QTC6B Series

3.5x6 2-Pad SMD Quartz Crystal Unit

RoHS compliant

lead-free

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
Frenquency Tolerance at 25°C		±10ppm to ±30ppm (±30ppm standard)
Frequency Stability over Temperature Range		See Stability vs. Temperature Table
Storage Temperature		-55°C to +125°C
Aging per Year		±3PPM max.
Load Capacitance C_L		10pF to 32pF and Series Resonance
Shunt Capacitance C_1		7.0pF max.
Equivalent Series Resistance (ESR)		See ESR Table
Drive Level		500 µW max.
Insulation Resistance (M Ohm)		500 at 100Vdc ±15Vdc

Equivalent Series Resistance (ESR)

Frequency Range - MHz	Ohms 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

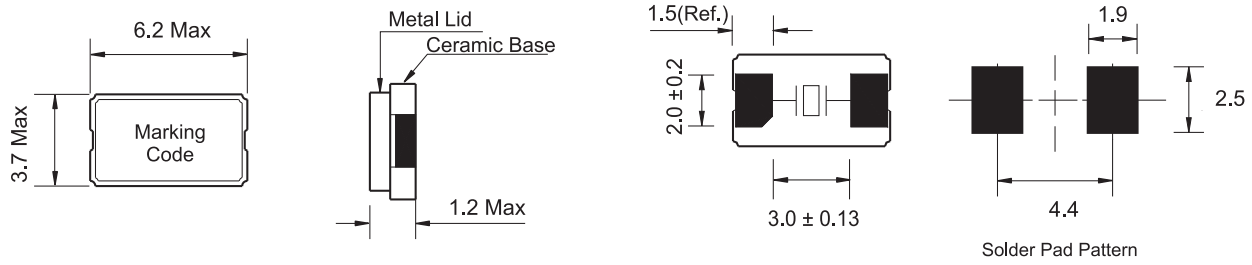
custom values available upon request

Frequency Stability vs. Temperature

Operating Temperature	±10ppm	±20ppm	±30ppm	±50ppm	±100ppm
-20°C - +70°C	○	○	○	○	○
-40°C - +85°C	○	○	●	○	○
-40°C - +105°C	-	-	-	○	○
-40°C - +125°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	C6B = 3.5x6 2-Pad SMD	7 digits including the decimal point (f.ie. 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: QTC6B12.0000FBT3I30R

bold letters = recommended standard specification

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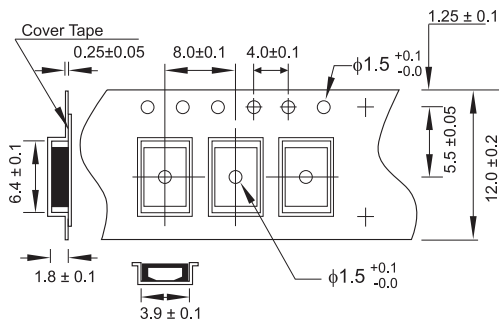
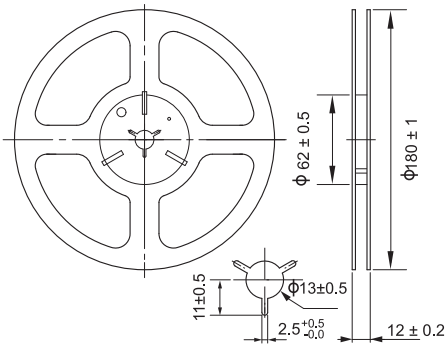
Tape and Reel Dimensions





Marking Code Guide

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

Month Codes

January	A	July	G
February	B	August	H
March	C	September	I
April	D	October	J
May	E	November	K
June	F	December	L

Year Codes

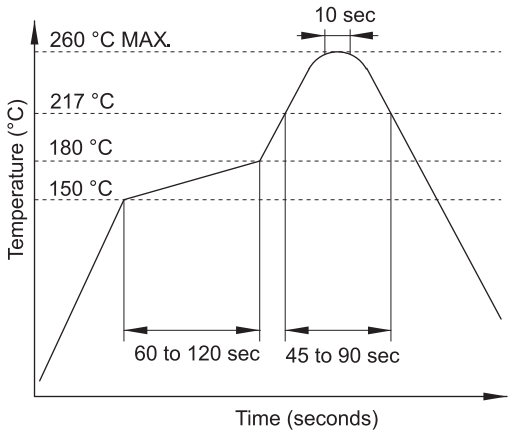
2010	0	2011	1	2012	2
2013	3	2014	4	2015	5
2016	6	2017	7	2018	8

Load Capacitance Code in pF

pF	PN Code	pF	PN Code
12	A	16	F
18	B	20	G
6	C	22	H
8	D	30	I
10	E	S	S

Example: First Line: 12.000 *(Frequency)* Second Line: QA1A *(Quarztechnik - January - 2011 - 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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