

Features

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

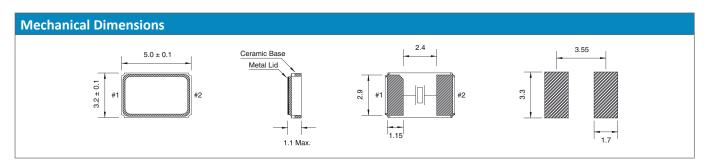
Applications

- 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 52.000MHz		
	Third Overtone	40.000 to 160.000MHz		
Frenquency Tolerance at 25°C		±10 to ±30ppm (±30ppm standard)		
Frequency Stability over Temperature Range		See Stability vs. Temperature Table		
Storage Temperature Aging per Year Load Capacitance C _L Shunt Capacitance C ₀ Equivalent Series Resistance (ESR) Drive Level Insulation Resistance (MΩ)		-55 to +125°C		
		±3ppm		
		10 to 32pF and Series Resonance		
		7.0pF max.		
		See ESR Table		
		100μW typ.		
		500 at 100Vdc ±15Vdc		

Equivalent Series Resistance (ESR)							
Frequency Range - MHz	Ω max.	Mode of Operation					
8.000 to 10.000	150	Fundamental					
10.100 to 12.000	90						
12.100 to 15.000	70						
15.100 to 30.000	50						
30.100 to 52.000	30						
40.000 to 52.000	100	Third Overtone					
52.100 to 80.000	100						
80.100 to 156.000	80						

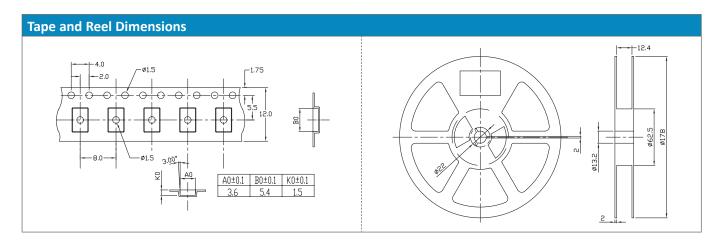
Frequency Stability vs. Temperature					
Operating Temperature	±10ppm	±20ppm	±30ppm	±50ppm	±100ppm
-20°C - +70°C	0	0	0	0	0
-40°C - +85°C	O*	0	•	0	0
-40°C - +105°C	-	-	-	0	0
-40°C - +125°C	-	-	-	-	0
*Operating Temperature -30 to +85°C • standard • o availage					standard O available



Part N	Part Numbering Guide								
Quarz- technik Code	Package	Nominal Frequency (in MHz)	Vibration Mode	Load Capa- citance	Frequency Tolerance	Operating Temperature Range	Frequency Stability	Automotive Indicator	Packaging
QT = Quarz- technik	C5B = 3.2x5 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







Marking Code Guide

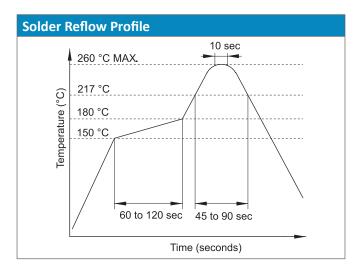
Contains frequency, Quarztechnik manufacturing code, production code (month and year) and load capacitance.

Month Codes					
January	Α	July	G		
February	В	August	Н		
March	С	September	I		
April	D	October	J		
May	Е	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
2019	9	2020	0	2021	1

Load Capacitance Code in pF					
pF	PN Code	pF	PN Code		
12	Α	20	F		
18	В	22	G		
8	С	30	Н		
10	D	32	I		
16	E	S	S		

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



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		