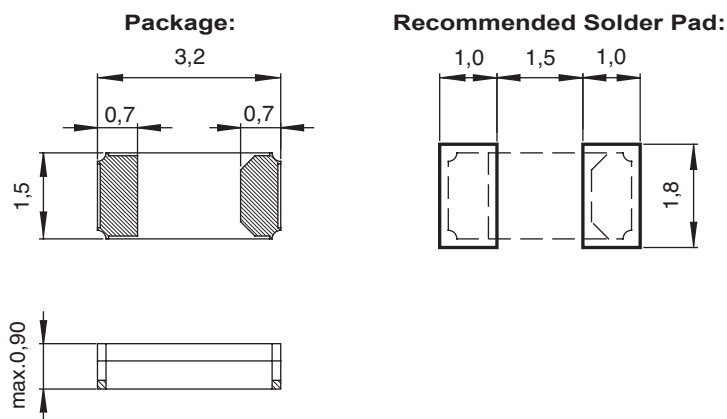


# CC7A-T1A

## AT Crystal 24 MHz – 50 MHz



### DIMENSIONS



All dimensions in mm typical

Ultra miniature suitable for implantable medical application  
SMT ceramic package package height 0.9 mm add 0.75mm on request  
Fundamental mode up to 50MHz  
Ind. and Ext. temperature ranges  
High stability and low aging  
High shock and vibration resistance  
Hermetically sealed  
Ultra low MSL  
Excellent solderability  
Swiss made quality  
Customer specification on request

### DESCRIPTION:

This quartz Crystal in SMD ceramic package has been specially designed with Micro Crystal photolithographic process for surface mount using infrared, vapor phase or epoxy techniques

### APPLICATIONS:

- Implantable medical devices (Peacemakers, Defibrillators, Pumps)
- Optical network
- Satellite communications
- Airborne equipments
- Telemetry

The crystals are supplied in trays (288 crystals per tray).  
For pick-and-place equipment, the parts are available in 12mm tapes:  
7" with 1'000 crystals  
7" with 3'000 crystals

### 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 versus temperature <sup>3)</sup> TB: -40 to +85°C TC: -55 to +125°C	$\Delta F/F_0$	+/-50 +/-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 pF

2) Tighter and wider 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 [MHz]	$R_s[\Omega]$ typ/max	$C_1$ [fF] typ/max	$C_o$ [pF] typ
24 to < 50	60 / 100	1 / 3	0.7

**STANDARD FREQUENCIES:**

Frequency MHz					
24.0000	25.0000	26.0000	26.5000	27.0000	40.0000
Other frequencies from 24 MHz up to 50 MHz on request					

**ENVIRONMENTAL  
CHARACTERISTICS:**

	Conditions
Storage temp. range	-55 to +125°C
TB Operating temperature range	-40 to +85°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	For SMD mounting Au plated pads	Reflow soldering +260°C / 20 s max.
CC7A-T3A	For SMD mounting Sn/Ag/Cu plated	Reflow soldering +260°C / 20 s max.

**PRODUCT DESCRIPTION AND  
ORDERING INFORMATION:**

**CC7A–T1A 26.0 MHz 9.0pF +/-50ppm TB QI**

Frequency F<sub>0</sub> \_\_\_\_\_

C<sub>L</sub> Load Capacitance \_\_\_\_\_

3.0 pF  
9.0 pF  
16.0 pF

Frequency tolerance \_\_\_\_\_

+/- 50 ppm  
+/- 100 ppm

Temperature Range \_\_\_\_\_

TB = -40 to +85°C (Standard)  
TC = -55 to +125°C

**Optional:**  
if not defined,  
'Standard' will apply

Qualification \_\_\_\_\_

QI = Industrial (Standard)  
QM = Medical  
QS = Custom Specification

A unique part number will be generated for each product specification, i.e:

20xxxx-MG01	1'000 pcs (in 12mm tape on 7" reel)
20xxxx-MG03	3'000 pcs (in 12mm tape on 7" reel)
20xxxx-EA00	xxx pcs (in plastic tray)

Please contact us.

All specifications subject to change without notice.



Micro Crystal AG  
Mühlestrasse 14  
CH-2540 Grenchen  
Switzerland

Tel. +41 32 655 82 82  
Fax +41 32 655 82 83  
sales@microcrystal.com  
www.microcrystal.com