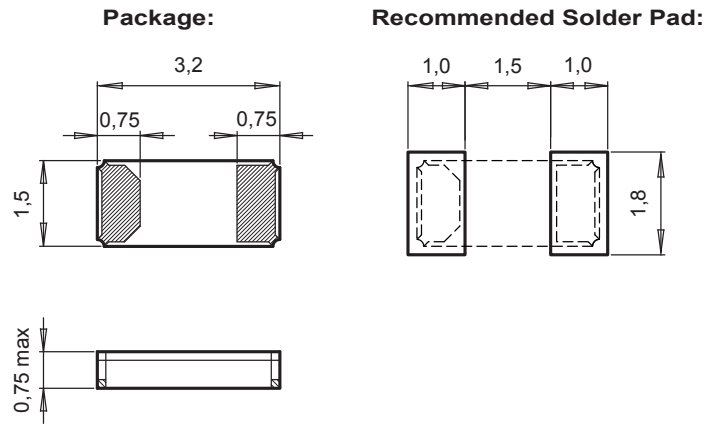


# CC7A-T1A

## AT-Cut Crystal 20 MHz – 50 MHz



### DIMENSIONS



All dimensions in mm typical

### APPLICATIONS

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

### DESCRIPTION

The CC7A-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.  
Small size, low profile, lightweight (9.2 mg).  
Operates in fundamental mode.  
High shock and vibration resistant.  
100% Pb-free, RoHS-compliant.

### ELECTRICAL CHARACTERISTICS AT 25°C

Frequency Range	$F_L$	20 – 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; e.g. ±10 ppm from 0°C to +55°C.

Frequency	$R_s$ typ./max.	$C_1$ typ./max.	$C_0$ typ.
20.000 MHz to 31.999 MHz	40 Ω / 100 Ω	2.0 fF / 3.0 fF	0.7 pF
32.000 MHz to 50.000 MHz	25 Ω / 60 Ω	2.0 fF / 3.0 fF	0.7 pF

**STANDARD FREQUENCIES**

Frequencies			
20.000 MHz	24.000 MHz	25.000 MHz	26.000 MHz
26.500 MHz	27.000 MHz	40.000 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, ½ sine
Vibration resistance	20 g / 10–2000 Hz

**TERMINATIONS AND PROCESSING**

Type	Termination	Processing
CC7A-T1A	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s
CC7A-T5A	ENEPIG plated pads available only on request	

**ORDERING INFORMATION**

**C C 7 A - T 1 A 26.000 MHz 9.0 pF ±50 ppm TA QI**

<b>Ceramic package</b>	<b>Frequency <math>F_L</math></b>
<b>Ceramic lid</b>	<b>Load capacitance <math>C_L</math></b>
<b>Package size</b> 7 = 3.2 x 1.5 x 0.75 mm	3.0 pF 9.0 pF 16.0 pF Other $C_L$ on request
<b>AT-cut</b>	<b>Frequency tolerance</b>
<b>SMT package</b>	±50 ppm Tighter freq. tolerances on request
<b>Pads</b>	<b>Temperature range</b>
1 = Au flashed pads 5 = ENEPIG plated pads	TA = -40 to +85°C (Standard) TB = -40 to +125°C TC = -55 to +125°C
<b>Pads on both ends</b>	<b>Qualification</b>
	QI = Industrial Grade (Standard) QM = Medical Grade 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-MG03	3'000 pcs (in 12 mm tape on 7" reel)
20xxxx-EA00	xxx 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  
Fax +41 32 655 82 83  
sales@microcrystal.com  
www.microcrystal.com