

规格书编号

SPEC NO:

# 产品规格书

# SPECIFICATION

CUSTOMER 客户: \_\_\_\_\_  
PRODUCT 产品: \_\_\_\_\_ SAW RESONATOR \_\_\_\_\_  
MODEL NO 型号: \_\_\_\_\_ HDR315M-F11 \_\_\_\_\_  
PREPARED 编制: \_\_\_\_\_ CHECKED 审核: \_\_\_\_\_  
APPROVED 批准: \_\_\_\_\_ DATE 日期: \_\_\_\_\_ 2013-12-11 \_\_\_\_\_

|                         |             |         |
|-------------------------|-------------|---------|
| 客户确认 CUSTOMER RECEIVED: |             |         |
| 审核 CHECKED              | 批准 APPROVED | 日期 DATE |
|                         |             |         |

无锡市好达电子有限公司  
Shoulder Electronics Limited



### 1. SCOPE

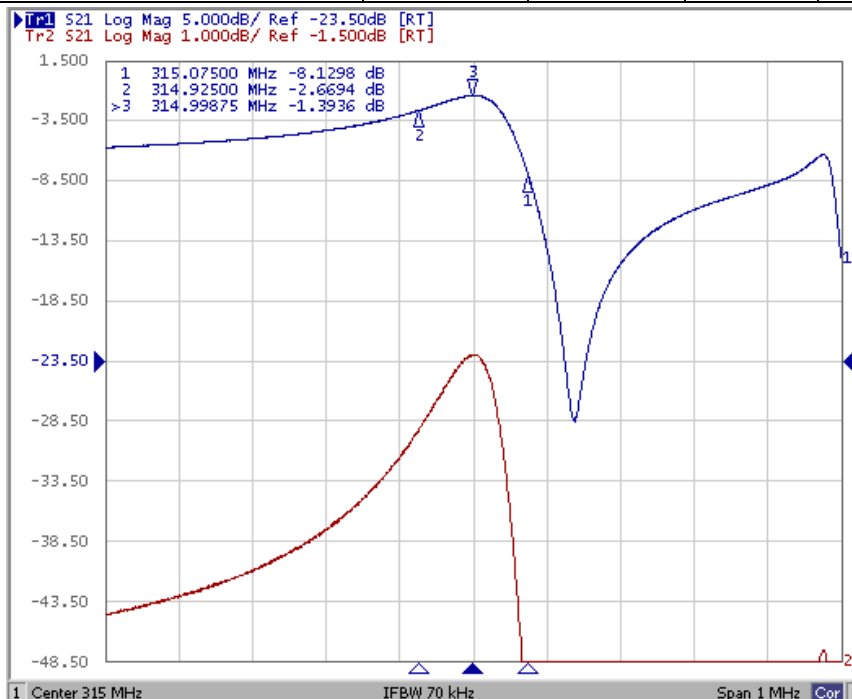
This specification is applied to a SAW resonator designed for the stabilization of transmitters such as garage door openers and security transmitters.

### 2. ELECTRICAL SPECIFICATION

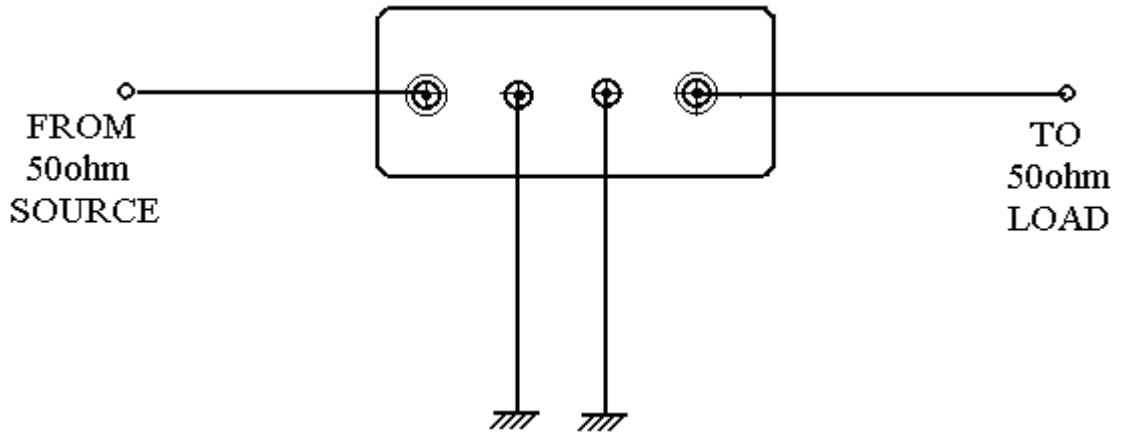
|                       |                |
|-----------------------|----------------|
| DC Voltage VDC        | 10V            |
| AC Voltage Vpp        | 10V50Hz/60Hz   |
| Operation temperature | -40°C to +85°C |
| Storage temperature   | -45°C to +85°C |
| RF Power Dissipation  | 0dBm           |

#### 2.2 Electronic Characteristics

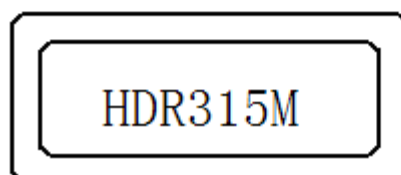
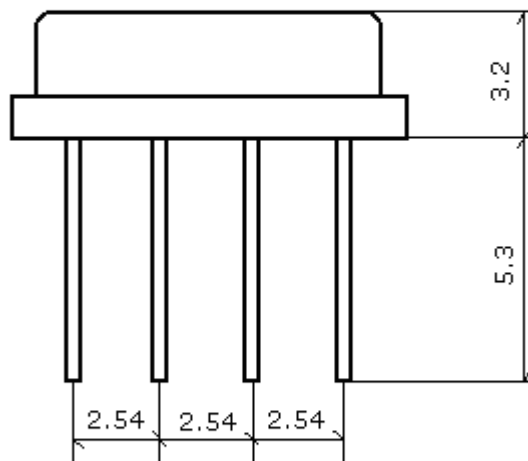
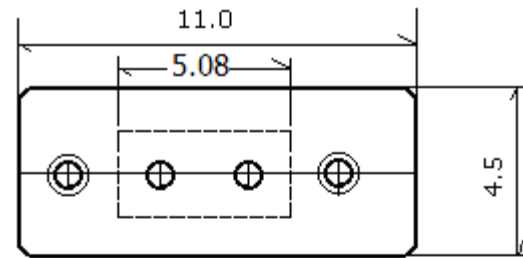
| Item                          |                         | Unites              | Minimum | Typical | Maximum |
|-------------------------------|-------------------------|---------------------|---------|---------|---------|
| Center Frequency              |                         | MHz                 | 314.950 | 315.000 | 315.050 |
| Insertion Loss                |                         | dB                  |         | 1.5     | 2.2     |
| Quality Factor Unload Q       |                         |                     | 8000    | 12800   |         |
| 50Ω Loaded Q                  |                         |                     | 1000    | 2000    |         |
| Temperature Stability         | Turnover Temperature    | °C                  | 10      | 25      | 40      |
|                               | Freq.temp.Coefficient   | ppm/°C <sup>2</sup> |         | 0.037   |         |
| Frequency Aging               |                         | ppm/yr              |         | ≤10     |         |
| DC. Insulation Resistance     |                         | MΩ                  | 1.0     |         |         |
| RF Equivalent RLC Model       | Motional Resistance R1  | Ω                   |         | 17      | 26      |
|                               | Motional Inductance L1  | μ H                 |         | 109.28  |         |
|                               | Motional Capacitance C1 | fF                  |         | 2.3357  |         |
| Transducer Static Capacitance |                         | pF                  |         | 2.7     |         |



### 3. TEST CIRCUIT



### 4. DIMENSION



## **5. ENVIRONMENTAL CHARACTERISTICS**

### 5-1 High temperature exposure

Subject the device to +85°C for 16 hours. Then release the resonator into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 2.2.

### 5-2 Low temperature exposure

Subject the device to -40°C for 16 hours. Then release the device into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 2.2.

### 5-3 Temperature cycling

Subject the device to a low temperature of -40°C for 30 minutes. Following by a high temperature of +85°C for 30 Minutes. Then release the device into the room conditions for 24 hours prior to the measurement. It shall meet the specifications in 2.2.

### 5-4 Resistance to solder heat

Dip the device terminals no closer than 1.5mm into the solder bath at 260°C  $\pm$ 10°C for 10 $\pm$ 1 sec. Then release the device into the room conditions for 4 hours. The device shall meet the specifications in 2.2.

### 5-5 Solderability

Subject the device terminals into the solder bath at 245°C  $\pm$ 5°C for 5s, More than 95% area of the terminals must be covered with new solder. It shall meet the specifications in 2.2.

### 5-6 Mechanical shock

Drop the device randomly onto the concrete floor from the height of 1m 3 times. the device shall fulfill the specifications in 2.2.

### 5-7 Vibration

Subject the device to the vibration for 1 hour each in x, y and z axes with the amplitude of 1.5 mm at 10 to 55 Hz. The device shall fulfill the specifications in 2.2.

## **6. REMARK**

### 6.1 Static voltage

Static voltage between signal load & ground may cause deterioration & destruction of the component. Please avoid static voltage.

### 6.2 Ultrasonic cleaning

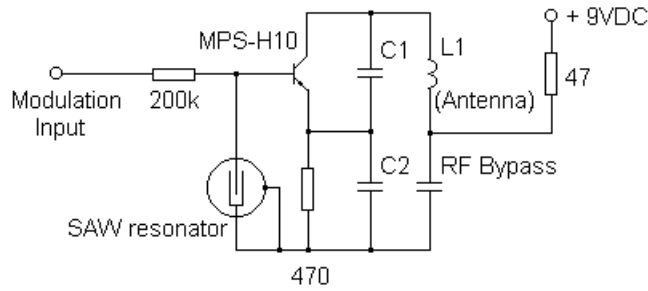
Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

### 6.3 Soldering

Only leads of component may be soldered. Please avoid soldering another part of component.

## 7. TYPICAL APPLICATION CIRCUITS

### Typical low-power Transmitter Application



### Typical Local Oscillator Application

