## **Features**

- 1.6 x 2.0 x 0.5mm ultra miniature package
- Seam sealed ceramic package with metal lid assures high precision and reliability

## **Applications**

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



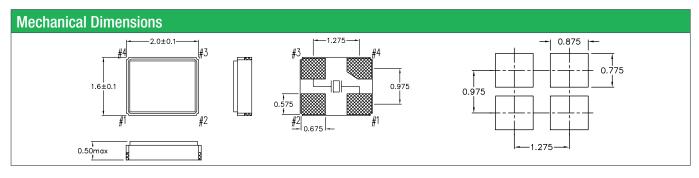




General Specifications	
Frequency Range	20.000 to 52.000MHz (Fundamental)
Frenquency Tolerance at 25°C	±10 to ±30ppm (±30ppm standard)
Frequency Stability over Temperature Range	See Stability vs. Temperature Table
Storage Temperature	-40 to +85°C
Aging per Year	±3ppm max.
Load Capacticance C <sub>L</sub>	7 to 32pF and Series Resonance
Shunt Capacticance C <sub>0</sub>	7.0pF
Equivalent Series Resistance (ESR)	See ESR Table
Drive Level	50μW max.
Insulation Resistance (M $\Omega$ )	500 at 100Vdc ±15Vdc

Equivalent Series Resistance (ESR)				
Frequency Range - MHz	$\Omega$ max.	Mode of Operation		
20.000 to 40.000	100	Fundamental		
40.100 to 52.000	60			

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 +80°C • standard • availab					standard O available

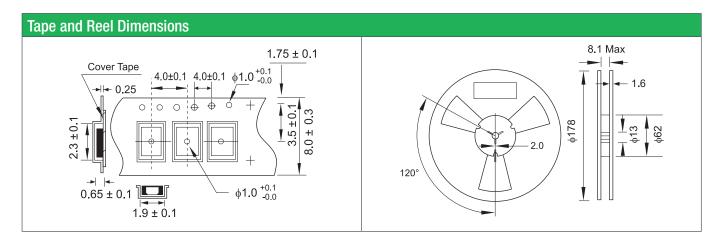


Qantek Code	Package	Nominal Frequency (in MHz)	Vibration Mode	Load Capacitance	Operating Tem- perature Range	Frequency Tolerance	Frequency Stability	Automotive Indicator	Packaging
Q = Qantek	C20 = 1.6x2.0 4-Pad SMD	7 digits including the decimal point (f.ie. 12.0000)	F = AT-Fund	S = Series 08 = 8pF 12 = 12pF 18 = 18pF 20 = 20pF etc.	A = -20 to +70°C B = -40 to +85°C C = -40 to +105°C D = -40 to +125°C	1 = ±10ppm 2 = ±20ppm <b>3 = ±30ppm</b> 5 = ±50ppm 0 = ±100ppm	1 = ±10ppm 2 = ±20ppm <b>3 = ±30ppm</b> 5 = ±50ppm 0 = ±100ppm	not available	M = 250pcs Tape&Reel R = 1000pcs Tape&Reel R3 = 3000pcs Tape&Reel









## **Marking Code Guide**

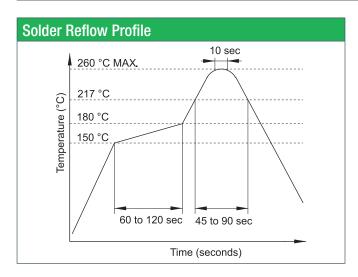
Contains frequency, Qantek manufacturing code, production code (month and year) and load capacitance.

Month Codes					
January	Α	July	G		
February	В	August	Н		
March	С	September	1		
April	D	October	J		
May	Е	November	K		
June	F	December	L		

Year Codes					
2016	6	2017	7	2018	8
2019	9	2020	0	2021	1
2022	2	2023	3	2024	4
2025	5	2026	6	2027	7

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	Е	S	S		

Example: First Line: 12.0 (Frequency) Second Line: QA5A (Qantek - January - 2015 - 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			

All specifications are subject to change without notice.



