

# APPROVAL SHEET

Approval Specification	Customer's Approval Certificate
то:	Checked & Approved by:
Part No.:	Date:
Customer's Part No.:	Please return this copy as a certification of your approval

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:	SFR310D
:	4
:	2016/8/1
:	2.0
	:

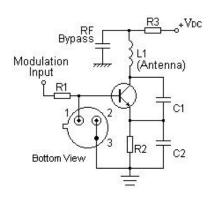
#### **Features**

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

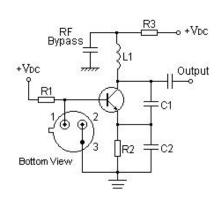


## **Application**

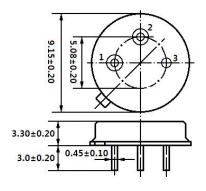
Typical Low-Power Transmitter Application



### Typical Local Oscillator Application



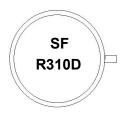
## **Package Dimensions (TO-39)**



#### **Pin Configuration**

1	Input/ Output		
2	Output/ Input		
3	Case Ground		

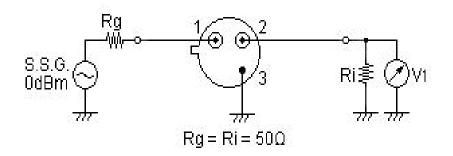
## Marking

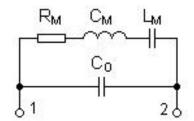


SF Trademark	
R	SAW Resonator
310D	Part number

#### **Test Circuit**

## **Equivalent LC Model**





## **Performance**

#### **Maximum Rating**

ltem		1	Unit
DC Voltage	V <sub>DC</sub>	±30	V
Operation Temperature	Т	-40 ~ +85	$^{\circ}$
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	$^{\circ}$
RF Power Dissipation	Р	25	dBm

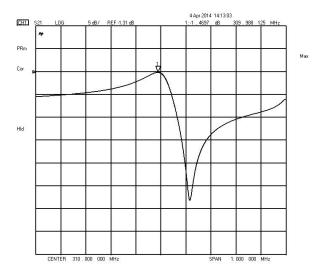
#### **Electronic Characteristics**

Test Temperature: 25℃±2℃

Terminating source impedance:  $50\Omega$ Terminating load impedance:  $50\Omega$ 

	ltem:		Minimum	Typical	Maximum	Unit
Center	Absolute Frequency	fc		310.00		MHz
Frequency	Tolerance from 310.00MHz	$\triangle f_c$		±75		KHz
Insertion Loss(n	ertion Loss(min) IL 1.5		2.0	dB		
Quality Factor	Unloaded Q	Qυ		12310		
Quality Factor	50Ω Loaded Q	$Q_L$		1405		
Frequency Aging Absolute Value during the First Year		f <sub>A</sub>		≤10		ppm/yr
DC Insulation Resistance between Any Two Pins			1.0			МΩ
	Motional Resistance	R <sub>M</sub>		14.5	18.0	Ω
RF Equivalent RLC Model	Motional Inductance	L <sub>M</sub>		81.2		μH
	Motional Capacitance	См		3.2		fF
	Static Capacitance	C <sub>0</sub>	4.2	4.5	4.8	pF

## **Frequency Response**



## Reliability (The SAW components shall remain electrical performance after tests)

No.	Test item	Test condition		
1	Temperature Storage	(1) Temperature: 85℃±2℃, Duration: 250h, Recovery time: 2h±0.5h (2) Temperature: -40℃±3℃, Duration: 250h, Recovery time: 2h±0.5h		
2	Humidity Test	Conditions: 60℃±2℃ , 90~95% RH		
3	Thermal Shock	Heat cycle conditions: TA=-40°C±3°C, TB=85°C±2°C, t1=t2=30min, Switch time: ≤3min, Cycle time: 100 times, Recovery time: 2h±0.5h.		
4	Vibration Fatigue	Frequency of vibration: 10~55Hz Amplitude:1.5mm  Directions: X,Y and Z Duration: 2h		
5	Drop Test	Cycle time: 10 times Height: 1.0m		
6	Solder Ability Test	Temperature: 245°C±5°C Duration: 3.0s5.0s  Depth: DIP2/3 , SMD1/5		
7	Resistance to Soldering Heat	(1)Thickness of PCB:1mm , Solder condition: 260 ℃±5 ℃ , Duration: 10±1s (2)Temperature of Soldering Iron: 350 ℃±10 ℃ , Duration: 3~4s , Recovery time : 2 ± 0.5h		

#### Notes

- 1. As a result of the particularity of inner structure of SAW products, it easy to be breakdown 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.

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