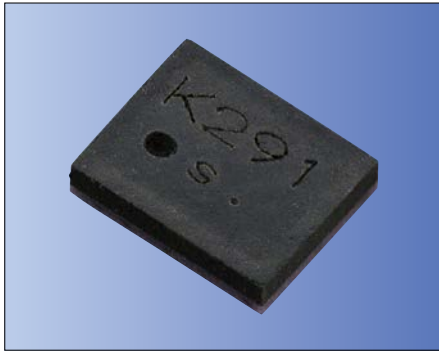


SAW Duplexers SD20 Series (Unbalanced Type)



RoHS Compliant

Features

- High attenuation
- High isolation
- Rx unbalanced output type

Applications

- UMTS (W-CDMA)
- CDMA

How to Order

SD 20 - 1950 R 9 UU Q1
 ① ② ③ ④ ⑤ ⑥ ⑦

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

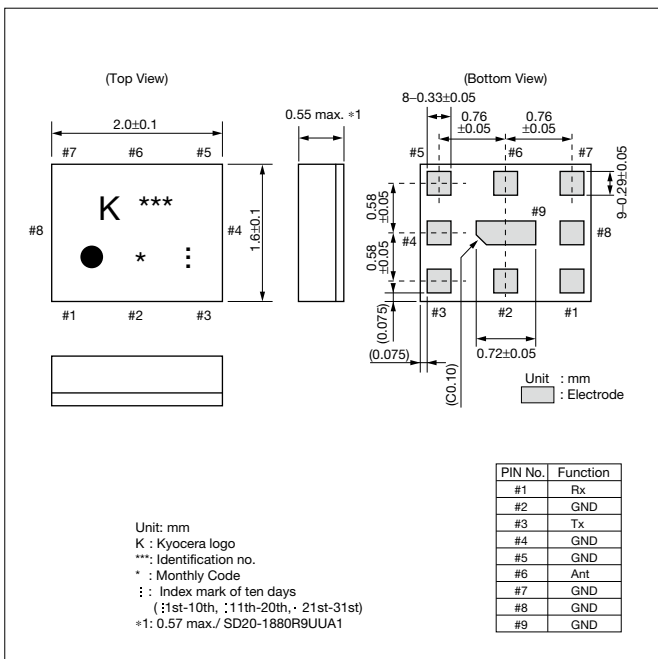
Specifications

Part No.	Band	Condition	Pass Band Frequency	Insertion Loss (dB)	Pass Band Variation (dB)	VSWR	Absolute Rejection (dB)						Isolation Tx to Rx (dB)	Operating Temperature	Storage Temperature
							843MHz	1573.374MHz	1805MHz	1865MHz	2010MHz	2400MHz			
SD20-1950R9UUQ1	Band1	Tx to Ant	1920.48MHz - 1979.52MHz	2.1 max.	0.5 max.	2.2 max.	843MHz	1573.374MHz	1805MHz	1865MHz	2010MHz	2400MHz	51 min. (1920.48-1979.52MHz) 47 min. (2111.25-2168.75MHz)	-30 to +85°C	-40 to +85°C
		Ant to Rx	2110.48MHz - 2169.52MHz	2.6 max.	0.5 max.	2.2 max.	1MHz	1920MHz	1980MHz	2255MHz	2400MHz	2484MHz			
SD20-1880R9UUA1	Band2	Tx to Ant	1850.48MHz - 1909.52MHz	2.4 max. *2 (1852.4-1907.6MHz) 2.5 max *3 (1851.25-1908.75MHz)	1.8 max.	2.1 max.	869MHz	1573.374MHz	2400MHz	4900MHz	—	—	53 min. *2 (1852.4-1907.6MHz) 52 min. *3 (1851.25-1908.75MHz)	-30 to +85°C	-40 to +85°C
		Ant to Rx	1930.48MHz - 1989.52MHz	3.5 max. *2 (1932.4-1987.6MHz) 3.98 max *3 (1934.25-1988.75MHz)	2.5 max.	2.1 max.	824MHz	1852.4MHz	1851.25MHz	2400MHz	4900MHz	—			
SD20-0836R9UUQ1	Band5	Tx to Ant	824MHz - 849MHz	2.1 max.	1.0 max.	2.0 max.	869MHz	1573.374MHz	1638MHz	2400MHz	4900MHz	—	55 min. (824-849MHz)	-30 to +85°C	-40 to +85°C
		Ant to Rx	869MHz - 894MHz	2.4 max.	1.0 max.	2.0 max.	447MHz	824MHz	849MHz	909MHz	2400MHz	4900MHz			
SD20-0897R9UUQ1	Band8	Tx to Ant	880.48MHz - 914.52MHz	2.7 max. *2 (882.4-912.6MHz)	1.5 max.	2.2 max.	927.4MHz	1573.374MHz	1760MHz	2400MHz	2620MHz	4900MHz	53 min. (882.4-912.6MHz)	-30 to +85°C	-40 to +85°C
		Ant to Rx	925MHz - 960MHz	2.9 max. *2 (927.4-957.6MHz)	1.5 max.	2.2 max.	957.6MHz	1577.466MHz	1880MHz	2500MHz	2745MHz	5950MHz			

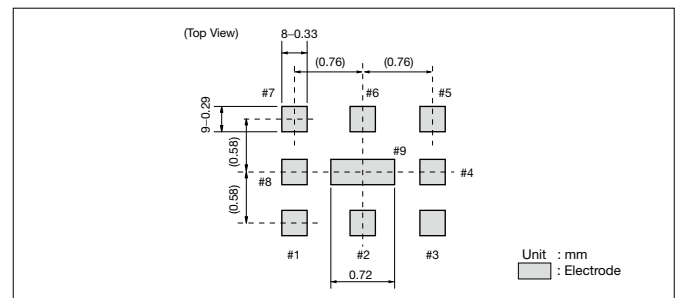
*1 Operating Temperature of +15 to +85°C *2 Integrated calculation, WCDMA Modulation (±1.92MHz). Unit : dBint

*3 Integrated calculation, NCDMA Modulation (±0.615MHz). Unit : dBint

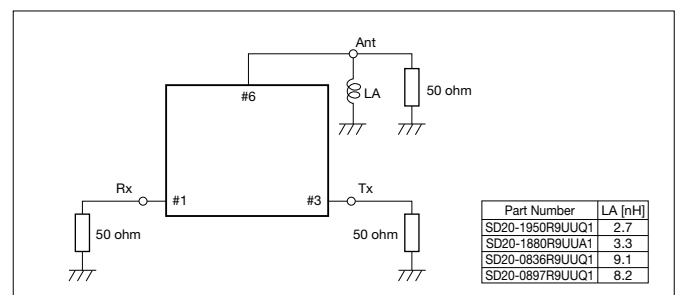
Dimensions



Recommended Land Pattern



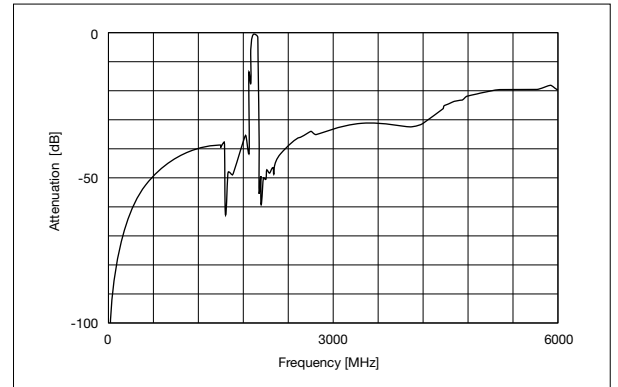
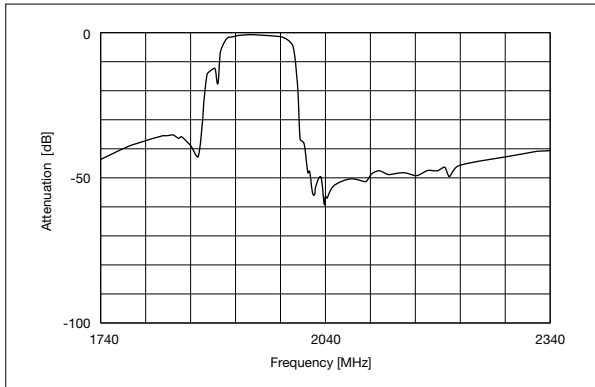
Test Circuit



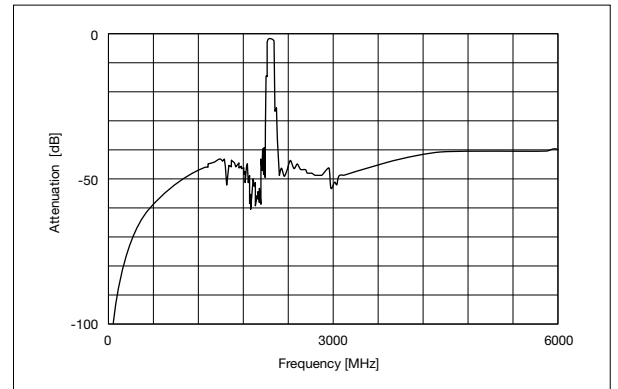
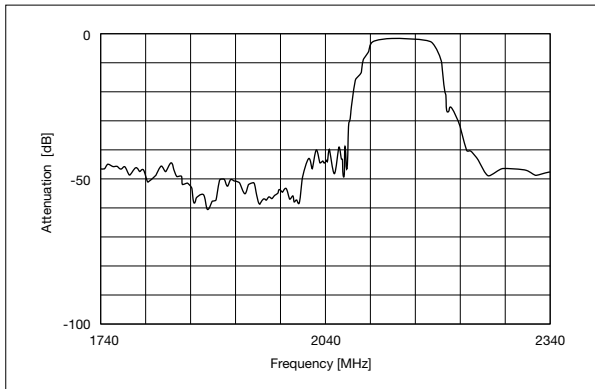
Characteristics

<Band1> Part No.: SD20-1950R9UUQ1

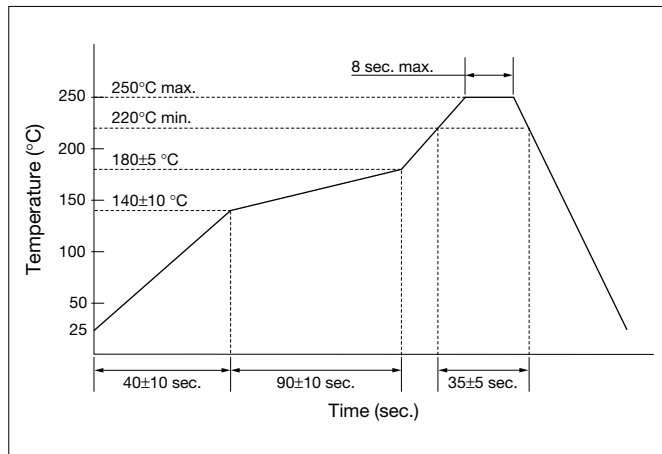
Tx to Ant



Ant to Rx



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 (Cl₂, H₂S, NH₃, SO_x, NO_x, 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 (Cl₂, H₂S, NH₃, SO_x, NO_x, 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

