SAW Duplexers
SD18 Series (Balanced Type)

KYOCERA

RoHS Compliant

Features

- Small size
- Low loss, high isolation
- Rx balanced output type

Applications

- LTE
- UMTS (W-CDMA)
- CDMA

  Individual specification for LTE.

How to Order

SD 18 - 1950 R 8 UB Q1
① ② ③ ④ ⑤ ⑥ ⑦

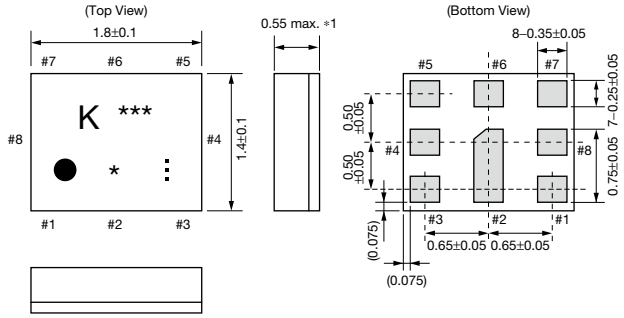
① Type of Product (SAW Duplexer)
② Package Size
③ Nominal Center Frequency
④ Spec.
⑤ Number of Terminals
⑥ Input/ Output
⑦ Custom Specification

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
														Differential Mode	Common Mode		
SD18-1950R8UBQ1	Band1	Tx to Ant	1920.48MHz - 1979.52MHz	2.0 max.	0.5 max.	2.0 max.	843MHz - 894MHz	1573.374MHz - 1577.466MHz	1805MHz - 1865MHz	1865MHz - 1880MHz	2010MHz - 2025MHz	2110MHz - 2170MHz	2400MHz - 2500MHz	1920.48MHz - 1979.52MHz	1920.48MHz - 1979.52MHz	-30 to +85°C	-40 to +85°C
							44 min.	42 min.	25 min.	10 min.	5 min. *1	44 min.	36 min.	53 min.	50 min.		
		Ant to Rx	2110.48MHz - 2169.52MHz	2.5 max.	0.5 max.	2.0 max.	1920MHz - 1980MHz	1980MHz - 2025MHz	2255MHz - 2400MHz	2400MHz - 2484MHz	2484MHz - 6000MHz	—	—	—	—		
							45 min.	15 min.	15 min.	30 min.	35 min.	—	—				
SD18-1880R8UBA1	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 - 894MHz	1573.374MHz - 1577.466MHz	2400MHz - 2500MHz	5150MHz - 5350MHz	—	—	—	1852.4MHz - 1907.6MHz	1852.4MHz - 1907.6MHz	-30 to +85°C	-40 to +85°C
							40 min.	45 min.	30 min.	20 min.	—	—	—	53 min. *2	46 min. *2		
		Ant to Rx	1930.48MHz - 1989.52MHz	3.4 max. *2 (1932.4-1987.6MHz) 3.5 max. *3 (1931.25-1988.75MHz)	2.5 max.	2.0 max.	1MHz - 1850MHz	1765MHz - 1835MHz	1852.4MHz - 1907.6MHz	1851.25MHz - 1908.75MHz	2400MHz - 2484MHz	5625MHz - 5815MHz	—	—	—		
							30 min.	35 min.	48 min. *2	47 min. *3	30 min.	30 min.	—				
SD18-0836R8UBQ1	Band5	Tx to Ant	824MHz - 849MHz	2.0 max.	1.0 max.	2.0 max.	869MHz - 894MHz	1573.374MHz - 1577.466MHz	1638MHz - 1708MHz	1844.9MHz - 1879.9MHz	1884.5MHz - 1919.6MHz	1930MHz - 1990MHz	2400MHz - 2557MHz	824MHz - 849MHz	824MHz - 849MHz	-30 to +85°C	-40 to +85°C
							44 min.	45 min.	40 min.	30 min.	30 min.	44 min.	45 min.	55 min.	50 min.		
		Ant to Rx	869MHz - 894MHz	2.2 max.	1.2 max.	2.0 max.	447MHz - 824MHz	824MHz - 849MHz	849MHz - 854MHz	909MHz - 1000MHz	1000MHz - 1850MHz	1850MHz - 1920MHz	1920MHz - 6000MHz	—	—		
							30 min.	45 min.	10 min.	10 min.	28 min.	40 min.	35 min.				
SD18-2535R8UBM1	Band7	Tx to Ant	2500MHz - 2570MHz	3.0 max.	2.0 max.	2.0 max.	925MHz - 960MHz	880MHz - 915MHz	1573.37MHz - 1577.47MHz	1805MHz - 1830MHz	1710MHz - 1785MHz	2402MHz - 2442MHz	2442MHz - 2457MHz	2500MHz - 2570MHz	—	-20 to +85°C	-40 to +85°C
							30 min.	32 min.	35 min.	28 min.	30 min.	40 min.	45 min.	52 min.			
		Ant to Rx	2620MHz - 2690MHz	2.5 max.	1.5 max.	2.0 max.	880MHz - 915MHz	1710MHz - 1785MHz	2402MHz - 2482MHz	2500MHz - 2570MHz	2775MHz - 6000MHz	4900MHz - 5300MHz	5300MHz - 5950MHz	2620MHz - 2690MHz	2500MHz - 2570MHz		
							37 min.	35 min.	41 min.	45 min.	35 min.	47 min.	40 min.	51 min.	44 min.		
SD18-0897R8UBQ1	Band8	Tx to Ant	882.4MHz - 912.6MHz	2.7 max. *2	2.0 max.	2.0 max.	927.4MHz - 957.6MHz	1573.374MHz - 1577.466MHz	1760MHz - 1830MHz	2400MHz - 2500MHz	2620MHz - 2745MHz	—	—	882.4MHz - 912.6MHz	882.4MHz - 912.6MHz	-20 to +85°C	-40 to +85°C
							44 min. *2	43 min.	38 min.	35 min.	35 min.	—	—	55 min. *2	49 min. *2		
		Ant to Rx	925MHz - 960MHz	3.3 max.	2.0 max.	2.0 max.	10MHz - 880MHz	882.4MHz - 912.6MHz	1045MHz - 1750MHz	1750MHz - 4810MHz	—	—	—	—	—		
							35 min.	45 min. *2	15 min.	35 min.	—	—	—				

*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

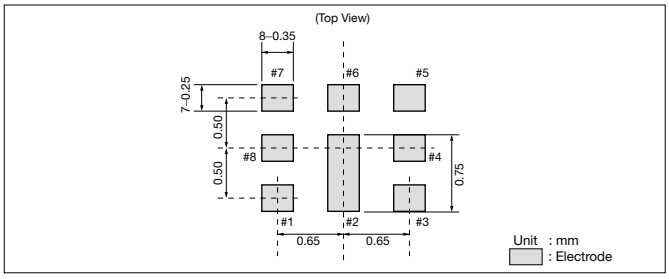
Dimensions



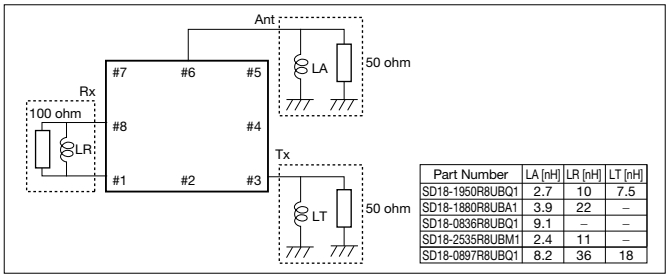
Unit: mm
K : Kyocera logo
***: Identification no.
● : Index mark of pin 1
* : Monthly Code
⋮ : Index mark of ten days
(⋮1-10, ⁚11-20, ・21-31)
*1: 0.57 max./ SD18-1880R8UBA1
SD18-2533R8UBM1

PIN No.	Function
#1	Rx
#2	GND
#3	Tx
#4	GND
#5	GND
#6	Ant
#7	GND
#8	Rx

Recommended Land Pattern



Test Circuit

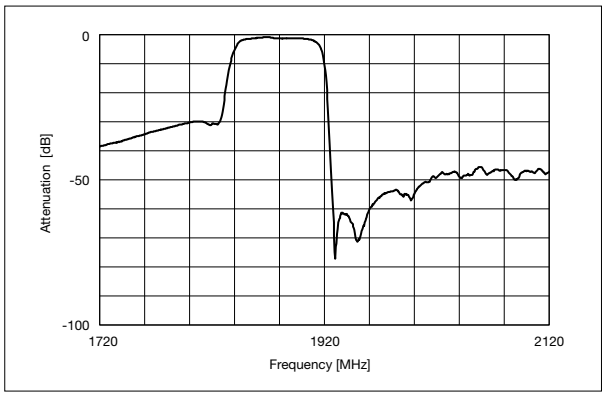


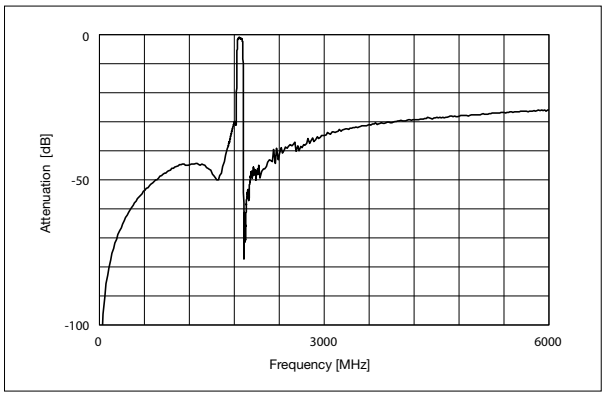
Part Number	LA [nH]	LR [nH]	LT [nH]
SD18-1950R8UBQ1	2.7	10	7.5
SD18-1880R8UBA1	3.9	22	–
SD18-0836R8UBQ1	9.1	–	–
SD18-2535R8UBM1	2.4	11	–
SD18-0897R8UBQ1	8.2	36	18

Characteristics

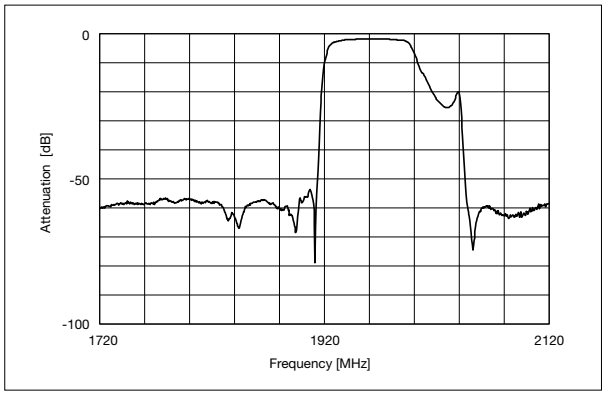
<Band2> Part No.: SD18-1880R8UBA1

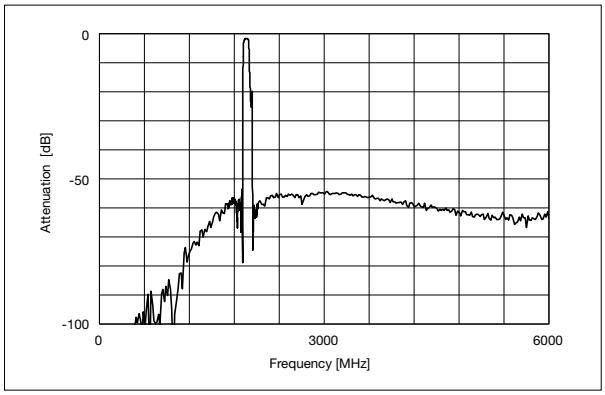
Tx to Ant



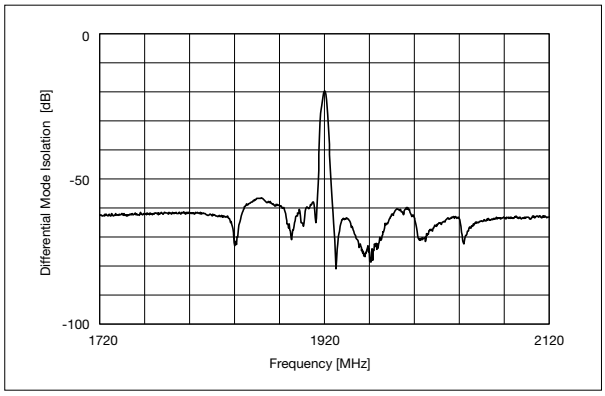


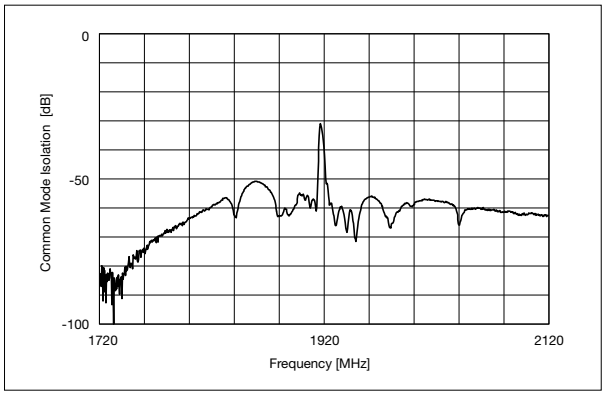
Ant to Rx



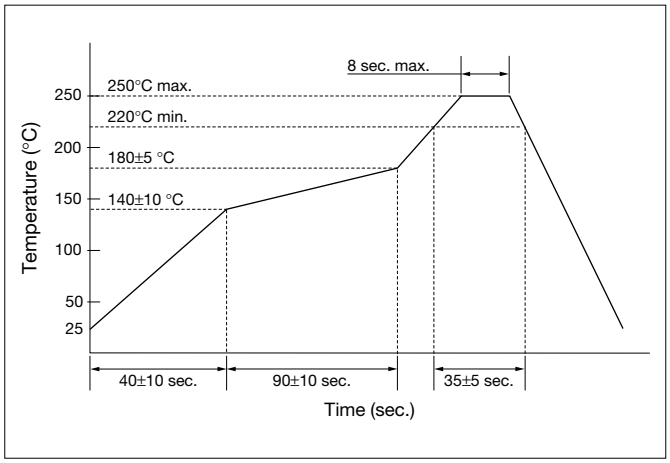


Tx to Rx





Recommended Reflow Profile



SAW Duplexers
SD18 Series (Unbalanced Type)

KYOCERA

RoHS Compliant

Features

- Small size
- Low loss, high isolation
- Rx unbalanced output type

Applications

- LTE
  Individual specification for LTE
- UMTS (W-CDMA)
- CDMA

How to Order

SD 18 - 1880 R 8 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

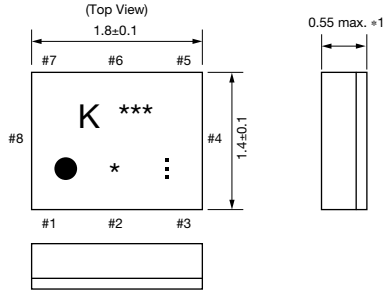
Specifications

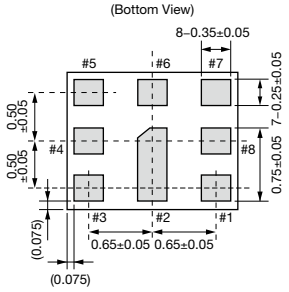
Part No.	Band	Condition	Pass Band Frequency	Insertion Loss (dB)	Pass Band Variation (dB)	VSWR	Absolute Rejection (dB)							Isolation Tx to Rx (dB)	Operating Temperature	Storage Temperature
SD18-1950R8UUQ1	Band1	Tx to Ant	1920.48MHz - 1979.52MHz	2.0 max.	0.5 max.	2.0 max.	843MHz - 894MHz 44 min.	1573.374MHz - 1577.466MHz 42 min.	1805MHz - 1865MHz 25 min.	1865MHz - 1880MHz 10 min.	2010MHz - 2025MHz 5 min. *1	2110MHz - 2170MHz 44 min.	2400MHz - 2500MHz 36 min.	55 min. 1920.48-1979.52MHz	−30 to +85°C	−40 to +85°C
		Ant to Rx	2110.48MHz - 2169.52MHz	2.5 max.	1.0 max.	2.0 max.	1920MHz - 1980MHz 45 min.	1980MHz - 2015MHz 15 min.	2015MHz - 2050MHz 30 min.	2050MHz - 2075MHz 20 min.	2255MHz - 6000MHz 40 min.	— —	— —	54 min. 2111.25-2168.75MHz		
SD18-1880R8UUQ1	Band2	Tx to Ant	1850.48MHz - 1909.52MHz	2.8 max.	1.3 max.	2.0 max.	869MHz - 894MHz 44 min.	1573.374MHz - 1577.466MHz 43 min.	1930MHz - 1990MHz 44 min. *2	2400MHz - 2500MHz 35 min.	4900MHz - 5850MHz 20 min.	— —	— —	55 min. 1850.48-1909.52MHz	−30 to +85°C	−40 to +85°C
		Ant to Rx	1930.48MHz - 1989.52MHz	3.5 max.	1.3 max.	2.0 max.	824MHz - 849MHz 40 min.	1850MHz - 1910MHz 45 min.	2400MHz - 2500MHz 40 min.	4900MHz - 5950MHz 40 min.	— —	— —	— —	53 min. *2 1930.25-1989.75MHz		
SD18-1880R8UUC1	Band2	Tx to Ant	1850.48MHz - 1909.52MHz	2.4 max. *3 (1852.4-1907.6MHz) 2.5 max. *4 (1851.25-1908.75MHz)	1.8 max.	2.1 max.	869MHz - 894MHz 44 min.	1573.374MHz - 1577.466MHz 43 min.	2400MHz - 2500MHz 35 min.	4900MHz - 5850MHz 20 min.	— —	— —	— —	53 min *3 1852.4-1907.6MHz	−30 to +85°C	−40 to +85°C
		Ant to Rx	1930.48MHz - 1989.52MHz	3.5 max. *3 (1932.4-1987.6MHz) 3.9 max. *4 (1931.25-1988.75MHz)	2.5 max.	2.1 max.	824MHz - 849MHz 40 min.	2400MHz - 2500MHz 40 min.	4900MHz - 5950MHz 40 min.	— —	— —	— —	— —	51 min *3 1932.4-1987.6MHz		
SD18-0836R8UUQ1	Band5	Tx to Ant	824MHz - 849MHz	2.0 max.	1.0 max.	2.0 max.	869MHz - 894MHz 44 min.	1573.374MHz - 1577.466MHz 42 min.	1638MHz - 1708MHz 35 min.	1844.9MHz - 1879.9MHz 30 min.	1884.5MHz - 1919.6MHz 30 min.	1930MHz - 1990MHz 44 min.	2400MHz - 2557MHz 45 min.	55 min. 824-849MHz	−30 to +85°C	−40 to +85°C
		Ant to Rx	869MHz - 894MHz	2.2 max.	1.0 max.	2.0 max.	447MHz - 824MHz 40 min.	824MHz - 849MHz 45 min.	849MHz - 854MHz 30 min.	909MHz - 979MHz 8 min.	2400MHz - 2500MHz 40 min.	4900MHz - 5950MHz 40 min.	—	50 min. 869.7-893.37MHz		
SD18-2535R8UUQ1	Band7	Tx to Ant	2500MHz - 2570MHz	2.8 max.	1.5 max.	2.0 max.	832MHz - 862MHz 30 min.	1573.374MHz - 1577.466MHz 35 min.	1710MHz - 1785MHz 30 min.	1805MHz - 1880MHz 40 min.	2402MHz - 2470MHz 40 min.	2440MHz - 2460MHz 45 min.	4900MHz - 5950MHz 40 min.	55 min. 2500-2570MHz	−20 to +90°C	−40 to +90°C
		Ant to Rx	2620MHz - 2690MHz	2.9 max.	—	2.0 max.	718MHz - 748MHz 40 min.	1710MHz - 1785MHz 45 min.	2400MHz - 2500MHz 40 min.	2402MHz - 2470MHz 48 min.	2500MHz - 2570MHz 45 min.	4900MHz - 5300MHz 47 min.	5300MHz - 5950MHz 40 min.	55 min. 2620-2690MHz		
SD18-2535R8UUM2	Band7	Tx to Ant	2500MHz - 2570MHz	2.9 max.	2.0 max.	2.2 max.	880MHz - 915MHz 32 min.	1573.37MHz - 1577.47MHz 35 min.	1710MHz - 1785MHz 30 min.	2402MHz - 2442MHz 40 min.	2442MHz - 2457MHz 45 min.	2458MHz - 2467MHz 50 min.	4992MHz - 5140MHz 30 min.	53 min. 2500-2570MHz	−20 to +85°C	−40 to +90°C
		Ant to Rx	2620MHz - 2690MHz	2.8 max.	1.5 max.	2.0 max.	880MHz - 915MHz 37 min.	1710MHz - 1785MHz 35 min.	2402MHz - 2482MHz 41 min.	2500MHz - 2570MHz 45 min.	2775MHz - 6000MHz 35 min.	4900MHz - 5300MHz 47 min.	5300MHz - 5950MHz 40 min.	54 min. 2620-2698MHz		
SD18-0897R8UUQ1	Band8	Tx to Ant	882.4MHz - 912.6MHz	2.7 max. *3 (882.4-912.6MHz)	2.0 max.	2.2 max.	927.4MHz - 957.6MHz 44 min. *3	1573.374MHz - 1577.466MHz 42 min.	1760MHz - 1840MHz 45 min.	2400MHz - 2500MHz 35 min.	2620MHz - 2745MHz 36 min.	4900MHz - 5900MHz 20 min.	—	55 min. 882.4-912.6MHz	−30 to +85°C	−40 to +85°C
		Ant to Rx	925MHz - 960MHz	3.5 max.	2.0 max.	2.2 max.	10MHz - 880MHz 45 min.	882.4MHz - 912.6MHz 45 min. *3	1045MHz - 6000MHz 40 min.	— —	— —	— —	— —	50 min. 927.4-957.6MHz		
SD18-0897R8UUC1	Band8	Tx to Ant	880.24MHz - 914.76MHz	3.0 max.	2.3 max.	2.0 max.	927.4MHz - 957.6MHz 44 min.	1573.374MHz - 1577.466MHz 38 min.	1760MHz - 1840MHz 37 min.	2400MHz - 2500MHz 35 min.	2620MHz - 2745MHz 36 min.	4900MHz - 5900MHz 10 min.	— —	55 min. 880.24-914.76MHz	−20 to +85°C	−40 to +85°C
		Ant to Rx	925MHz - 960MHz	3.5 max.	2.3 max.	2.0 max.	10MHz - 880MHz 45 min.	880.24MHz - 914.76MHz 45 min.	980MHz - 1045MHz 13 min.	1045MHz - 6000MHz 40 min.	— —	— —	— —	50 min. 927.4-957.6MHz		
SD18-0782R8UUB2	Band13	Tx to Ant	777.5MHz - 786.5MHz	3.5 max.	—	2.1 max.	746MHz - 756MHz 42 min.	768MHz - 775MHz 20 min.	1554MHz - 1565MHz 40 min.	— —	— —	— —	— —	50 min. 746-756MHz	−20 to +90°C	−40 to +90°C
		Ant to Rx	746MHz - 756MHz	2.5 max.	—	2.1 max.	777MHz - 787MHz 50 min.	2400MHz - 2500MHz 40 min.	4900MHz - 5950MHz 40 min.	— —	— —	— —	— —	55 min. 777-787MHz		
SD18-1882R8UUC1	Band25	Tx to Ant	1850.48MHz - 1914.52MHz	2.5 max. (1850-1911MHz) 4.0 max. (1911-1915MHz)	2.0 max.	2.0 max.	869MHz - 894MHz 44 min.	1226MHz - 1250MHz 43 min.	1573.4MHz - 1577.5MHz 43 min.	2400MHz - 2700MHz 33 min.	5150MHz - 5350MHz 20 min.	— —	— —	50 min. 1850.25-1914.75MHz	−30 to +85°C	−40 to +85°C
		Ant to Rx	1930.48MHz - 1994.52MHz	3.5 max.	2.0 max.	2.0 max.	777MHz - 787MHz 40 min.	814MHz - 849MHz 40 min.	1850MHz - 1915MHz 45 min.	2400MHz - 2500MHz 40 min.	4900MHz - 5950MHz 40 min.	— —	— —	50 min. *6 1930.48-1994.52MHz		

*1 Operating Temperature of +15 to +85°C *2 Operating Temperature of -20 to +85°C *3 Integrated calculation, WCDMA Modulation (±1.92MHz). Unit : dBint
*4 Integrated calculation, NCDMA Modulation (±0.615MHz). *5 Integrated calculation, LTE Modulation (±2.25MHz) Unit : dBint *6 Operating Temperature of −10 to +85°C

SAW Duplexers
SD18 Series (Unbalanced Type)

Dimensions

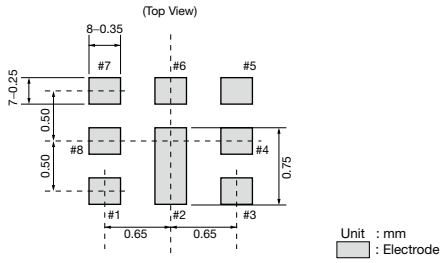




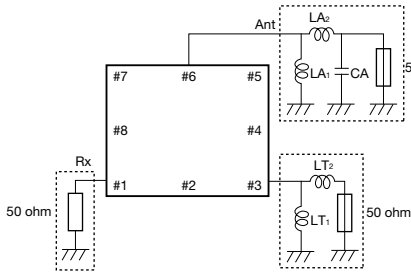
Unit: mm
K : Kyocera logo
***: Identification no.
● : Index mark of pin 1
* : Monthly Code
⋮ : Index mark of ten days
(⋮1-10, ⋮11-20, ⋰ 21-31)
*1: 0.57 max./ SD18-1880R8UUQ1
SD18-1880R8UUC1
SD18-2535R8UUQ1
SD18-2535R8UUM2
SD18-1882R8UUC1
SD18-0897R8UUC1
SD18-0782R8UUB2

PIN No.	Function
#1	Rx
#2	GND
#3	Tx
#4	GND
#5	GND
#6	Ant
#7	GND
#8	GND

Recommended Land Pattern



Test Circuit

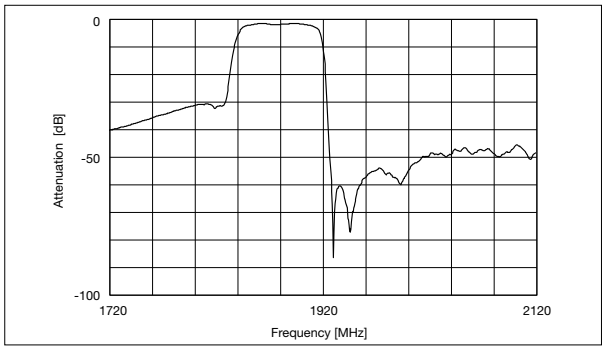


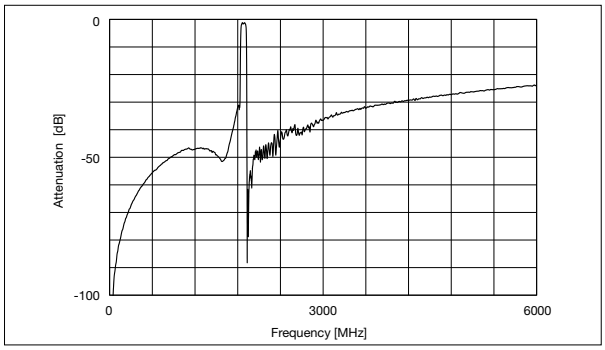
Part Number	LA1[nH]	LA2[nH]	CA[pF]	LT1[nH]	LT2[nH]
SD18-1950R8UUQ1	3.3	–	–	7.5	–
SD18-1880R8UUQ1	3.9	–	–	–	–
SD18-1880R8UUC1	3.3	–	–	–	–
SD18-0836R8UUQ1	8.2	–	–	–	–
SD18-2535R8UUQ1	2.7	–	–	–	–
SD18-2535R8UUM2	2.4	–	–	–	–
SD18-0897R8UUQ1	8.2	–	–	22	–
SD18-0897R8UUC1	8.2	–	–	–	5.6
SD18-0782R8UUB2	–	12	2.7	–	–
SD18-1882R8UUC1	3.6	–	–	–	–

Characteristics

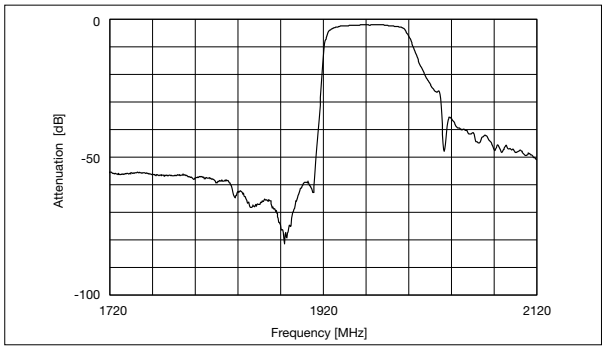
<Band2> Part No.: SD18-1880R8UUQ1

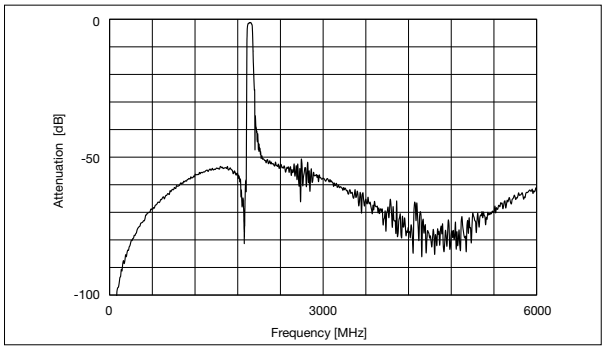
Tx to Ant



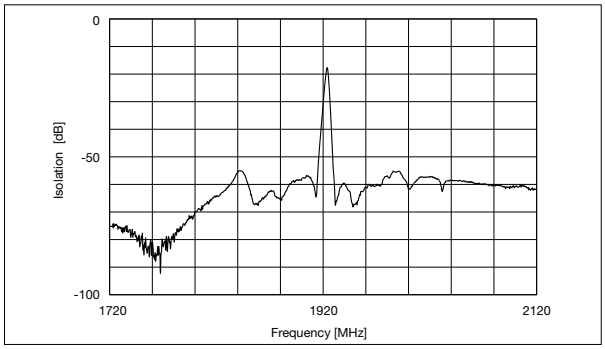


Ant to Rx

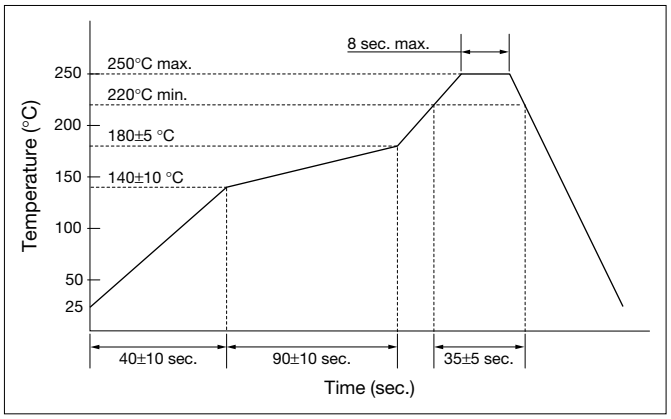




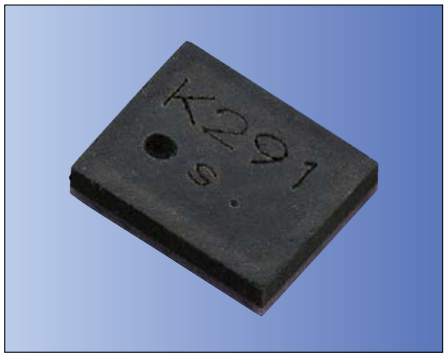
Tx to Rx



Recommended Reflow Profile



SAW Duplexers
SD20 Series (Balanced Type)



RoHS Compliant

Features

- High attenuation
- High isolation
- Rx balanced output type

Applications

- UMTS (W-CDMA)
- CDMA

How to Order

SD 20 - 1950 R 9 UB Q1
① ② ③ ④ ⑤ ⑥ ⑦

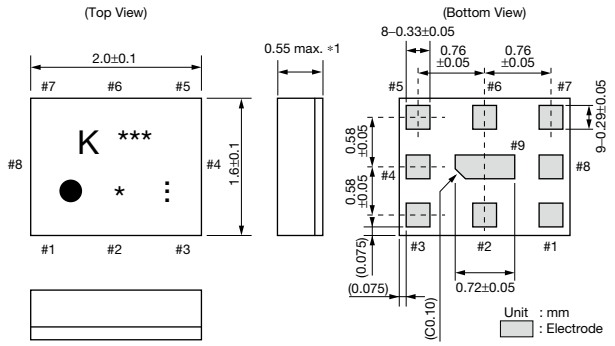
① Type of Product (SAW Duplexer)
② Package Size
③ Nominal Center Frequency
④ Spec.
⑤ Number of Terminals
⑥ Input/ Output
⑦ Custom Specification

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
														Differential Mode	Common Mode		
SD20-1950R9UBQ1	Band1	Tx to Ant	1920.48MHz - 1979.52MHz	2.0 max.	0.5 max.	2.3 max.	843MHz - 894MHz	1573.374MHz - 1577.466MHz	1805MHz - 1865MHz	1865MHz - 1880MHz	2010MHz - 2025MHz	2110MHz - 2170MHz	2400MHz - 2500MHz	1920.48MHz - 1979.52MHz	1920.48MHz - 1979.52MHz	−30 to +85°C	−40 to +85°C
							41 min.	43 min.	30 min.	10 min.	20 min. *1	44 min.	36 min.	55 min.	50 min.		
		Ant to Rx	2110.48MHz - 2169.52MHz	2.5 max.	0.5 max.	2.1 max.	1920MHz - 1980MHz	1980MHz - 2025MHz	2255MHz - 2400MHz	2400MHz - 2484MHz	2484MHz - 6000MHz	—	—	—	—		
							47 min.	20 min.	35 min.	35 min.	35 min.	—	—				
SD20-1880R9UBB1	Band2	Tx to Ant	1850.48MHz - 1909.52MHz	3.0 max.	1.8 max.	2.1 max.	869MHz - 894MHz	1565.42MHz - 1585.42 MHz	1597.552 MHz - 1605.886MHz	1930MHz - 1990MHz	2010MHz - 2025MHz	2110MHz - 2155MHz	2400MHz - 2500MHz	1850.48MHz - 1909.52MHz	1850.48MHz - 1909.52MHz		
							36 min.	38 min.	35 min.	36 min.	30 min.	30 min.	25 min.	40 min.	40 min.		
		Ant to Rx	1930.48MHz - 1989.52MHz	4.6 max.	2.5 max.	2.1 max.	30MHz - 1850MHz	1765MHz - 1835MHz	1850MHz - 1910MHz	2005MHz - 2050MHz	2050MHz - 2075MHz	2400MHz - 2484MHz	2810MHz - 2910MHz	—	—		
							30 min.	35 min.	32 min.	3 min.	25 min.	30 min.	30 min.				
SD20-0836R9UBQ1	Band5	Tx to Ant	824MHz - 849MHz	2.1 max.	1.0 max.	1.9 max.	869MHz - 894MHz	1573.374MHz - 1577.466MHz	1638MHz - 1708MHz	1844.9MHz - 1879.9MHz	1884.5MHz - 1919.6MHz	1930MHz - 1990MHz	2400MHz - 2557MHz	824MHz - 849MHz	824MHz - 849MHz		
							44 min.	45 min.	25 min.	30 min.	30 min.	40 min.	38 min.	55 min.	50 min.		
		Ant to Rx	869MHz - 894MHz	2.2 max.	1.2 max.	2.0 max.	447MHz - 824MHz	824MHz - 849MHz	849MHz - 854MHz	909MHz - 1000MHz	1000MHz - 1850MHz	1850MHz - 1920MHz	1920MHz - 6000MHz	—	—		
							30 min.	45 min.	10 min.	10 min.	28 min.	40 min.	33 min.				
SD20-0897R9UBQ1	Band8	Tx to Ant	882MHz - 912.6MHz	2.7 max. *2	2.1 max.	2.3 max.	927.4MHz - 957.6MHz	1573.374MHz - 1577.466MHz	1760MHz - 1830MHz	2400MHz - 2500MHz	2620MHz - 2745MHz	—	—	882.4MHz - 912.6MHz	882.4MHz - 912.6MHz		
							44 min. *2	37 min.	35 min.	25 min.	25 min.	—	—	55 min. *2	42 min. *2		
		Ant to Rx	925MHz - 960MHz	2.9 max. *2	2.1 max.	2.3 max.	10MHz - 880MHz	882.4MHz - 912.6MHz	1045MHz - 1750MHz	1750MHz - 4810MHz	—	—	—	—	—		
							35 min.	45 min. *2	35 min.	35 min.	—	—	—				

*1 Operating Temperature of 0 to +85°C *2 Integrated over ±1.92MHz around the WCDMA channel center frequency. unit : dBint

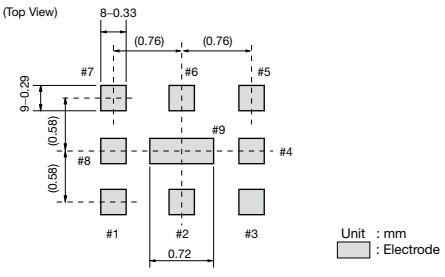
Dimensions



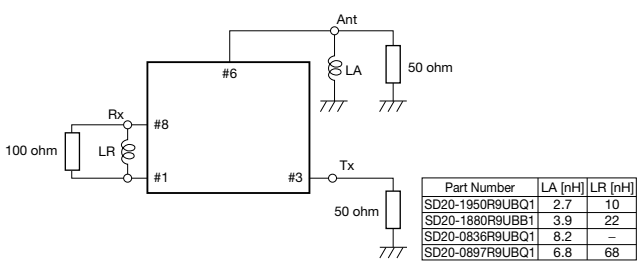
PIN No.	Function
#1	Rx
#2	GND
#3	Tx
#4	GND
#5	GND
#6	Ant
#7	GND
#8	Rx
#9	GND

Unit: mm
K : Kyocera logo
***: Identification no.
* : Monthly Code
⋮ : Index mark of ten days
(⋮1st-10th, ⋮11th-20th, ⋮21st-31st)
*1: 0.57 max./ SD20-1880R9UBB1

Recommended Land Pattern



Test Circuit

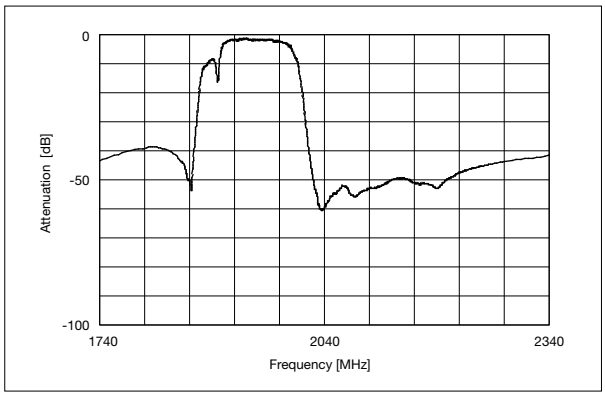


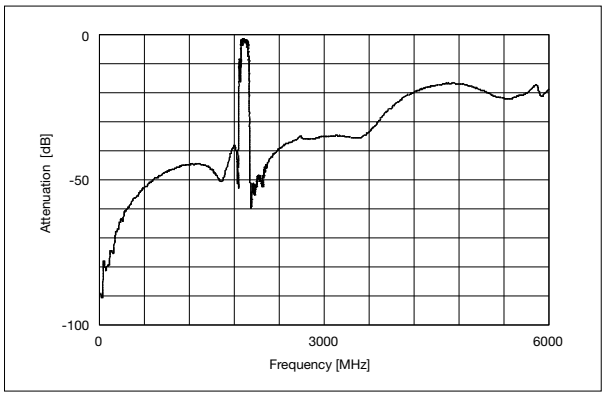
Part Number	LA [nH]	LR [nH]
SD20-1950R9UBQ1	2.7	10
SD20-1880R9UBB1	3.9	22
SD20-0836R9UBQ1	8.2	–
SD20-0897R9UBQ1	6.8	68

Characteristics

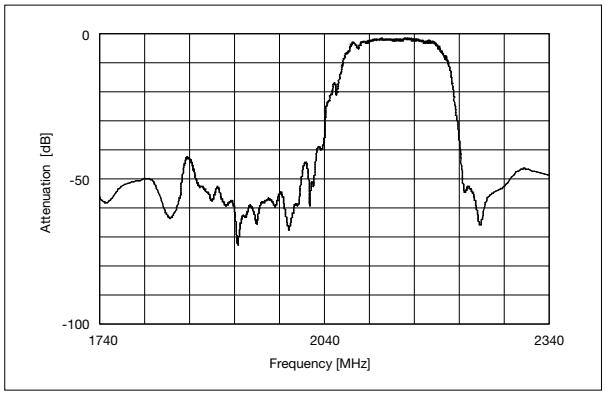
<Band1> Part No.: SD20-1950R9UBQ1

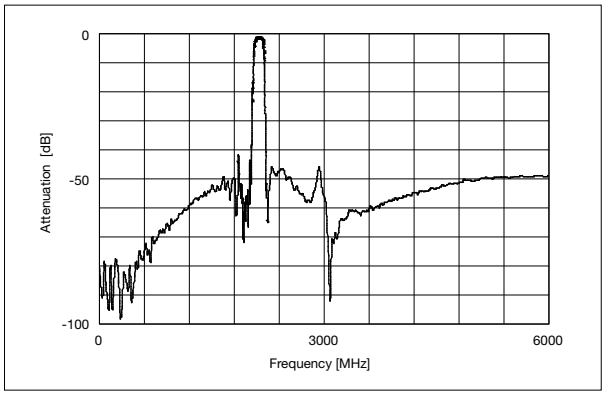
Tx to Ant



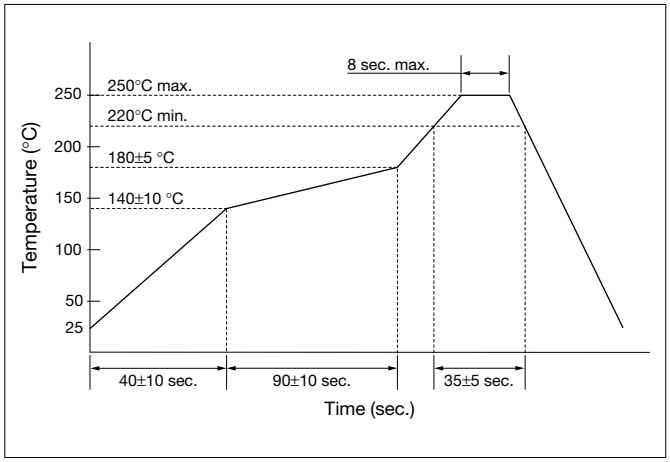


Ant to Rx

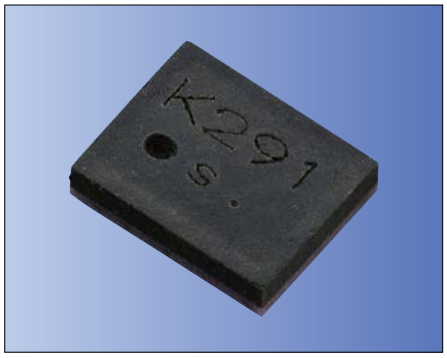




Recommended Reflow Profile



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

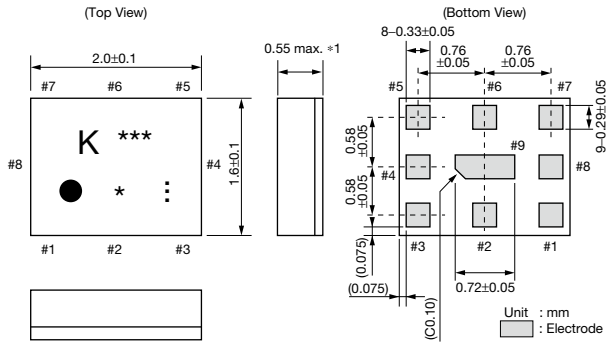
① Type of Product (SAW Duplexer)
② Package Size
③ Nominal Center Frequency
④ Spec.
⑤ Number of Terminals
⑥ Input/ Output
⑦ Custom Specification

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
SD20-1950R9UUQ1	Band1	Tx to Ant	1920.48MHz - 1979.52MHz	2.1 max.	0.5 max.	2.2 max.	843MHz - 894MHz	1573.374MHz - 1577.466MHz	1805MHz - 1865MHz	1865MHz - 1880MHz	2010MHz - 2025MHz	2400MHz - 2500MHz	51 min. (1920.48-1979.52MHz)	−30 to +85°C	−40 to +85°C
							41 min.	44 min.	30 min.	10 min.	20 min. *1	35 min.			
		Ant to Rx	2110.48MHz - 2169.52MHz	2.6 max.	0.5 max.	2.2 max.	1MHz - 1920MHz	1920MHz - 1980MHz	1980MHz - 2025MHz	2255MHz - 2400MHz	2400MHz - 2484MHz	2484MHz - 6000MHz	47 min. (2111.25-2168.75MHz)		
							38 min.	47 min.	35 min.	35 min.	35 min.	35 min.			
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 - 894MHz	1573.374MHz - 1577.466MHz	2400MHz - 2500MHz	4900MHz - 5850MHz	—	—	53 min. *2 (1852.4-1907.6MHz) 52 min. *3 (1851.25-1908.75MHz)	−30 to +85°C	−40 to +85°C
							44 min.	43 min.	35 min.	20 min.	—	—			
		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 - 849MHz	1852.4MHz - 1907.6MHz	1851.25MHz - 1908.75MHz	2400MHz - 2500MHz	4900MHz - 5950MHz	—	51 min. *2 (1932.4-1987.6MHz) 48 min. *3 (1931.25-1988.75MHz)		
							40 min.	48 min. *2	47 min. *3	40 min.	40 min.	—			
SD20-0836R9UUQ1	Band5	Tx to Ant	824MHz - 849MHz	2.1 max.	1.0 max.	2.0 max.	869MHz - 894MHz	1573.374MHz - 1577.466MHz	1638MHz - 1708MHz	2400MHz - 2557MHz	4900MHz - 5950MHz	—	55 min. (824-849MHz)	−30 to +85°C	−40 to +85°C
							48 min.	45 min.	38 min.	36 min.	5 min.	—			
		Ant to Rx	869MHz - 894MHz	2.4 max.	1.0 max.	2.0 max.	447MHz - 824MHz	824MHz - 849MHz	849MHz - 854MHz	909MHz - 979MHz	2400MHz - 2500MHz	4900MHz - 5950MHz	53 min. (869.7-893.37MHz)		
							45 min.	50 min.	30 min.	3 min.	40 min.	25 min.			
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 - 957.6MHz	1573.374MHz - 1577.466MHz	1760MHz - 1880MHz	2400MHz - 2500MHz	2620MHz - 2745MHz	4900MHz - 5950MHz	53 min. (882.4-912.6MHz)	−30 to +85°C	−40 to +85°C
							44 min.	37 min.	30 min.	23 min.	23 min.	15 min.			
		Ant to Rx	925MHz - 960MHz	2.9 max.*2 (927.4-957.6MHz)	1.5 max.	2.2 max.	10MHz - 880MHz	882.4MHz - 912.6MHz	2400MHz - 2500MHz	4900MHz - 5950MHz	—	—	49 min. (927.4-957.6MHz)		
							45 min.	50 min.*2	45 min.	20 min.	—	—			

*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

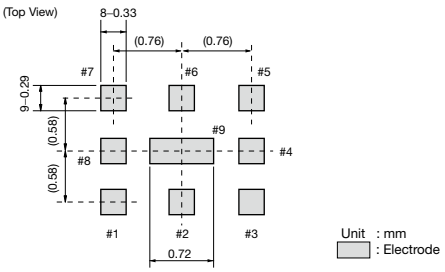
Dimensions



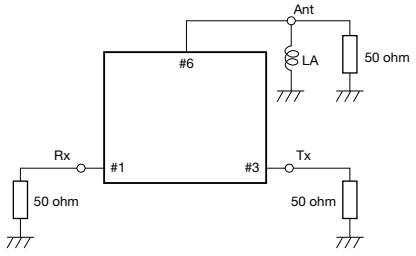
PIN No.	Function
#1	Rx
#2	GND
#3	Tx
#4	GND
#5	GND
#6	Ant
#7	GND
#8	GND
#9	GND

Unit: mm
K : Kyocera logo
***: Identification no.
* : Monthly Code
⋮ : Index mark of ten days
(⋮1st-10th, ⋮11th-20th, ⋮21st-31st)
*1: 0.57 max./ SD20-1880R9UUA1

Recommended Land Pattern



Test Circuit

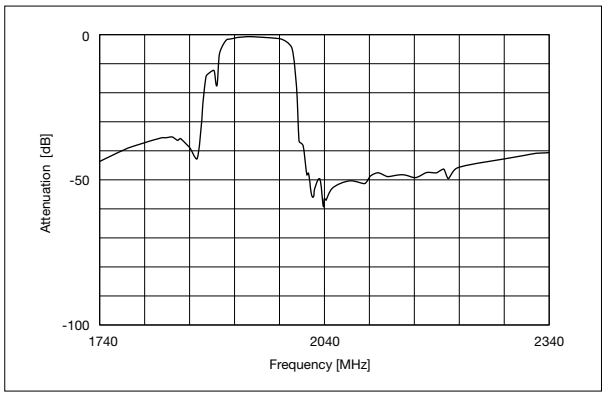


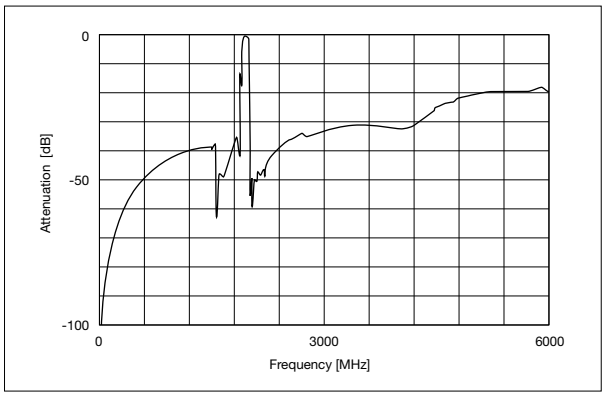
Part Number	LA [nH]
SD20-1950R9UUQ1	2.7
SD20-1880R9UUA1	3.3
SD20-0836R9UUQ1	9.1
SD20-0897R9UUQ1	8.2

Characteristics

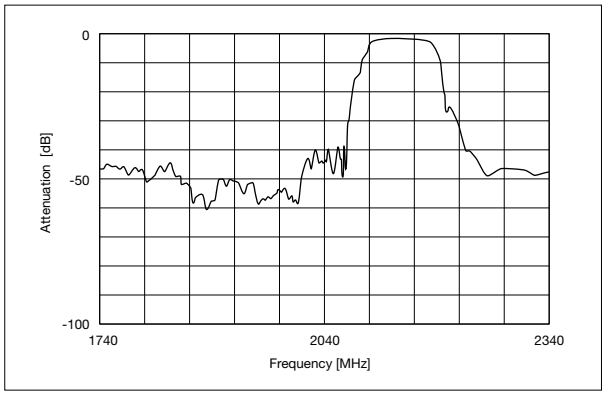
<Band1> Part No.: SD20-1950R9UUQ1

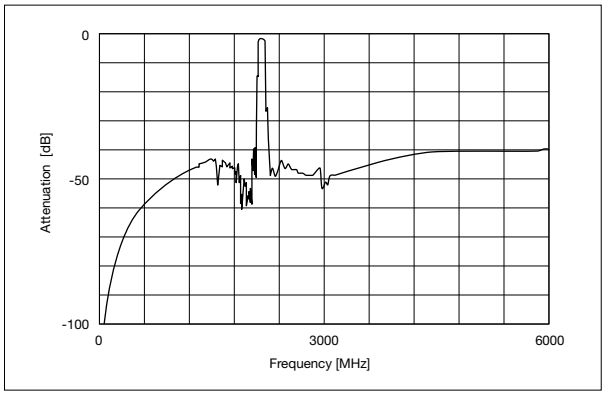
Tx to Ant



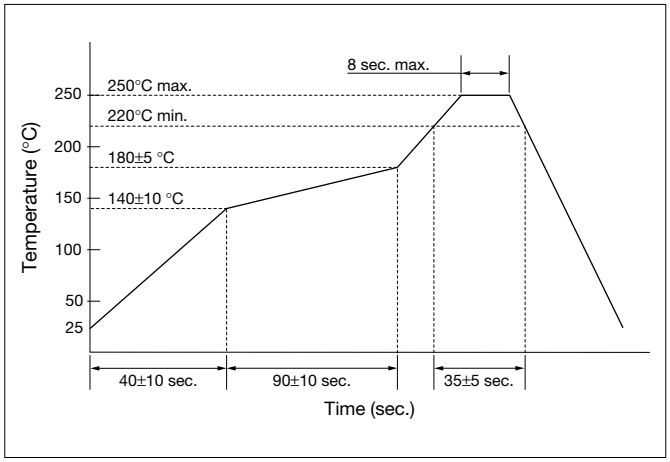


Ant to Rx





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 (Cl_2, H_2S, NH_3, SOx, NOx, 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_2, H_2S, NH_3, SOx, NOx, 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 12months 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 bear 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.

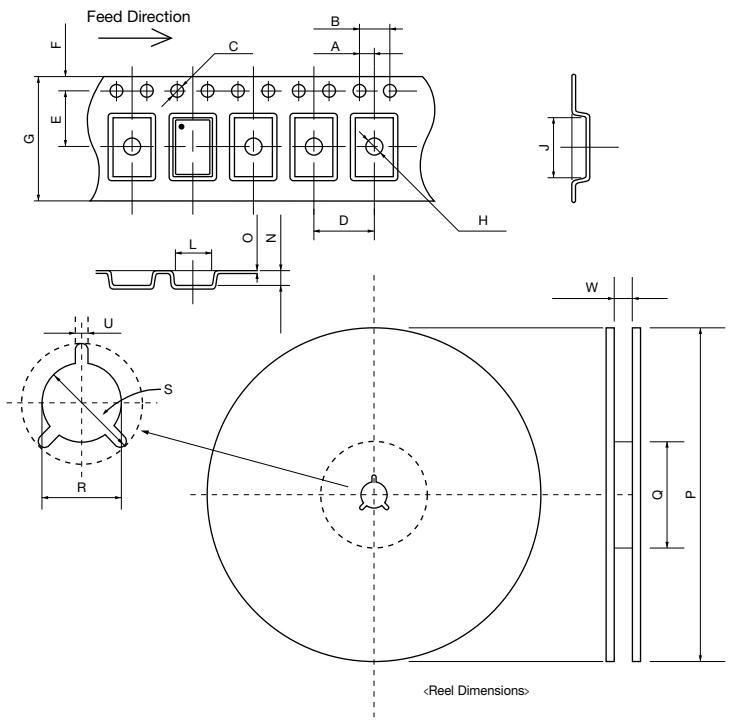
3) Make sure to solder all electrodes to the board, otherwise it may cause lower electrode strength.

Tape & Reel Specifications

■ SAW Duplexers/ SAW Filters

(Unit: mm)

		SAW Duplexers		SAW Filters				
		SD18	SD20	SF14	SF15	SF16	SF18	SF20
TAPE	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
REEL	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



‹Reel Dimensions›