grade portfolio.

### MEDICAL IMPLANTABLE KEY FEATURES

- Safe for Helium environment: Ceramic lid with gold-tin preform-seal for best long-term hermeticity and stability
- Proprietary manufacturing and testing processes
- Long-term aging stability
- Operable temperature range: -55°C to +125°C
- Customer specific testing/screening on request
- Components and manufacturing traceability records retained
- Operates in fundamental mode
- Small size, low profile, lightweight (4.2 mg)

### ELECTRICAL CHARACTERISTICS AT 25°C

Frequency Ranges	F <sub>L</sub>	24.000 to 27.999	28.000 to 39.999	40.000 to 50.000	MHz
Load capacitance <sup>1)</sup>	C <sub>L</sub>	3.0 / 6.0 / 8.0 / 9.0			pF
Freq. tolerance at +25°C <sup>2)</sup>	ΔF/F	±30			ppm
Frequency vs. temperature <sup>3)</sup> TM: 0 to +55°C	ΔF/F <sub>0</sub>	±10			ppm
Series resistance typ./max.	R <sub>S</sub>	40 / 100	30 / 80	20 / 60	Ω
Motional capacit. typ./max.	C <sub>1</sub>	1.0 / 3.0			fF
Static capacitance typ.	C <sub>0</sub>	0.7			pF
Drive level typ./max.	P	50 / 100			μW
Insulation resistance min.	R <sub>i</sub>	500			MΩ
Aging first year max.	ΔF/F	±3			ppm

1) Other load capacitances on request.  
2) Tighter frequency tolerances on request.  
3) Tighter thermal stability on request.



**STANDARD FREQUENCIES**

Frequencies			
24.000 MHz	32.000 MHz	40.000 MHz	48.000 MHz
Other frequencies on request			

**ENVIRONMENTAL CHARACTERISTICS**

	Conditions
Storage temperature range	-55 to +125°C
Operable temperature 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
CC8A-T2A	SnPb plated pads available only on request	
CC8A-T5A	ENEPIG plated pads	

**ORDERING INFORMATION**

**C C 8 A - T 1 A 24.000 MHz 9.0 pF ±30 ppm TM QM**

<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>SMT package</b> _____</p> <p><b>Pads</b> _____ 1 = Au flashed pads 2 = SnPb plated pads on request 5 = ENEPIG plated pads</p> <p><b>Pads on both ends</b> _____</p>	<p><b>Frequency <math>F_L</math></b> _____</p> <p><b>Load capacitance <math>C_L</math></b> _____ 3.0 pF 6.0 pF 8.0 pF 9.0 pF Other <math>C_L</math> on request</p> <p><b>Frequency tolerance</b> _____ ±30 ppm Tighter freq. tolerances on request</p> <p><b>Temperature range</b> _____ <b>TM</b> = 0 to +55°C <b>TX</b> = Custom</p> <p><b>Qualification</b> _____ <b>QM</b> = Medical Grade</p>
---	--

A unique part number will be generated for each product specification, i.e:	
20xxxx-MC00	yyy pcs (in 8 mm tape on 7" reel)
20xxxx-EA00	yyy pcs (in ESD plastic tray)

All specifications subject to change without notice.



Micro Crystal AG  
Muehlestrasse 14  
CH-2540 Grenchen  
Switzerland

Phone +41 32 655 82 82  
sales@microcrystal.com  
www.microcrystal.com