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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| | | | |

| Part No. | : | SFR318D |
|----------|---|----------|
| Pages | : | 4 |
| Date | : | 2016/8/1 |
| Revision | : | 2.0 |

SAW Resonator

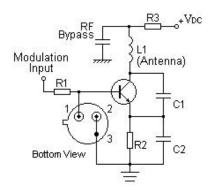
Features

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

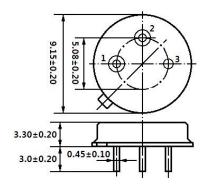


Application

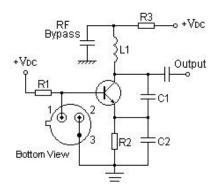
Typical Low-Power Transmitter Application



Package Dimensions (TO-39)



Typical Local Oscillator Application



Pin Configuration

| 1 | Input/ Output | | |
|---|---------------|--|--|
| 2 | Output/ Input | | |
| 3 | Case Ground | | |

Marking

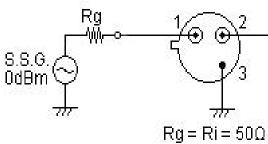


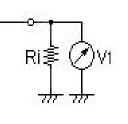
| SF | Trademark | | |
|------|---------------|--|--|
| R | SAW Resonator | | |
| 318D | Part number | | |

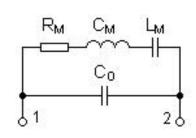
SAW Resonator

Test Circuit

Equivalent LC Model







Performance

Maximum Rating

| ltem | | Value | Unit |
|-----------------------|------------------|-----------|------|
| DC Voltage | V _{DC} | ±30 | V |
| Operation Temperature | Т | -40 ~ +85 | °C |
| Storage Temperature | T _{stg} | -40 ~ +85 | °C |
| RF Power Dissipation | Р | 25 | dBm |

Electronic Characteristics

Test Temperature: 25℃±2℃

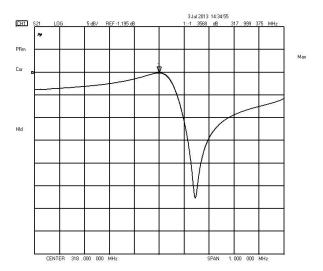
Terminating source impedance: 50Ω

Terminating load impedance: 50Ω

| | ltem | | Minimum | Typical | Maximum | Unit |
|----------------------------------|--------------------------------------|-------------------------|---------|---------|---------|--------|
| Center | Absolute Frequency | fc | | 318.000 | | MHz |
| Frequency | Tolerance from 318.00MHz | $	riangle \mathbf{f_c}$ | | ±75 | | KHz |
| Insertion Loss(r | nin) | IL | | 1.4 | 2.0 | dB |
| Ovelity Feeter | Unloaded Q | Qu | | 16283 | | |
| Quality Factor | 50Ω Loaded Q | Q_L | | 2187 | | |
| Frequency Aging | Absolute Value during the First Year | f _A | | ≤10 | | ppm/yr |
| DC Insulation R | esistance between Any Two Pins | | 1.0 | | | MΩ |
| | Motional Resistance | Rм | | 13 | 22 | Ω |
| RF Equivalent RLC Model | Motional Inductance | L _M | | 126.87 | | μH |
| | Motional Capacitance | См | | 2.03 | | fF |
| | Static Capacitance | Co | 2.1 | 2.4 | 2.7 | 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°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 | (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.

Please read notes at the end of this document. - 4 -

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