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# APPROVAL SHEET

Approval Specification	Customer's Approval Certificate
<b>TO:</b>	Please return this copy as a certification of your approval
<b>Part No.:</b>	<b>Checked &amp; Approved by:</b>
<b>Customer's Part No.:</b>	<b>Date:</b>

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Part No.	:	SFR433D
Pages	:	6
Date	:	2013/3/14
Revision	:	1.0

<b>Prepared by:</b>	
<b>Checked by:</b>	
<b>Approved by:</b>	

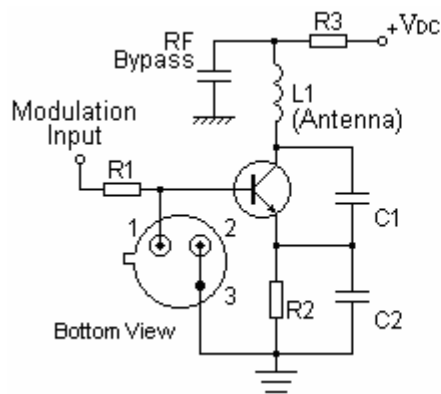
**Features**

- 1-port Resonator
- Metal Case for **TO-39**
- **RoHS** compatible
- Package Code TO-39
- **Electrostatic Sensitive Device(ESD)**

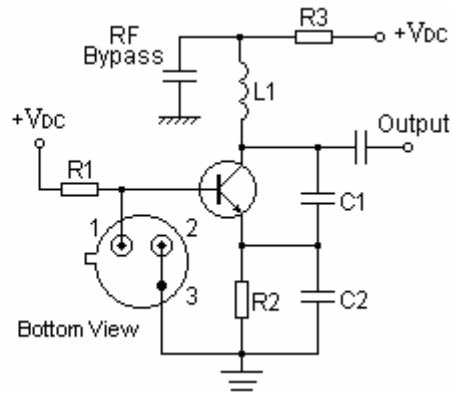


**Application**

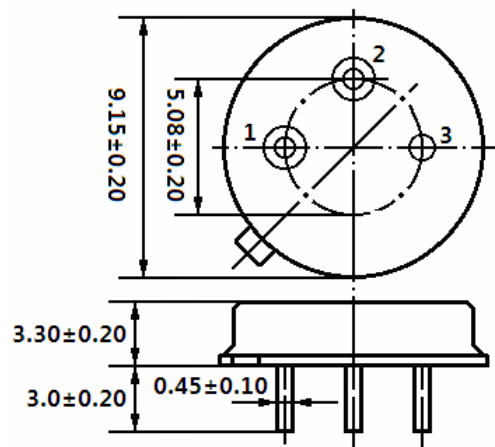
Typical Low-Power Transmitter Application



Typical Local Oscillator Application



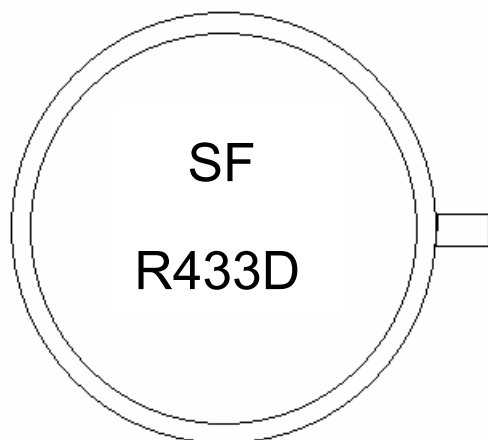
**Package Dimensions (TO-39)**



**Pin Configuration**

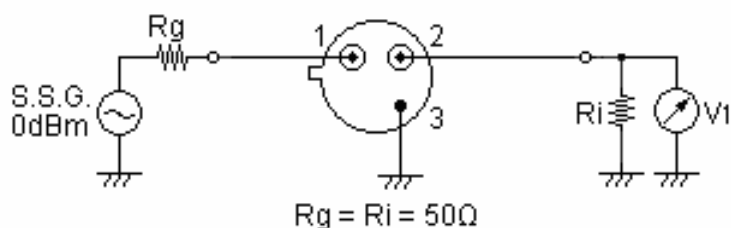
<b>1</b>	Input/ Output
<b>2</b>	Output/ Input
<b>3</b>	Ground

Marking

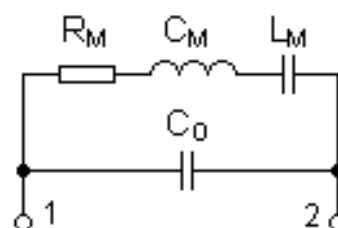


SF	Trademark
R	SAW Resonator
433D	Part number

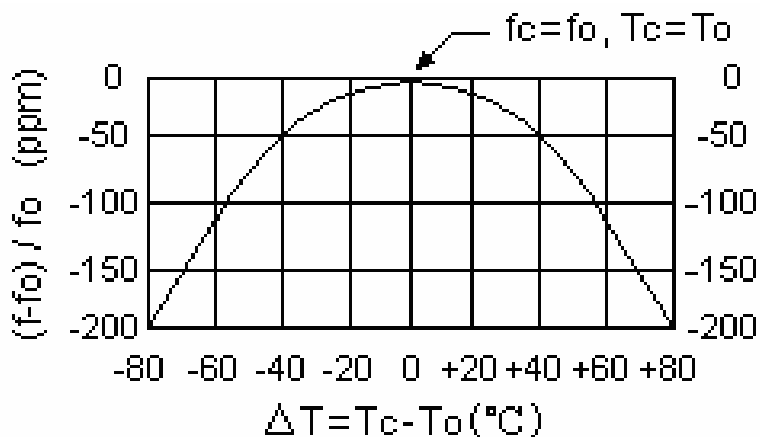
Test Circuit



Equivalent LC Model



Temperature Characteristics



The curve shown above accounts for resonator contribution only and does not include LC component temperature contributions.

**Performance****Maximum Rating**

Item		Value	Unit
DC Voltage	$V_{DC}$	$\pm 30$	V
Operation Temperature	T	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-55 ~ +125	°C
RF Power Dissipation	P	10	dBm

**Electronic Characteristics**

Test Temperature:  $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$

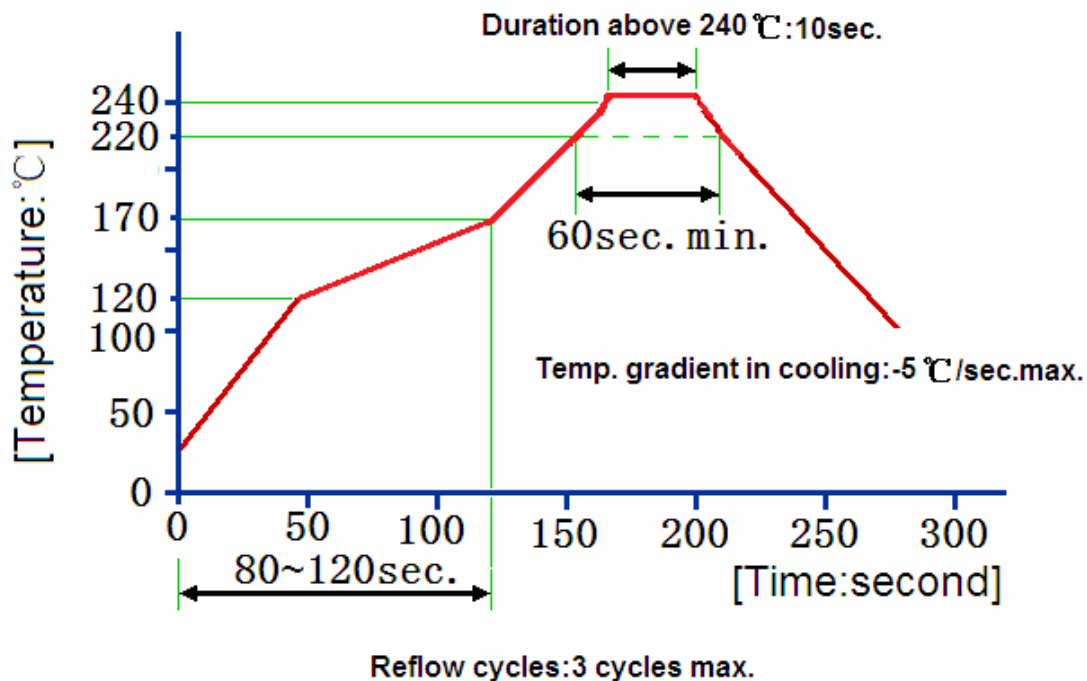
Terminating source impedance:  $50\Omega$

Terminating load impedance:  $50\Omega$

Item			Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	$f_c$		433.92		MHz
	Tolerance from 433.92MHz	$\Delta f_c$		$\pm 75$		KHz
Insertion Loss(min)		IL		1.9	2.2	dB
Quality Factor	Unloaded Q	$Q_U$		13173		
	$50\Omega$ Loaded Q	$Q_L$		2167		
Temperature Stability	Turnover Temperature	$T_0$	25	40	55	°C
	Frequency Temperature Coefficient	FTC		0.032		ppm/°C
Frequency Aging	Absolute Value during the First Year	$ f_A $		$\leq 10$		ppm/yr
DC Insulation Resistance between Any Two Pins			1.0			MΩ
RF Equivalent RLC Model	Motional Resistance	$R_M$		20	29	Ω
	Motional Inductance	$L_M$		95.2		μH
	Motional Capacitance	$C_M$		1.42		fF
	Static Capacitance	$C_0$	1.75	2.05	2.35	pF



## Recommended Reflow Soldering Diagram



## Notes

1. As a result of the particularity of inner structure of SAW products, it is easy to be broken down by electrostatic, so we should pay attention to **ESD protect** in the test.
2. **Static voltage** between signal load and ground may cause deterioration and destruction of the component. Please avoid static voltage.
3. **Ultrasonic cleaning** may cause deterioration and destruction of the component. Please avoid ultrasonic cleaning.
4. Only leads of component may **be soldered**. Please avoid soldering another part of component.
5. There is a close relationship between the device's performance and **matching network**. The specifications of this device are based on the test circuit shown above. L and C values may change depending on board layout. Values shown are intended as a guide only.