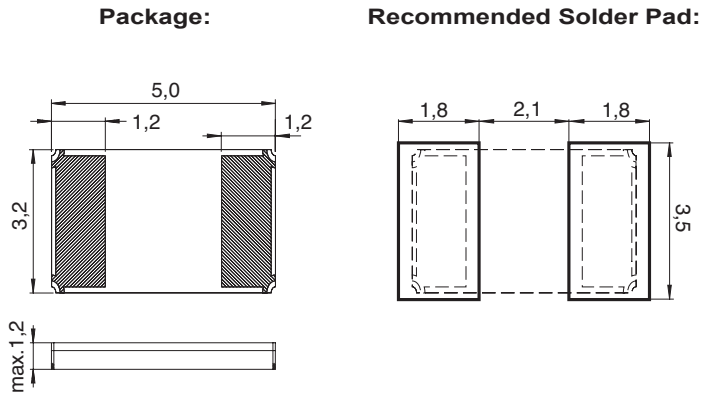




### DIMENSIONS



All dimensions in mm typical

Suitable for Downhole application  
 SMT ceramic package height 1.2 mm  
 Fundamental mode up to 40MHz  
 Extremes 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 technics

### APPLICATIONS:

- Downhole and Well drilling equipments
- Avionics
- Airborne equipments
- Geothermal equipments
- Fire fighter equipments

The crystals are supplied in trays (128 crystals per tray).

For pick-and-place equipment, the parts are available in 12mm tapes:

7" with 1'000 crystals

7" with 2'000 crystals

### ELECTRICAL CHARACTERISTICS AT 25°C:

Frequency Range	$F_L$	14–40	MHz
Load capacitance <sup>1)</sup>	$C_L$	20.0	pF
Frequency tolerance at 25°C <sup>2)</sup>	$\Delta F/F$	+/-50	ppm
Frequency versus temperature <sup>3)</sup> TD: -55 to +175°C TG: -55 to +200°C	$\Delta F/F_0$	+/-150 +/-250	ppm
Drive level typ/max	P	100 / 200	μW
Insulation resistance min.	$R_i$	500	MΩ
Aging first year max.	$\Delta F/F$	+/-3	ppm

1) Other load capacitances on request.

2) Tighter and wider frequency tolerances on request.

3) Tighter thermal stability on request.

Frequency [MHz]	$R_s[\Omega]$ typ / max	$C_1$ [fF] typ / max	$C_0$ [pF] typ
10 to < 14	100 / 150	3 / 5	2
14 to < 18	70 / 120	5 / 8	2.5
18 to < 24	50 / 100	8 / 10	3
24 to ≤ 40	40 / 80	10 / 12	4

**STANDARD FREQUENCIES:**

Frequency MHz				
14.7456	16.0000	16.3840	20.0000	24.0000
24.576	25	25.6	32.768	40.0000
Other frequencies from 14 MHz up to 40 MHz on request				

**ENVIRONMENTAL  
CHARACTERISTICS:**

	Conditions
Storage temp. range	-55 to +125°C
TD Operating temperature range	-55 to +175°C
TG Operating temperature range	-55 to +200°C
Shock resistance	10000 g, 0.3 ms, ½ sine
Vibration resistance	40 g / 10–2000 Hz

**TERMINATIONS AND  
PROCESSING:**

Type	Termination	Processing
CC2A-T1AH	For SMD mounting Au plated pads	Reflow soldering +260°C / 20 s max.
Only available with TD temperature range CC2A-T1AH	For SMD mounting Sn/Ag/Cu plated	Reflow soldering +260°C / 20 s max.

**PRODUCT DESCRIPTION AND  
ORDERING INFORMATION:**

**CC2A-T1AH 24.0 MHz 20.0pF +/-50ppm TD QI**

Frequency  $F_0$  \_\_\_\_\_

C<sub>L</sub> Load Capacitance \_\_\_\_\_  
16.0 pF  
20.0 pF

Frequency tolerance \_\_\_\_\_  
+/- 50 ppm  
+/- 100 ppm

Temperature Range \_\_\_\_\_  
TD = -55 to +175°C  
TG = -55 to +200°C

Optional:  
if not defined,  
,Standard' will apply

Qualification \_\_\_\_\_  
QI = Industrial (Standard)  
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-MG02                      2'000 pcs (in 12mm tape on 7" reel)  
 20xxxx-EA00                      xxx pcs (in ESD plastic tray)  
 Please contact us.

All specifications subject to change without notice.

