

**RoHS Compliant**

**Features**

- Small size
- Low insertion loss
- High selectivity
- Hermetic seal

**Applications**

- Short range device

**How to Order**

**SF 16 - 0868 M 4 UU 01**  
 ① ② ③ ④ ⑤ ⑥ ⑦

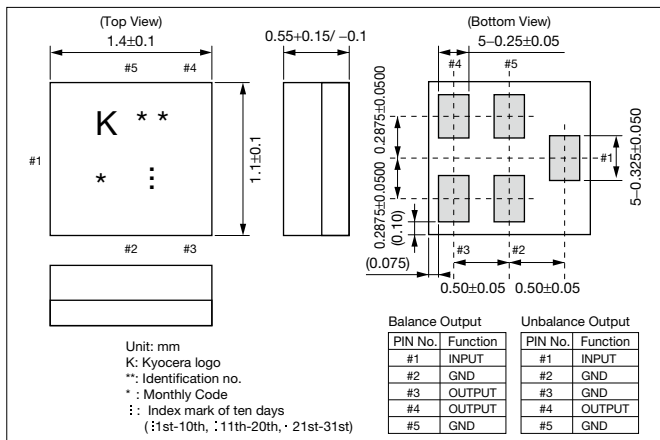
- ① Type of Product (SAW Filter)
- ② Package Size
- ③ Nominal Center Frequency
- ④ Spec.
- ⑤ Number of Terminals
- ⑥ Input/ Output
- ⑦ Custom Specification

**Specifications**

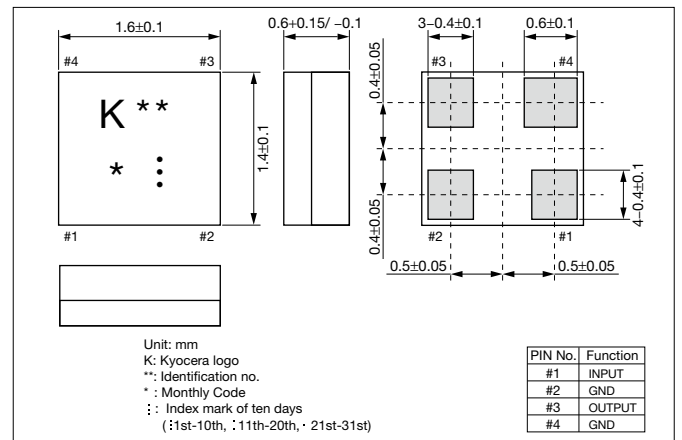
Part No.	Output	Application	Pass Band Frequency	Insertion Loss (dB)	Pass Band Variation (dB)	VSWR	Absolute Rejection (dB)								Operating Temperature	Storage Temperature		
SF14-0915M5UU01	Unbalance	Short range device	902MHz - 928MHz	3.0 max.	1.8 max.	2.0 max.	0.3MHz	800MHz	845MHz	880MHz	920MHz	992MHz	1020MHz	1200MHz	-	-	-30 to +85°C	-40 to +85°C
SF16-0868M4UU01			Short range device	858.92MHz - 877.92MHz	4.0 max.	2.0 max.	2.5 max.	0.1MHz	813.92MHz	832.92MHz	880MHz	903.92MHz	948.92MHz	1200MHz	-	-		
SF16-0908M4UU01		Short range device		898.92MHz - 917.92MHz	4.0 max.	2.0 max.	2.5 max.	0MHz	853.92MHz	872.92MHz	900MHz	922.92MHz	988.92MHz	1200MHz	-	-		
SF16-0923M4UU02			Short range device	919MHz - 928MHz	4.0 max.	3.0 max.	2.2 max.	0MHz	880MHz	890MHz	910MHz	910MHz	940MHz	950MHz	1000MHz	2450MHz		

**Dimensions**

**SF14 Series**

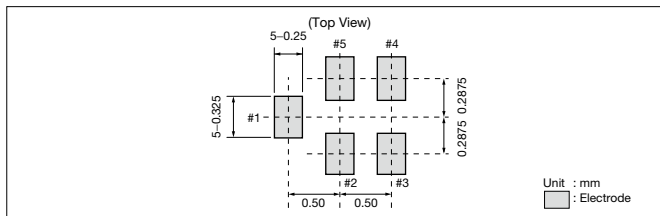


**SF16 Series**

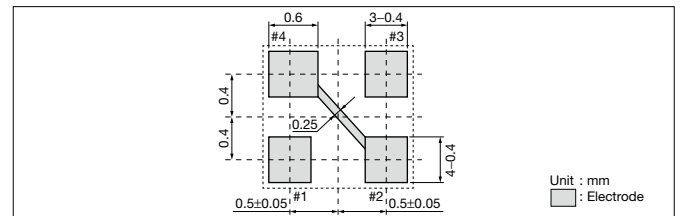


**Recommended Land Pattern**

**SF14 Series**

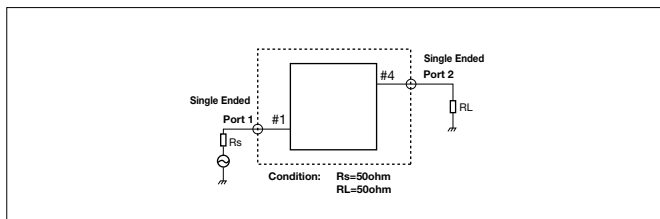


**SF16 Series**

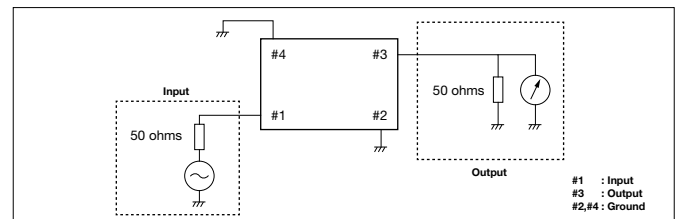


**Test Circuit**

**SF14 Series**

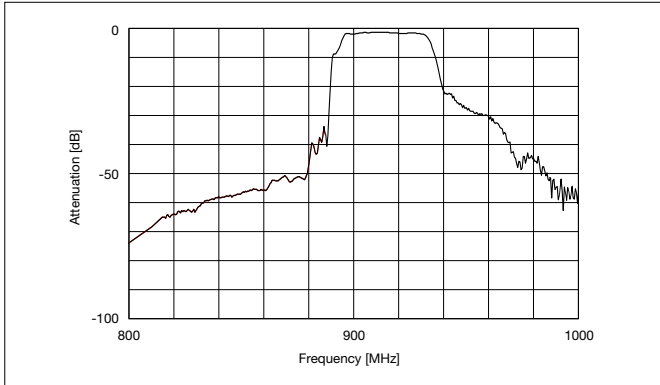


**SF16 Series**

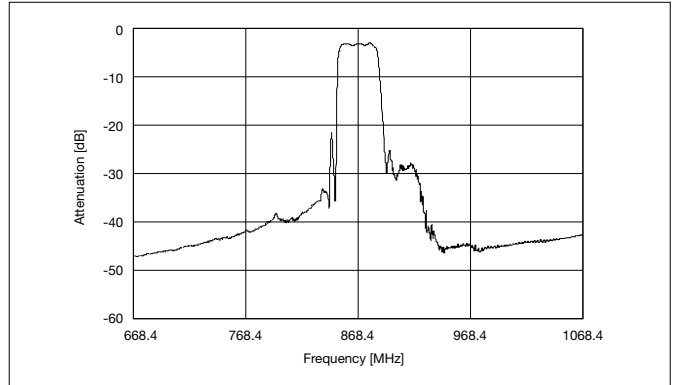


**Characteristics**

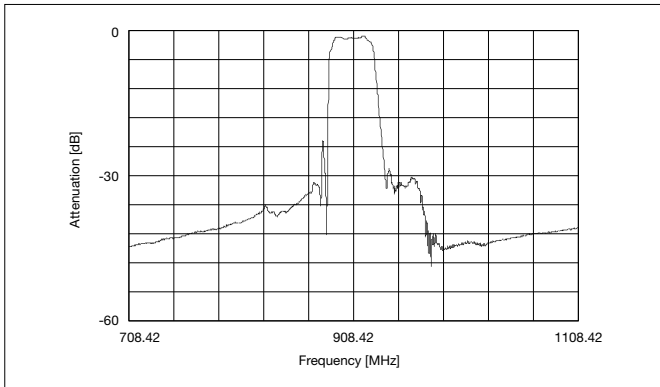
Part No.: SF14-0915M5UUA1



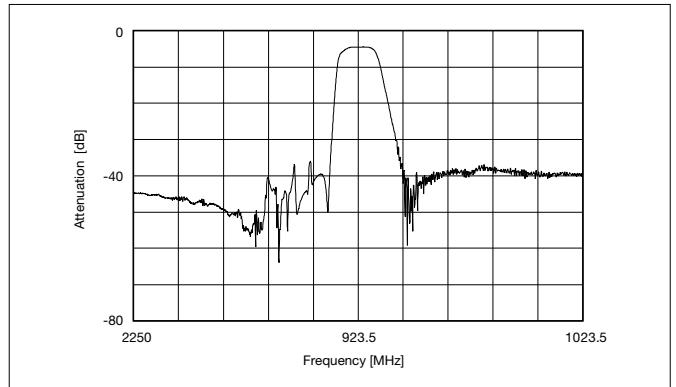
Part No.: SF16-0868M4UU01



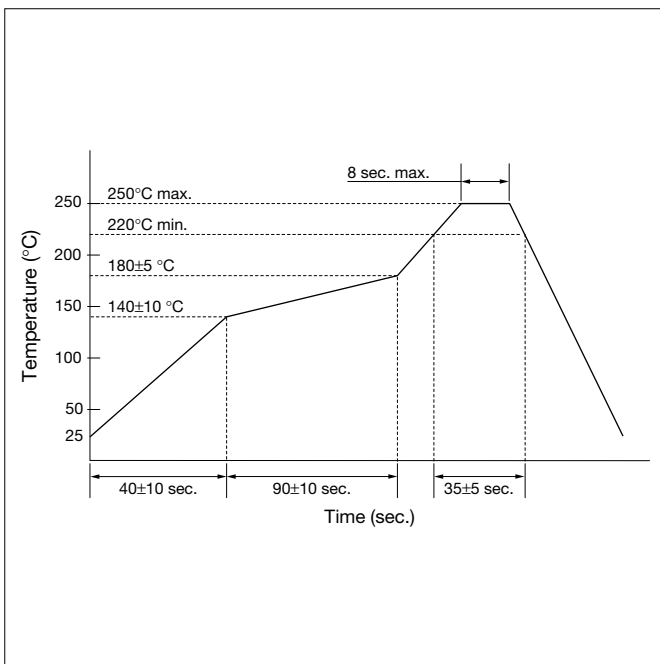
Part No.: SF16-0908M4UU01



Part No.: SF16-0923M4UUA2



**Recommended Reflow Profile**



## 1. Operating Environment

- 1) Use products within the rated operating temperature, otherwise it may not satisfy electrical characteristics specifications. It might work initially, but there is a high possibility that it will cause degradation, breakdown and lower reliability.
- 2) This product is designed and manufactured with intention to be used in electronic devices for standard applications, but not in the following environment which may affect performance of the product. Be sure not to use products in the following conditions which may cause electrical characteristics and reliability degradation.
  - Under corrosive gas (Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>x</sub>, NO<sub>x</sub>, etc.)
  - Under volatile and inflammability gas
  - Dusty environment
  - Direct exposure to water, or high humidity environment
  - Direct sunlight
  - High static electricity, or high electric intensity.

Please consult with us if you intend to use products in the above environment.

- 3) This product can not be used in liquid such as water, oil, chemical and organic solvent.
- 4) Operate under rated voltage, otherwise it may not satisfy electrical characteristics specifications. It might work initially, but there is high possibility that it will cause degradation, breakdown and lower the reliability.
- 5) Avoid contact with other components on the board, since outer resin is not intended for the insulation with other components.
- 6) There might be a strong electrical charge when rapid thermal change is applied to this product. This charge may damage the product and the peripheral circuit. Therefore, insert load discharge path between input/output and ground.
- 7) Do not apply larger load greater than the one loaded in the environmental test. It might work initially, but there is a high possibility that it will cause degradation, breakdown and lower the reliability.
- 8) Do not use transfer mold for this product. It may break hermetic seal and cause abnormal operation. Please consult us when molding by resin.

## **2. Storage instructions**

- 1) Do not store products in the following environment which may deteriorate solderability.
  - Under corrosive gas (Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>x</sub>, NO<sub>x</sub>, etc.)
  - Under volatile and inflammability gas
  - Dusty environment
  - Direct exposure to water, or high humidity environment
  - Direct sunlight
  - High static electricity, or high electric intensity

Please consult with us if you intend to use products in the above environment.

- 2) Store products under normal temperature and humidity in the sealed or unopened package.  
Storage of products for over 12 months after shipment may deteriorate solderability, and it is advised to perform solderability test before use. Also, be cautioned that color of electrode might change after a long term storage.
- 3) Open the sealed pack just before use.  
Practice assembly within 168 hours after opening the pack, and in the condition of 5-30deg.C and below 60%RH.
- 4) Stacking the box too high may cause fall over. It is advised to stack the box at the maximum of 5 boxes.

## **3. Handling instructions**

- 1) Do not apply larger vibration or shock greater than specified, since it may cause degradation, breakdown and lower reliability.
- 2) Do not apply larger shock or load greater than specified, while carrying the board with products mounted.
- 3) Take appropriate measure to avoid static electricity and high voltage when handling products, since it may cause degradation or damage to the products.
- 4) Do not handle this product with bare hands.

## **4. Assembly instructions**

- 1) Place products in the place to avoid stress from bending and camber of the board.  
There may be a large stress or shock when the product is placed near the connection parts with other outer parts.
- 2) Please do not apply larger stress greater than the one loaded in the environmental test when mounting on the board.
- 3) Make sure to solder all electrodes to the board, otherwise it may cause lower electrode strength.

## Tape & Reel Specifications

### SAW Duplexers/ SAW Filters

(Unit: mm)

		SAW Duplexers		SAW Filters				
		SD18	SD20	SF14	SF15	SF16	SF18	SF20
T A P E	A	2.0±0.05	2.0±0.05	2.0±0.05	2.0±0.05	2.0±0.05	2.0±0.05	2.0±0.05
	B	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1
	C	φ1.5±0.1/ -0	1.5±0.1	φ1.5±0.1	1.5±0.1	1.5±0.1	φ1.5±0.1/ -0	1.5±0.1
	D	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1
	E	3.5±0.05	3.5±0.05	3.5±0.05	3.5±0.05	3.5±0.05	3.5±0.05	3.5±0.05
	F	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1
	G	8.0±0.1	8.0±0.2	8.0±0.2	8.0±0.2	8.0±0.2	8.0±0.1	8.0±0.2
	H	φ0.8±0.05	1.1±0.1	φ0.5±0.05	0.5±0.1	1.1±0.1	φ0.8±0.05	1.1±0.1
	J	2.05±0.1	2.25±0.1	1.7±0.1	1.80±0.1	1.90±0.1	2.05±0.1	2.25±0.1
	L	1.7±0.1	1.8±0.1	1.4±0.1	1.4±0.1	1.85±0.1	1.7±0.1	1.8±0.1
	N	0.85+0/ -0.5	0.7±0.1	0.8±0.1	0.7±0.1	0.95±0.2	0.85+0/ -0.5	0.7±0.1
O	0.2±0.05	0.2±0.05	0.2±0.05	0.2±0.05	0.25±0.05	0.2±0.05	0.2±0.05	
R E E L	P	φ178±2	φ178±2	φ178±2	φ178±2	φ178±2	φ178±2	φ178±2
	Q	φ60±2	φ60±2	φ60±2	φ60±2	φ60±2	φ60±2	φ60±2
	R	φ13±0.2	φ13±0.2	φ13±0.2	φ13±0.2	φ13±0.2	φ13±0.2	φ13±0.2
	S	φ21±0.8	φ21±0.8	φ21±0.8	φ21±0.8	φ21±0.8	φ21±0.8	φ21±0.8
	U	2±0.5	2±0.5	2±0.5	2±0.5	2±0.5	2±0.5	2±0.5
	W	9.5±1	9.5±1	9.5±1	9.5±1	9.5±1	9.5±1	9.5±1
Qty.		3000	3000	3000	3000	3000	3000	3000

