



Features

- Low in height, suitable for thin equipment
- Ceramic package and metal lid assures high reliability
- Tight tolerance and stability available



Applications

- High density applications
- Modem, communication and test equipment
- PMCIA, wireless applications
- Automotive applications

General Specifications

Frequency Range	8.000 to 160.000MHz
Mode of Oscillation	Fundamental: 8.000 to 40.000MHz Third Overtone: 40.100 to 160.000MHz
Frequency Tolerance at 25°C	±10 to ±30ppm (±30ppm standard)
Frequency Stability over Temperature Range	See Stability vs. Temperature Table
Storage Temperature	-55 to +125°C
Aging per Year	±3ppm max.
Load Capacitance C_L	10 to 32pF and Series Resonance
Shunt Capacitance C_0	7.0pF max.
Equivalent Series Resistance (ESR)	See ESR Table
Drive Level	500µW max.
Insulation Resistance (MΩ)	500 at 100Vdc ±15Vdc

Equivalent Series Resistance (ESR)

Frequency Range - MHz	Ω max.	Mode of Operation
8.000 to 12.000	80	Fundamental
12.100 to 16.000	60	
16.100 to 40.000	40	
40.100 to 160.000	70	Third Overtone

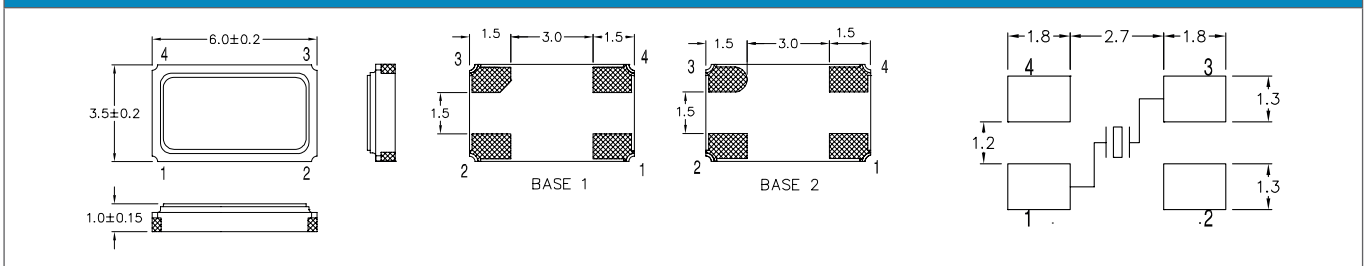
Frequency Stability vs. Temperature

Operating Temperature	±10ppm	±20ppm	±30ppm	±50ppm	±100ppm
-20 to +70°C	○	○	○	○	○
-40 to +85°C	○*	○	●	○	○
-40 to +105°C	-	-	-	○	○
-40 to +125°C	-	-	-	-	○

*Operating Temperature -30 to +85°C

● standard ○ available

Mechanical Dimensions



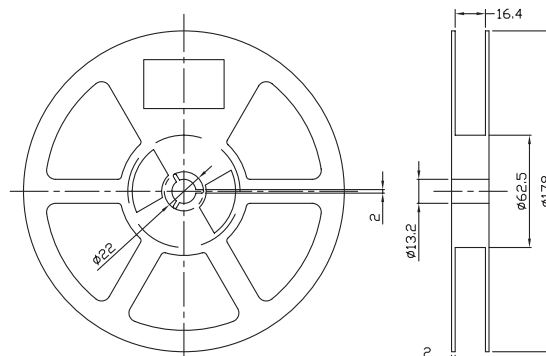
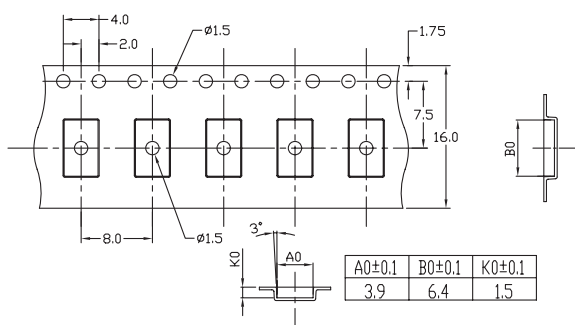
Part Numbering Guide

Quartz-technik Code	Package	Nominal Frequency (in MHz)	Vibration Mode	Load Capacitance	Frequency Tolerance	Operating Temperature Range	Frequency Stability	Automotive Indicator	Packaging
QT = Quartz-technik	C6A = 3.5x6 4-Pad SMD	7 digits including the decimal point (f.e. 12.0000)	F = AT-Fund	S = Series A = 8pF B = 12pF C = 16pF D = 18pF E = 20 pF	T1 = ±10ppm T2 = ±20ppm T3 = ±30ppm T5 = ±50ppm T0 = ±100ppm	C = -20 - +70°C I = -40 - +85°C E = -20 - +105°C A = -40 - +125°C	10 = ±10ppm 15 = ±15ppm 20 = ±20ppm 30 = ±30ppm 50 = ±50ppm 00 = ±100ppm	A = AEC-Q200	M = 250pcs Tape&Reel R = 1000pcs Tape&Reel B = Bulk

Example: QTC6A12.0000FBT3I30R

bold letters = recommended standard specification

Tape and Reel Dimensions



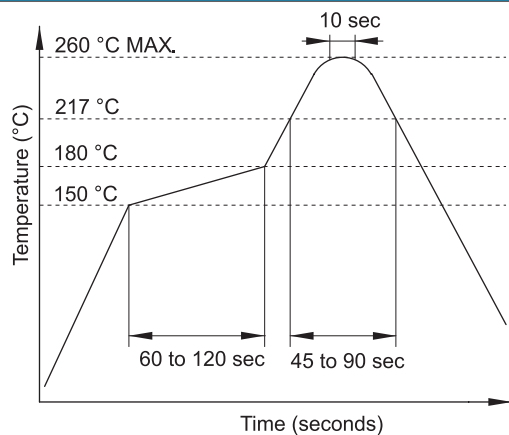
Marking Code Guide

Contains frequency, Quarztechnik manufacturing code, production code (month and year) and load capacitance.

Month Codes				Year Codes				Load Capacitance Code in pF			
January	A	July	G	2010	0	2011	1	2012	2	pF	PN Code
February	B	August	H	2013	3	2014	4	2015	5	12	A
March	C	September	I	2016	6	2017	7	2018	8	18	B
April	D	October	J	2019	9	2020	0	2021	1	8	C
May	E	November	K							10	D
June	F	December	L							16	E
										20	F
										22	G
										30	H
										32	I
										S	S

Example: First Line: 12.000 (Frequency) Second Line: QA4A (Quarztechnik - January - 2014 - 12 pF)

Solder Reflow Profile



Environmental Specifications

Mechanical Shock	MIL-STD-202, Method 213, C
Vibration	MIL-STD-202, Method 201 & 204
Thermal Cycle	MIL-STD, Method 1010, B
Gross Leak	MIL-STD-202, Method 112
Fine Leak	MIL-STD-202, Method 112