

# 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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:	SFR390D
:	4
:	2016/8/1
:	2.0
	: :

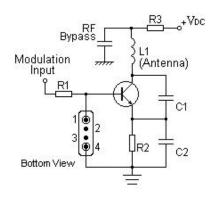
#### **Features**

- 1-port Resonator
- Metal Case for SC04-06
- RoHS compatible
- Package Code SC04-06
- Electrostatic Sensitive Device(ESD)

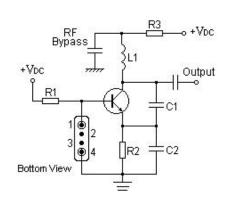


## **Application**

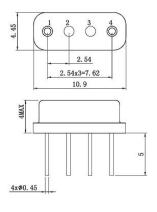
Typical Low-Power Transmitter Application



#### Typical Local Oscillator Application



## **Package Dimensions (SC04-06)**



### **Pin Configuration**

1	Input/ Output		
4	Output/ Input		
2,3	Case Ground		

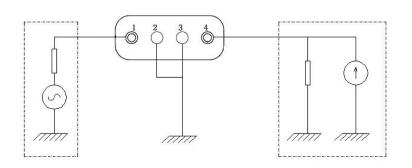
## Marking

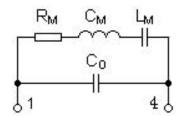


SF	Trademark	
R	SAW Resonator	
390D	Part number	

## **Test Circuit**

## **Equivalent LC Model**





#### **Performance**

## **Maximum Rating**

Item		Value	Unit
DC Voltage	$V_{DC}$	±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**

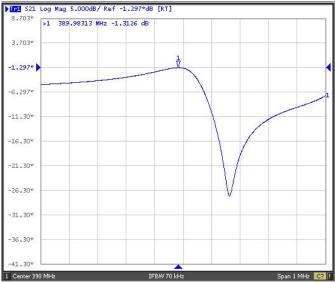
Test Temperature: 25℃±2℃

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

	ltem		Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	fc		390.00		MHz
	Tolerance from 390.00MHz	△fc		±75		KHz
Insertion Loss(r	nin)	IL		1.4	2.0	dB
Quality Factor	Unloaded Q	Qυ		18086		
Quality Factor	50Ω Loaded Q	QL		1808		
Frequency Aging	Absolute Value during the First Year	f <sub>A</sub>		≤10		ppm/yr
DC Insulation R	esistance between Any Two Pins		1.0			МΩ
RF Equivalent RLC Model	Motional Resistance	R <sub>M</sub>		11.2	18.3	Ω
	Motional Inductance	L <sub>M</sub>		82.07		μH
	Motional Capacitance	См		2.03		fF
	Static Capacitance	C <sub>0</sub>	3.0	3.2	3.4	pF

Please read notes at the end of this document. -3-

### **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: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , Duration: $10\pm1\text{s}$ (2)Temperature of Soldering Iron: $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$ , Duration: $3\sim4\text{s}$ , Recovery time : $2\pm0.5\text{h}$

#### 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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