



SAW Components
Data Sheet
CQTSF2049M99.01

Customer's Approval Certificate	
Complies with Directive 2002/95/EC (RoHS)	
Please return this Page Via email as a certification of Your approval	
Checked & Approval by:	Date:

Hangzhou Freq-control Electronics Technology Co.,Ltd.

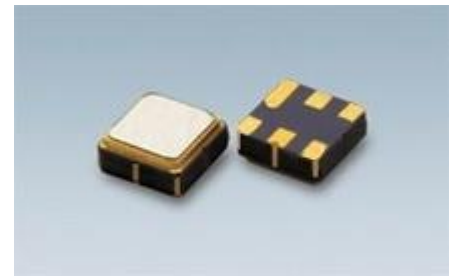
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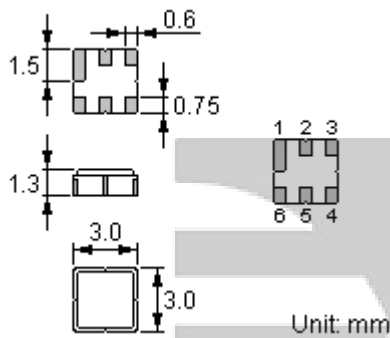
Features

- Low-loss RF filter
- High Rejection
- Single Ended Operation at 50Ω without matching
- Ceramic Package for **Surface Mounted Technology (SMT)**
- Lead-free Production and **RoHS** Compliance



1.Package Dimensions

Ceramic Package: **DCC6C**



Pin Configuration

2	Input
5	Output
1, 3, 4, 6	Case Ground
1, 3, 4, 6	To Be Grounded

2.Marking

CQTSF*
.XXXX

- (1) Laser Marking
- (2) D: Manufacture's logo
- (3) SF: SAW Filter
- (4) XXXX: Part Number
- (5) : Pin 1 Identifier
- (6) *: Lot number (The code shown below varies in a 4-year cycle)

Code	1	2	3	4	5	6	7	8	9	10	11	12
2009	A	B	C	D	E	F	G	H	J	K	L	M
2010	N	P	Q	R	S	T	U	V	W	X	Y	Z
2011	a	b	c	d	e	f	g	h	i	j	k	m
2012	n	p	q	r	s	t	u	v	w	x	y	z

3. Maximum Ratings

Rating		Value	Unit
Operating Temperature Range	T_A	-40 ~ +85	°C
Storage Temperature Range	T_{stg}	-40 ~ +85	°C
DC Voltage (between any Terminals)	V_{DC}	12	V
RF Power (in <i>BW</i>)	P	10.	dBm

Electrical Characteristics

Item		Minimum	Typical	Maximum	Unit
Center Frequency	f_c	-	2049.997	-	MHz
Maximum Insertion Loss in 2044.997MHz– 2054.997MHz	IL	-		3.5	dB
Amplitude Variation in 2044.997MHz– 2054.997MHz				1.0	dB
Absolute Attenuation	α				
0.30 ... 950.00MHz		35	38	-	dB
1969.997 MHz		33		-	dB
2129.997 MHz		33		-	dB
2500.00 ... 3000.00 MHz		30	35	--	dB
Input VSWR in 2044.997MHz– 2054.997MHz		-		2.0:1	
Output VSWR in 2044.997MHz– 2054.997MHz		-		2.0:1	
Group delay ripple 2044.997MHz– 2054.997MHz			20	50	ns
Source / Load Impedance (single ended)			50		Ω

 **RoHS Compliant**

 **Electrostatic Sensitive Device**

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4. Typical Frequency Response

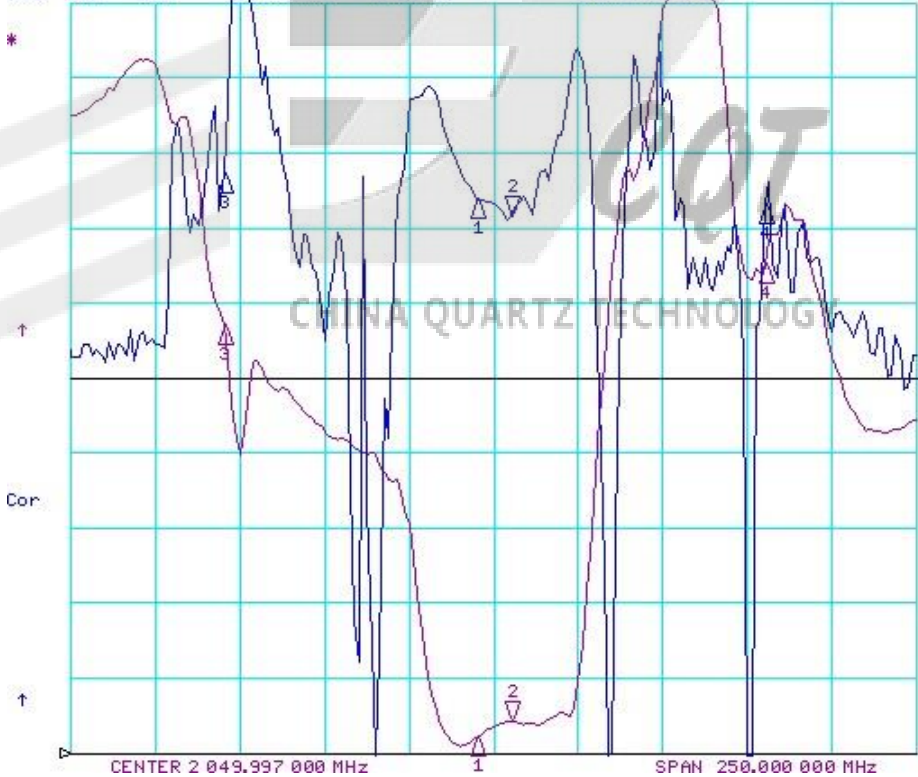
8 Oct 2011 11:39:25

CH1 S21 L06 1 dB/REF -4.025 dB 2:-3.3225 dB
 CH2 S21 L06 10 dB/REF -32.62 dB 2:-3.3225 dB 2 054.997 000 MHz



CENTER 2 049.997 000 MHz SPAN 250.000 000 MHz
 8 Oct 2011 11:39:50

CH1 S11 SWR 1 / REF 1 2: 1.4338 2 054.997 000 MHz
 CH2 S21 DEL 10 ns/REF -4.01 ns 2: 17.465 ns



CENTER 2 049.997 000 MHz SPAN 250.000 000 MHz



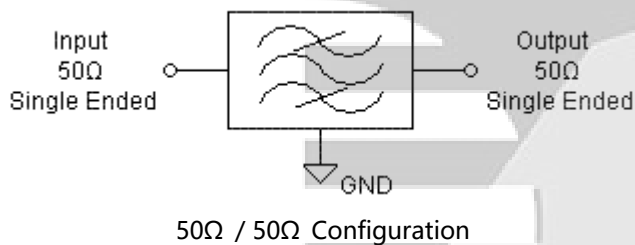
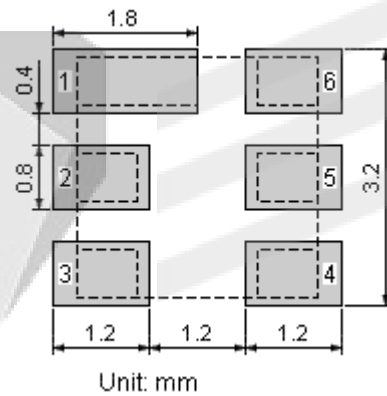
5. Stability Characteristics

	Test item	Condition of test
1	Mechanical shock	(a) Drops: 3 times on concrete floor (b) Height: 1.0 m
2	Vibration resistance	(a) Frequency of vibration: 10~55Hz (b) Amplitude: 1.5 mm (c) Directions: X,Y and Z (d) Duration: 2 hours
3	Moisture resistance	(a) Condition: 40°C, 90~95% R.H. (b) Duration: 96 hours (c) Wait 4 hours before measurement
4	Climatic sequence	(a) +70°C for 16 hours (b) +55°C for 24 hours, 90~95% R.H. (c) -25°C for 2 hours (d) +40°C for 24 hours, 90~95% R.H. (e) Wait 4 hours before measurement
5	High temperature exposure	(a) Temperature: 70°C (b) Duration: 250 hours (c) Wait 4 hours before measurement
6	Thermal impact	(a) +70°C for 30 minutes ⇒ -25°C for 30 minutes repeated 3 times (b) Wait 4 hours before measurement

Requirements: The SAW filter shall remain within the electrical specifications after tests.

Remarks

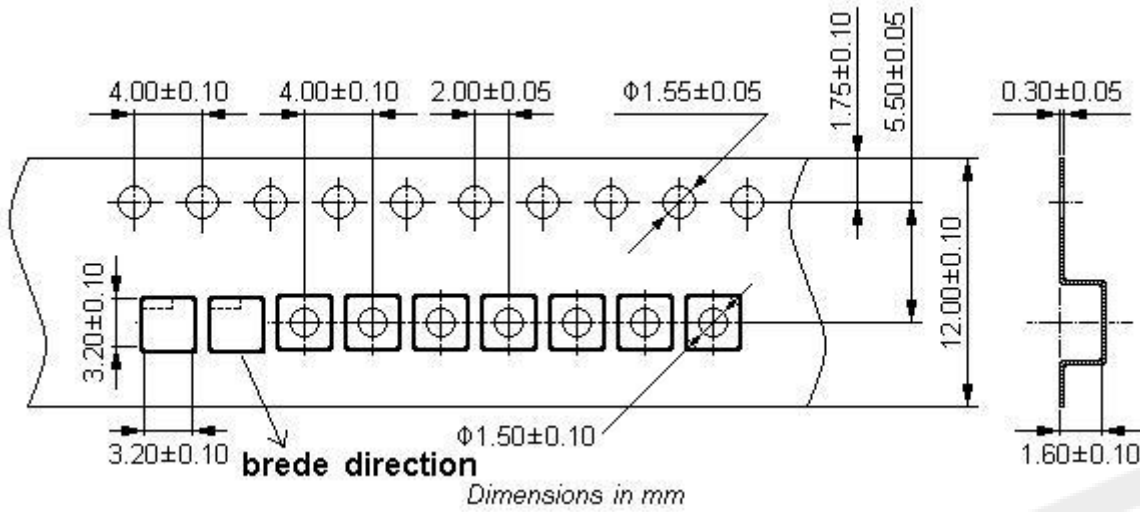
- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
- Be certain not to apply voltage exceeding the rated voltage of components.
- Do not operate outside the recommended operating temperature range of components.
- Sudden change of temperature shall be avoided, deterioration of the characteristics can occur.
- Be careful of soldering temperature and duration of components when soldering.
- Do not place soldering iron on the body of components.
- Be careful not to subject the terminals or leads of components to excessive force.
- SAW devices are electrostatic sensitive. Please avoid static voltage during operation and storage.
- Ultrasonic cleaning shall be avoided. Ultrasonic vibration may cause destruction of components.

6.Test Circuit**Recommended Land Pattern**

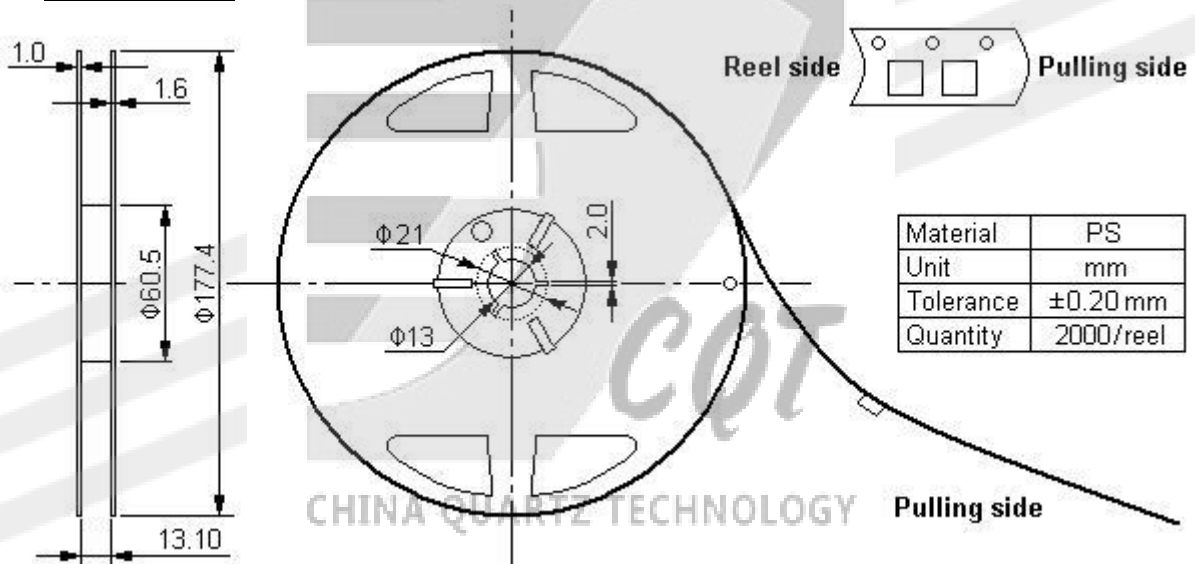
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7.Packing Information

Carrier Tape



Reel Dimensions



Material	PS
Unit	mm
Tolerance	±0.20 mm
Quantity	2000/reel

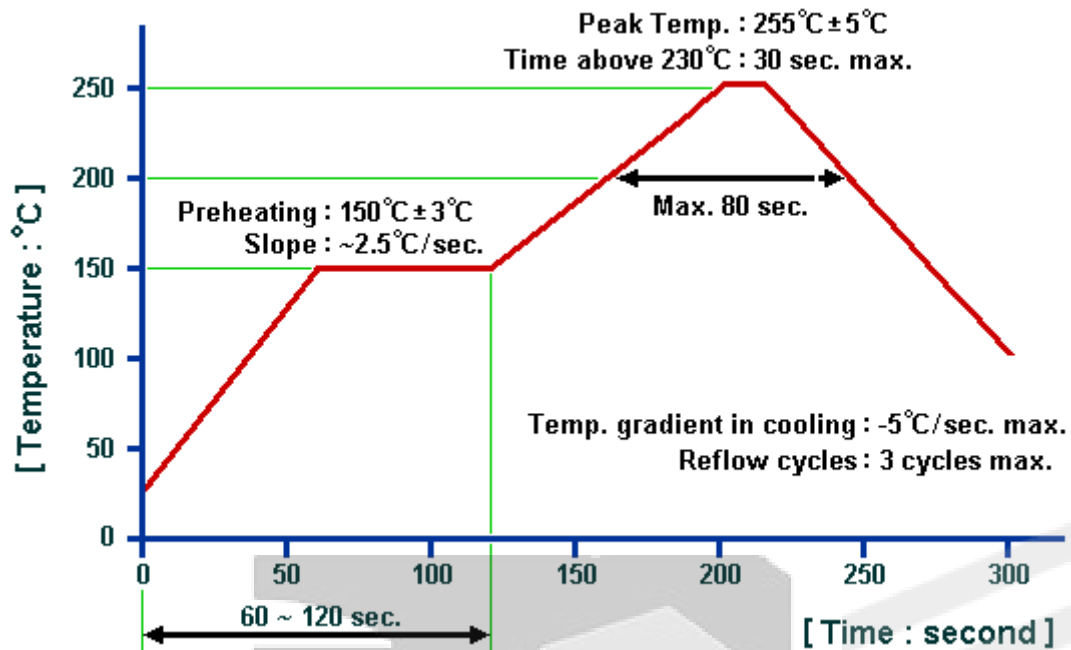
Outer Packing

Type	Quantity	Dimension	Description	Weight
Carton Box I	10000	190×190×95	anti-static plastic bag & carton box	0.85
Carton Box II	20000	190×190×190	1 reel / bag 5 bags / box (10000 pcs) 10 bags / box (20000 pcs)	1.70

Unit: mm

Unit: kg

Recommended Soldering Profile



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1. The specifications of this device are subject to change or obsolescence without notice.
2. Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
3. Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.
4. For questions on technology, prices and delivery, please contact our sales offices or e-mail sales@cqtgroup.com.