

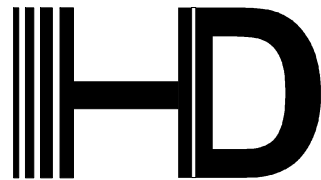
Approved by:

Checked by:

Issued by:

# ***SPECIFICATION***

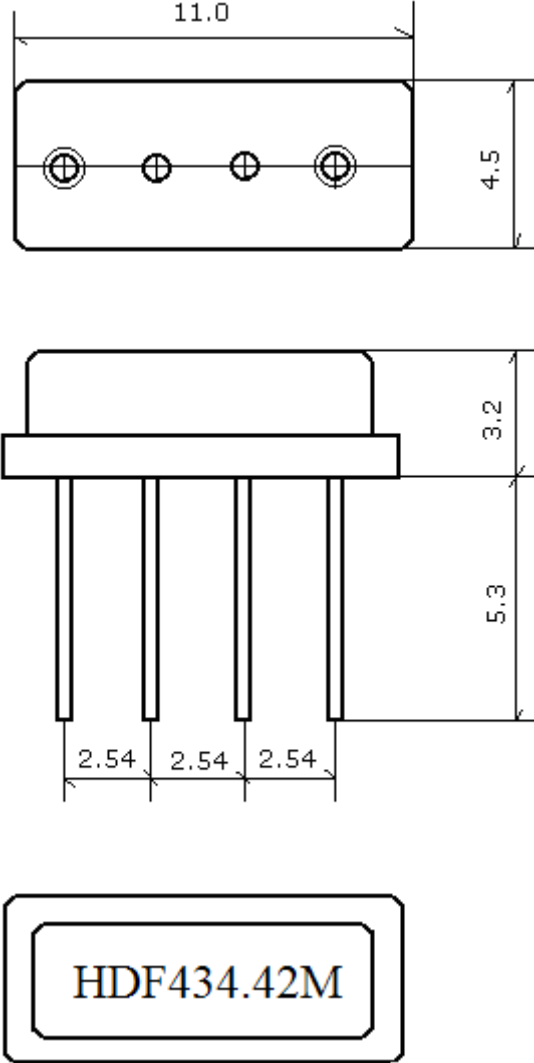
**MODEL: HDF434.42M(F11)**



**SHUOLDER ELECTRONICS LIMITED**

---

# 1.Package



# 2.Performance

## 2.1 Absolute Maximum Ratings

| Rating   | Value      | Units |
|--|------------|-------|
| Incident RF Power  | +13        | dBm   |
| Case Temperature   | -40 to +85 | °C    |
| DC Voltage Between Any Two Pins<br>(Observe ESD Precautions) | ±30        | VDC   |

## 2.2 Electrical Characteristics

**Reference temperature:**

$$T_A = 25^\circ\text{C}$$

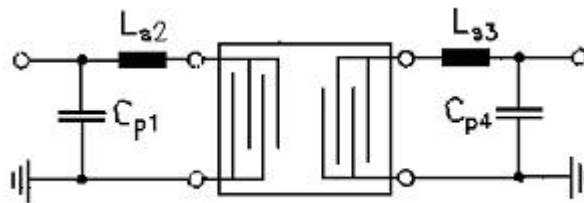
Terminating source impedance:  $Z_s = 50\ \Omega$  and matching network

Terminating load impedance:  $Z_L = 50\ \Omega$  and matching network

| Characteristic  |                                       | Min. | Typ.      |           |                       |
|---|---------------------------------------|------|-----------|-----------|-----------------------|
| Center Frequency<br>$f_c$ (center frequency between 3dB points) |                                       | --   | 434.42    | --        | MHz                   |
| Insertion Loss IL   |                                       | --   | 3.0       | 5.5       | dB                    |
| 3dB Passband $BW_3$   |                                       |      | $\pm 300$ |           | kHz                   |
| 3 dB Reject Band $BW_3$   |                                       |      |           | $\pm 500$ | kHz                   |
| Rejection   | at $f_c-21.4\text{MHz}$ (Image)       | 40   | 50        | --        | dB                    |
|   | at $f_c-10.7\text{MHz}$ (LO)          | 15   | 30        | --        |                       |
|   | Ultimate                              | --   | 80        | --        |                       |
| Temperature   | Operating Case Temperature $T_c$      | -35  |           | +85       | $^\circ\text{C}$      |
|   | Turnover Temperature $T_o$            | 15   | 25        | 40        |                       |
|   | Turnover Frequency $f_o$              |      | $f_c$     |           | MHz                   |
|   | Frequency Temperature Coefficient FTC |      | 0.032     |           | ppm/ $^\circ\text{C}$ |
| Frequency Aging<br>[fA]   | Absolute Value during the First Year  |      | 10        |           | ppm/yr                |

**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling!**

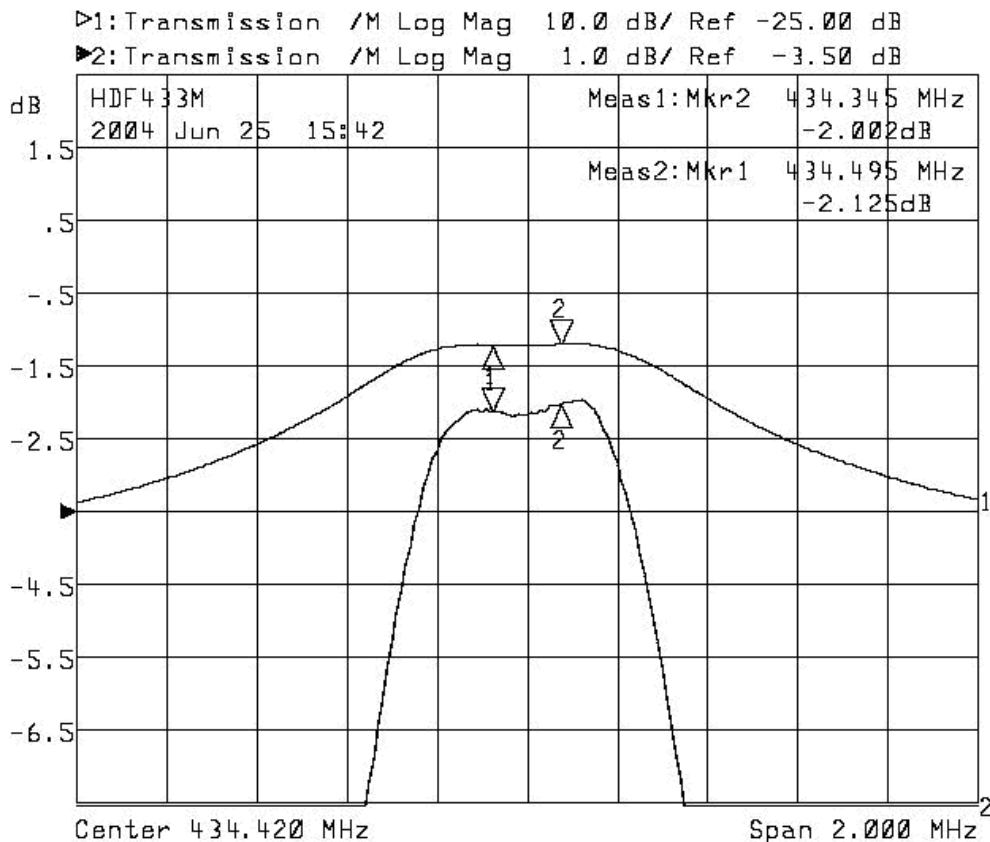
3. Matching network to  $50\ \Omega$  (element values depend on pcb layout and equivalent circuit)



$$C_{p1} = 10\text{pF}, L_{s2} = 43\text{nH}^*, L_{s3} = 43\text{nH}^*, C_{p4} = 10\text{pF}$$

$L_{s2} = L_{s3} = 6$  turns of  $0.51\text{mm}$  insulated Copper,  $2.5\text{mm}$  ID.

## 4. Typical Frequency Response



## 5. ENVIRONMENTAL CHARACTERISTICS

### 5-1 High temperature exposure

Subject the device to +85°C for 16 hours. Then release the filter into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in table 1.

### 5-2 Low temperature exposure

Subject the device to -20°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 table 1.

### 5-3 Temperature cycling

Subject the device to a low temperature of -40°C for 30 minutes. Following by a high temperature of +80°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 table 1.

### 5-4 Resistance to solder heat

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

### 5-5 Solderability

Subject the device terminals into the solder bath at 245°C ±5°C for 5s, More

than 95% area of the terminals must be covered with new solder. It shall meet the specifications in table 1.

#### 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 table 1.

#### 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 table 1.

#### 5-8 Lead fatigue

##### 5-8-1 Pulling test

Weight along with the direction of lead without an shock 1kg. The device shall satisfy all the initial Characteristics.

##### 5-8-2 Bending test

Lead shall be subject to withstand against 90°C bending with 450g weight in the direction of thickness. This operation shall be done toward both direction. The device shall show no evidence of damage and shall satisfy all the initial electrical characteristics.

## **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 solded. Please avoid soldering another part of component.