KT 深圳华远微电科技有限公司 SHENZHEN HUAYUAN MICRO ELECTRONIC TECHNOLOGY CO., LTD.

# APPROVAL SHEET

Approval Specification	Customer's Approval Certificate
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# Shenzhen Huayuan Micro Electronic Technology Co.Ltd.

Tel:	+86-0755-29881155-8006	ROHS (Pb)	REACH
Fax:	+86-0755-29881157	compliance Pb free	KEAUN
E-mail:	sfsaw_sales@163.com		
QQ:	3037058772		
Website:	http://www.sfsaw.com http://www.szhywd.net		
Add:	No.5 Zhuangcun Road, Xiner Community,		
	Shajing Street, Baoan District, Shenzhen		

Part No.	:	SFR435A
Pages	:	4
Date	:	2016/8/1
Revision	:	2.0

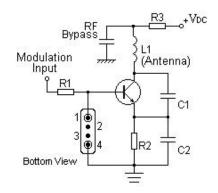
SFR435A

## Features

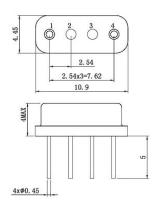
- 1-port Resonator
- Metal Case for SC04-06
- RoHS compatible
- Package Code SC04-06
- Electrostatic Sensitive Device(ESD)

## Application

Typical Low-Power Transmitter Application



## Package Dimensions (SC04-06)

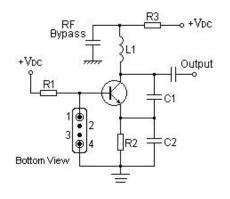


## Marking





#### Typical Local Oscillator Application



## **Pin Configuration**

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

SF	Trademark	
R	SAW Resonator	
435A	Part number	

Please read notes at the end of this document. - 2 -

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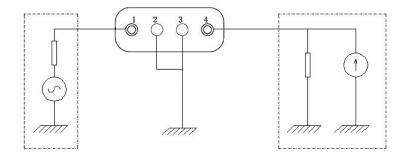
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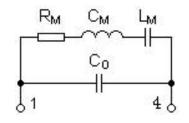
#### **SAW Resonator**

#### SFR435A

## **Test Circuit**

Equivalent LC Model





## Performance

#### **Maximum Rating**

ltem		Value	Unit
DC Voltage	V <sub>DC</sub>	±30	V
Operation Temperature	Т	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	°C
RF Power Dissipation	Р	25	dBm

### **Electronic Characteristics**

Test Temperature: 25℃±2℃

Terminating source impedance: 50Ω

#### Terminating load impedance: 50Ω

	ltem		Minimum	Typical	Maximum	Unit
Center	Absolute Frequency	fc		435.72		MHz
$\label{eq:Frequency} \hline \mbox{Tolerance from 435.72MHz} \qquad \  \  \bigtriangleup f_c$			±75		KHz	
Insertion Loss(r	nin)	IL		1.5	2.0	dB
Quality Factor	Unloaded Q	Qu		21023		
	50Ω Loaded Q	QL		3731		
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			MΩ
	Motional Resistance	R <sub>M</sub>		21.5	23.0	Ω
RF Equivalent RLC Model	Motional Inductance	L <sub>M</sub>		165.8		μH
	Motional Capacitance	См		0.89		fF
	Static Capacitance	C <sub>0</sub>	1.05	1.25	1.45	pF
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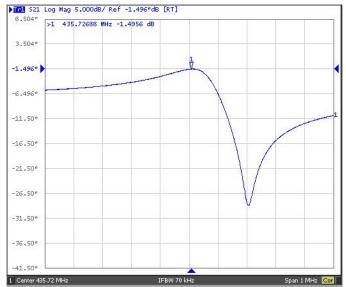
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#### **SAW Resonator**

#### **Frequency Response**



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

No.	Test item	Test condition
1	Temperature Storage	<ul> <li>(1) Temperature: 85℃±2℃, Duration: 250h, Recovery time: 2h±0.5h</li> <li>(2) Temperature: -40℃±3℃, Duration: 250h, Recovery time: 2h±0.5h</li> </ul>
2	Humidity Test	Conditions: 60°C±2°C , 90~95% RH Duration: 250h
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: 10~55HzAmplitude:1.5mmDirections: X,Y and ZDuration: 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         SMD1/5
7	Resistance to Soldering Heat	<ul> <li>(1)Thickness of PCB:1mm , Solder condition: 260℃±5℃ , Duration: 10±1s</li> <li>(2)Temperature of Soldering Iron: 350℃±10℃ , Duration: 3~4s , Recovery time : 2 ± 0.5h</li> </ul>

## 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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