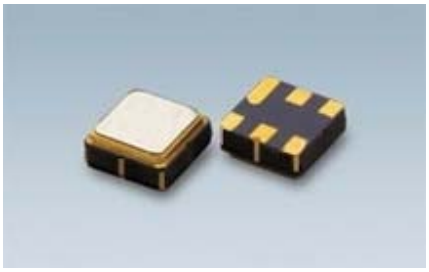
SAW Resonator NDR4107

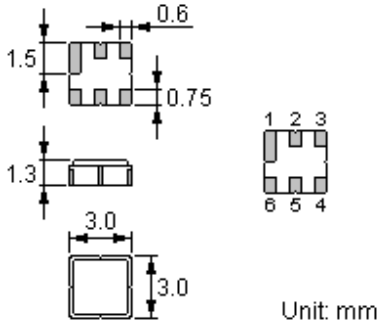
Features

- A true one-port, surface-acoustic-wave (**SAW**) resonator
- In a surface-mount ceramic **DCC6C** case
- Provides reliable, fundamental-mode, quartz frequency stabilization i.e in transmitters or local oscillators operating at **433.920** MHz



Package Dimensions

Ceramic Package: **DCC6C**



Pin Configuration

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

Marking

Top View, Laser Marking

"**ND**": Manufacturer's mark "**R**": SAW resonator

"**4107**": Part number

"＊": 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

Maximum Ratings

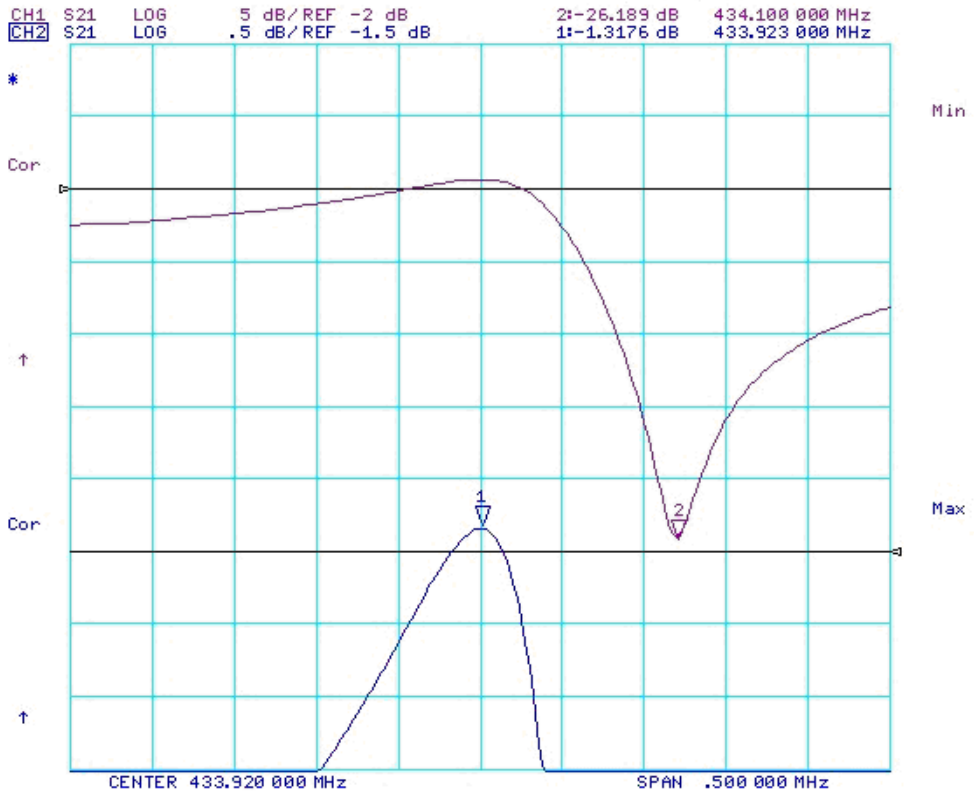
Rating		Value	Unit
Operating Temperature Range	T_A	-40 ~ +125	°C
Storage Temperature Range	T_{stg}	-50 ~ +125	°C
DC Voltage (between any Terminals)	V_{DC}	12	V
RF Power (in *BW*)	*P*	30 max.	dBm
ESD Voltage (HB)	V_{ESD}	150	V

Electrical Characteristics

Characteristic		Sym	Minimum	Typical	Maximum	Unit
Center Frequency (+25℃)	Absolute Frequency	f_C	433.870		433.970	MHz
	Tolerance from 433.920 MHz	Δf_C		±50		kHz
Insertion Loss		IL		1.3	1.8	dB
Quality Factor	Unloaded Q	Q_U		12230		
	50 Ω Loaded Q	Q_L		1700		
Temperature Stability	Turnover Temperature	T_0	10		30	℃
	Turnover Frequency	f_0		f_C		kHz
	Frequency Temperature Coefficient	FTC		0.032		ppm/℃^{2}
Frequency Aging	Absolute Value during the First Year	$\|f_A\|$		≤10		ppm/yr
DC Insulation Resistance Between Any Two Terminals			1.0			MΩ
RF Equivalent RLC Model	Motional Resistance	R_M		16	23	Ω
	Motional Inductance	L_M		72.457		μH
	Motional Capacitance	C_M		1.859		fF
	Shunt Static Capacitance	C_0	1.7	2.1	2.5	pF

RoHS Compliant **Electrostatic Sensitive Device**

Typical Frequency Response



Stability Characteristics

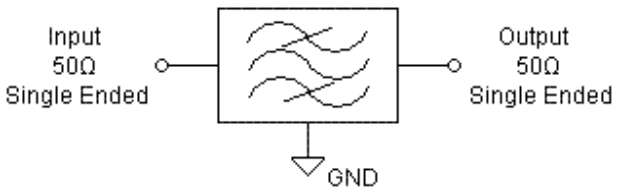
	Test item	Condition of test
1	Mechanical shock	(a) Drops: 3 times on concrete floor (b) Height: 1.0 m
2	Vibration resistance	(a) Frequency of vibration: 10~55Hz (b) Amplitude: 1.5 mm (c) Directions: X,Y and Z (d) Duration: 2 hours
3	Moisture resistance	(a) Condition: 40°C, 90~95% R.H. (b) Duration: 96 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 filer shall remain within the electrical specifications after tests.

Remarks

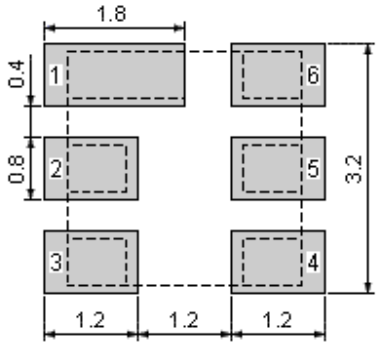
- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
- Be certain not to apply voltage exceeding the rated voltage of components.
- Do not operate outside the recommended operating temperature range of components.
- Sudden change of temperature shall be avoided, 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.

Test Circuit



50Ω / 50Ω Configuration

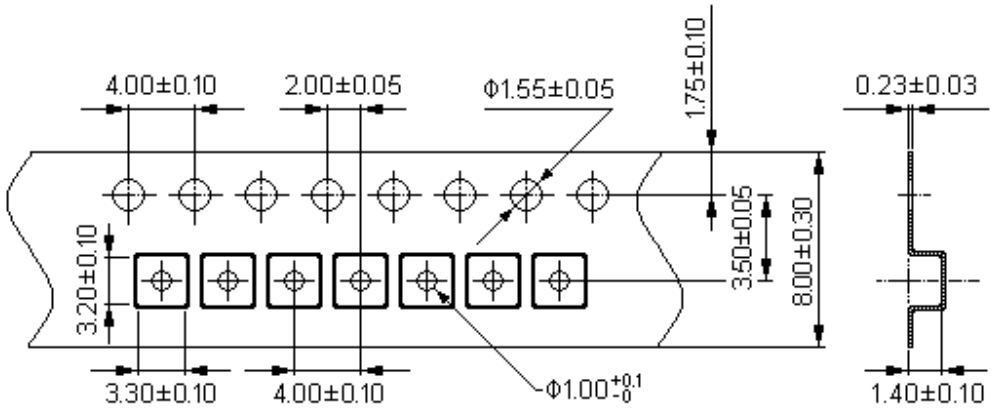
Recommended Land Pattern



Unit: mm

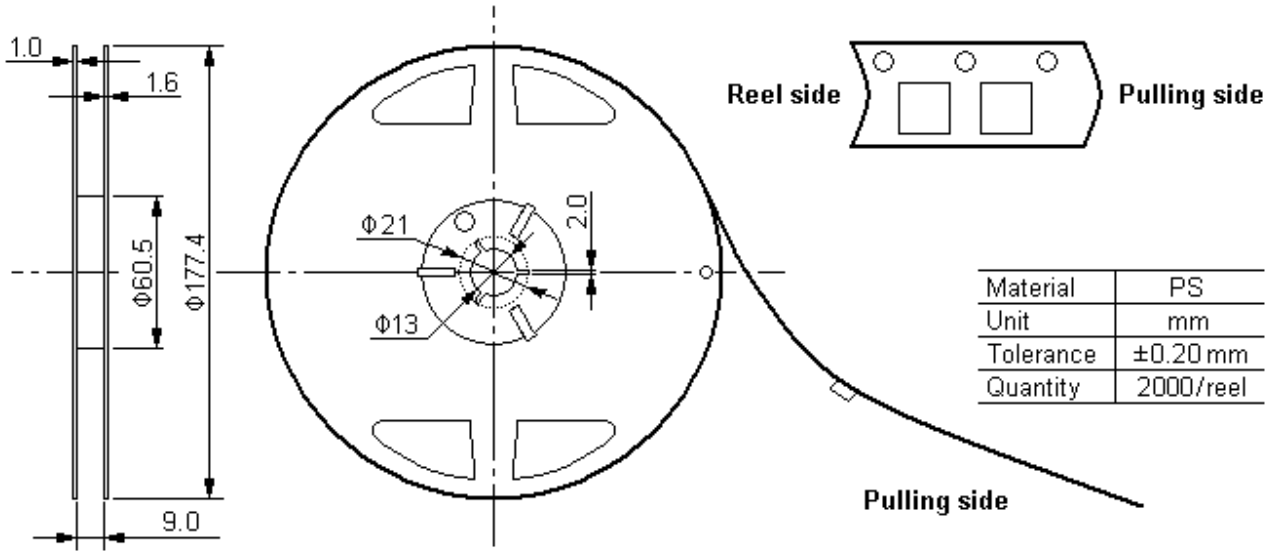
Packing Information

Carrier Tape



Dimensions in mm

Reel Dimensions



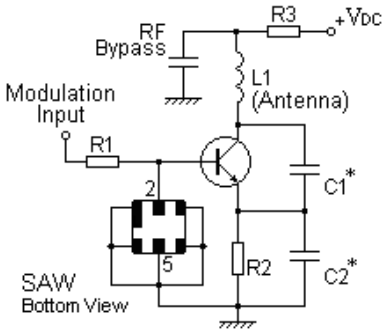
Material	PS
Unit	mm
Tolerance	±0.20 mm
Quantity	2000/reel

Outer Packing

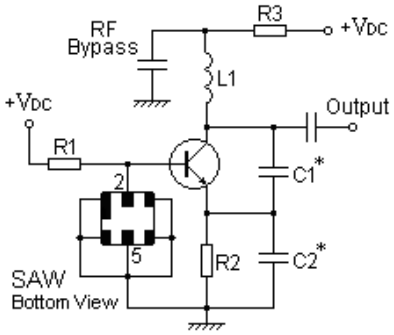
Type	Quantity	Dimension	Description	Weight
Carton Box Ⅰ	10000	190×190×95	anti-static plastic bag & carton box 1 reel / bag 5 bags / box (10000 pcs) 10 bags / box (20000 pcs)	0.85
Carton Box Ⅱ	20000	190×190×190		1.70
		Unit: mm		Unit: kg

Typical Application Circuits

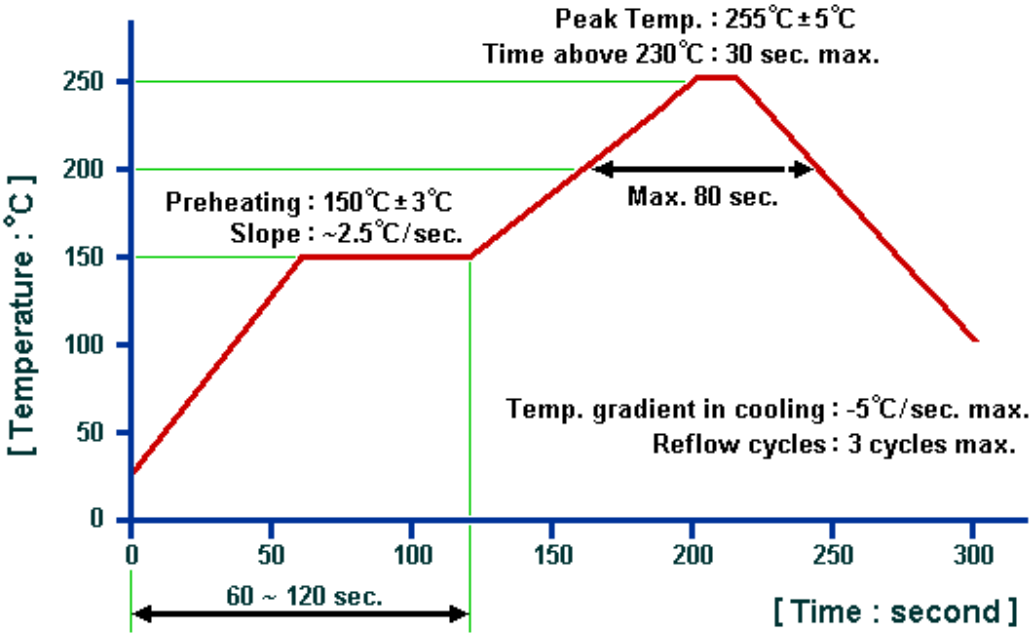
1) Low-Power Transmitter Application



2) Local Oscillator Application



Recommended Soldering Profile



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 winnsky@winnsky.com