



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
- PCMCIA, 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)

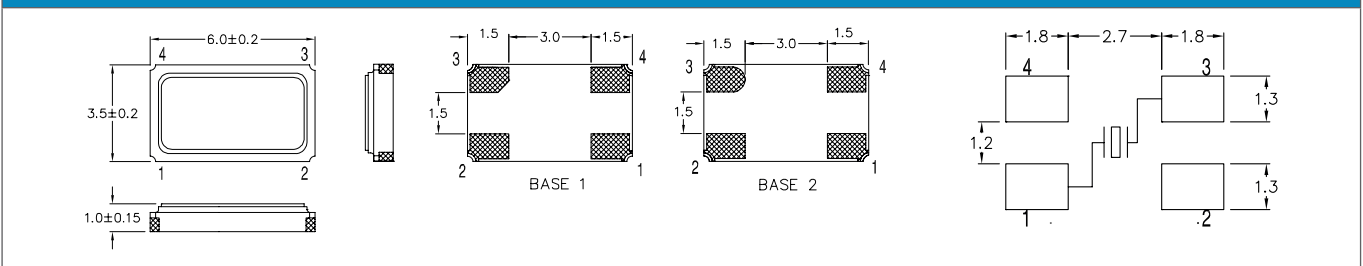
Frequency Range - MHz	Ω max.	Mode of Operation
8.000 to 12.000	80	Fundamental
12.100 to 16.000	60	
16.100 to 40.000	40	
40.100 to 160.000	70	Third Overtone

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

Quarz-technik Code	Package	Nominal Frequency (in MHz)	Vibration Mode	Load Capacitance	Frequency Tolerance	Operating Temperature Range	Frequency Stability	Automotive Indicator	Packaging
QT = Quarz-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



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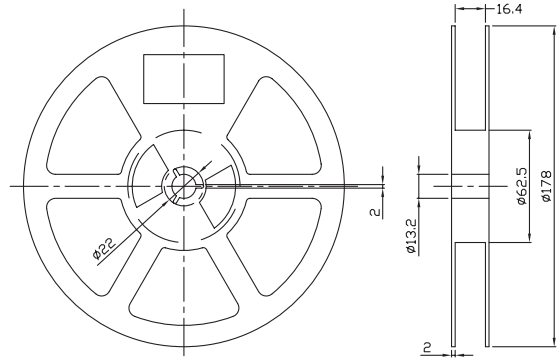
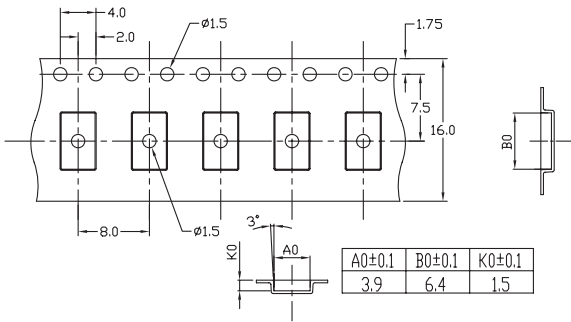
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Tape and Reel Dimensions



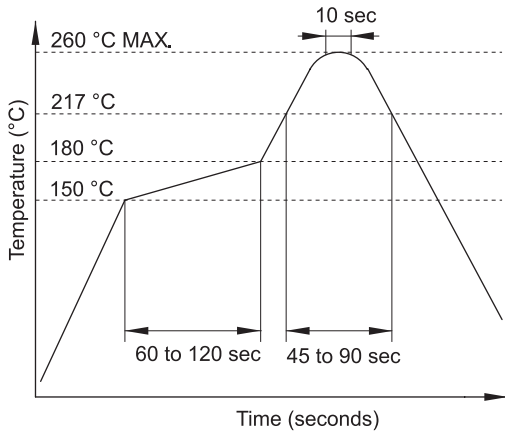
Marking Code Guide

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	pF	PN Code
February	B	August	H	2013	3	2014	4	2015	5	12	A	20	F
March	C	September	I	2016	6	2017	7	2018	8	18	B	22	G
April	D	October	J	2019	9	2020	0	2021	1	8	C	30	H
May	E	November	K							10	D	32	I
June	F	December	L							16	E	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



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