QTC5A Series



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 Tempe	rature 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 (ES	SR)	See ESR Table					
Drive Level		100µW max.					
Insulation Resistance (MΩ)		500 at 100Vdc ±15Vdc					

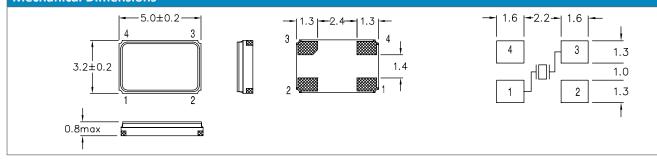
Equivalent Series Resistance (ESR)										
Frequency Range - MHz	Ω max.	Mode of Operation								
8.000 to 10.000	100	Fundamental								
10.100 to 15.000	80									
15.100 to 25.000	50									
25.100 to 30.000	40									
30.100 to 52.000	35									
40.000 to 52.000	100	Third Overtone								
52.100 to 80.000	100									
80.100 to 160.000	80									

custom values available upon request

Frequency Stability vs. Temperature

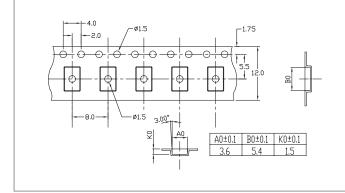
Operating Temperature	±10ppm	±20ppm	±30ppm	±50ppm	±100ppm					
-20 to +70°C	0	0	0	0	0					
-40 to +85°C	0*	0	•	0	0					
-40 to +105°C	-	-	-	0	0					
-40 to +125°C	-	-	-	-	0					
*Operating Temperature -30 to +85°C					standard O available					

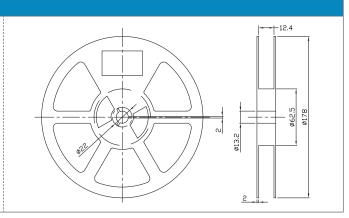
Mechanical Dimensions



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	C5A = 3.2x5 4-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&Ree B = Bulk

Tape and Reel Dimensions





Marking Code Guide

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

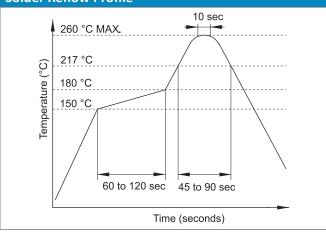
Codes				Year Codes						Load Capacitance Code in pF				
А	July	G		2010	0	2011	1	2012	2		pF	PN Code	pF	PN Code
В	August	н		2013	3	2014	4	2015	5		12	А	20	F
с	September	1		2016	6	2017	7	2018	8		18	В	22	G
D	October	J		2019	9	2020	0	2021	1		8	C	30	н
E	November	К							·		10	D	32	I.
F	December	L									16	E	S	S
	A B C	AJulyBAugustCSeptemberDOctoberENovember	AJulyGBAugustHCSeptemberIDOctoberJENovemberK	AJulyGBAugustHCSeptemberIDOctoberJENovemberK	AJulyG2010BAugustH2013CSeptemberI2016DOctoberJ2019ENovemberKK	AJulyG20100BAugustH20133CSeptemberI20166DOctoberJ20199ENovemberKAugustAugust	A July G 2010 0 2011 B August H 2013 3 2014 C September I 2016 6 2017 D October J 2019 9 2020 E November K K K K K	A July G 2010 0 2011 1 B August H 2013 3 2014 4 C September I 2016 6 2017 7 D October J 2019 9 2020 0 E November K	A July G 2010 0 2011 1 2012 B August H 2013 3 2014 4 2015 C September I 2016 6 2017 7 2018 D October J 2019 9 2020 0 2021 E November K	A July G 2010 0 2011 1 2012 2 B August H 2013 3 2014 4 2015 5 C September I 2016 6 2017 7 2018 8 D October J 2019 9 2020 0 2021 1	A July G 2010 0 2011 1 2012 2 B August H 2013 3 2014 4 2015 5 C September I 2016 6 2017 7 2018 8 D October J 2019 9 2020 0 2021 1	AJulyG201002011120122pFBAugustH20133201442015512CSeptemberI20166201772018818DOctoberJ201992020020211810ENovemberKKKKK10101010	AJulyG201002011120122pFPN CodeBAugustH20133201442015512ACSeptemberI20166201772018818BDOctoberJ201992020020211108CENovemberKKKKKK10D101010	AJulyG201002011120122pFPN CodepFBAugustH20133201442015512A20CSeptemberI20166201772018818B22DOctoberJ20199202002021110032

Gross Leak

Fine Leak

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

MIL-STD-202, Method 112

MIL-STD-202, Method 112