

APPROVAL SHEET

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

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REACH

Part No.	:	SFR423D
Pages	:	4
Date	:	2016/8/1
Revision	:	2.0

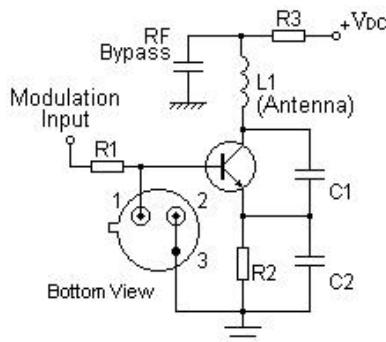
Features

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

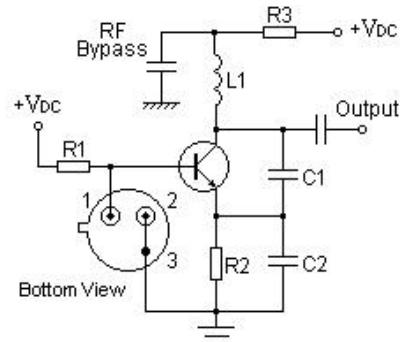


Application

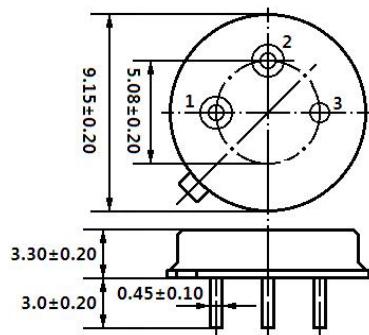
Typical Low-Power Transmitter Application



Typical Local Oscillator Application

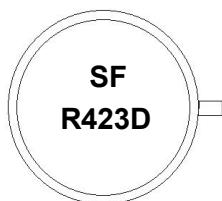


Package Dimensions (TO-39)



1	Input/ Output
2	Output/ Input
3	Case Ground

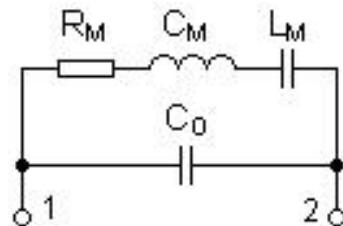
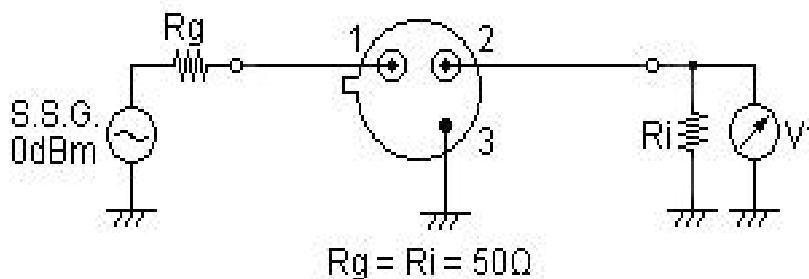
Marking



SF	Trademark
R	SAW Resonator
423D	Part number

Test Circuit

Equivalent LC Model



Performance

Maximum Rating

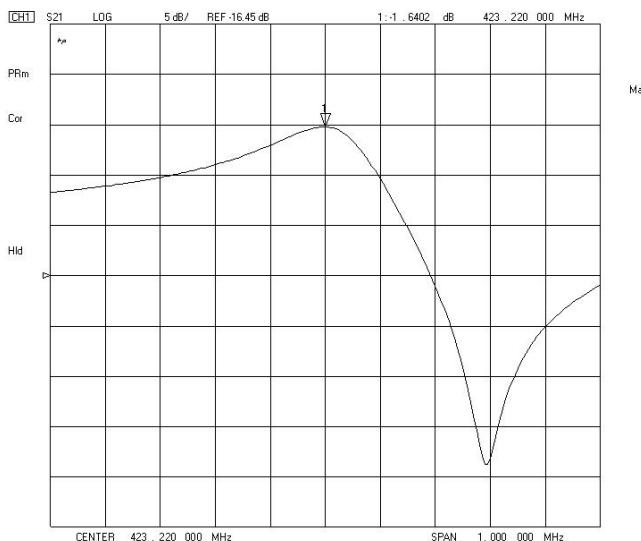
Item	Value	Unit
DC Voltage	V_{DC}	V
Operation Temperature	T	°C
Storage Temperature	T_{stg}	°C
RF Power Dissipation	P	dBm

Electronic Characteristics

Test Temperature: $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Terminating source impedance: 50Ω Terminating load impedance: 50Ω

Item	Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	f_c	423.22	MHz
	Tolerance from 423.22MHz	Δf_c	± 75	KHz
Insertion Loss(min)	IL	1.6	2.2	2.0
Quality Factor	Unloaded Q	Q_u	13596	
	50Ω Loaded Q	Q_L	1969	
Frequency Aging	Absolute Value during the First Year	$ f_A $	≤ 10	ppm/yr
DC Insulation Resistance between Any Two Pins		1.0		
RF Equivalent RLC Model	Motional Resistance	R_M	16	28
	Motional Inductance	L_M	86.2	μH
	Motional Capacitance	C_M	1.64	fF
	Static Capacitance	C_0	2.15	2.45
			2.75	pF

Frequency Response



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

No.	Test item	Test condition	
1	Temperature Storage	(1) Temperature: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$, Duration: 250h, Recovery time: $2\text{h} \pm 0.5\text{h}$ (2) Temperature: $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, Duration: 250h, Recovery time: $2\text{h} \pm 0.5\text{h}$	
2	Humidity Test	Conditions: $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 90~95% RH	Duration: 250h
3	Thermal Shock	Heat cycle conditions: $\text{TA} = -40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, $\text{TB} = 85^{\circ}\text{C} \pm 2^{\circ}\text{C}$, $t_1 = t_2 = 30\text{min}$, Switch time: $\leq 3\text{min}$, Cycle time: 100 times, Recovery time: $2\text{h} \pm 0.5\text{h}$.	
4	Vibration Fatigue	Frequency of vibration: 10~55Hz Directions: X, Y and Z	Amplitude: 1.5mm Duration: 2h
5	Drop Test	Cycle time: 10 times	Height: 1.0m
6	Solder Ability Test	Temperature: $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Depth: DIP-2/3, SMD-1/5	Duration: 3.0s--5.0s
7	Resistance to Soldering Heat	(1) Thickness of PCB: 1mm, Solder condition: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$, Duration: $10 \pm 1\text{s}$ (2) Temperature of Soldering Iron: $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$, Duration: 3~4s, Recovery time: $2 \pm 0.5\text{h}$	

Notes

- As a result of the particularity of inner structure of SAW products, it is easy to be breakdown by electrostatic, so we should pay attention to **ESD protect** in the test.
- Static voltage** between signal load and ground may cause deterioration and destruction of the component. Please avoid static voltage.
- Ultrasonic cleaning** may cause deterioration and destruction of the component. Please avoid ultrasonic cleaning.
- Only leads of component may be **soldered**. Please avoid soldering another part of component.
- 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.