

SAW Duplexers SD18 Series (Balanced Type)



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

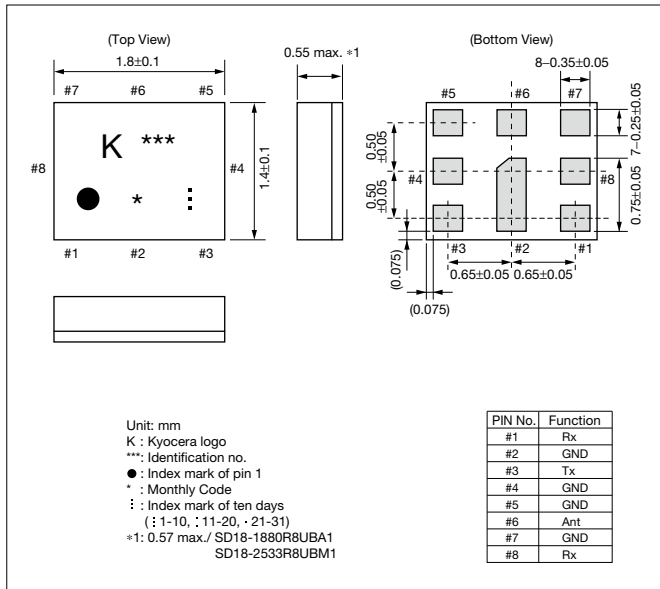
- ① Type of Product (SAW Duplexer)
- ② Package Size
- ③ Nominal Center Frequency
- ④ Spec.
- ⑤ Number of Terminals
- ⑥ Input/ Output
- ⑦ Custom Specification

Specifications

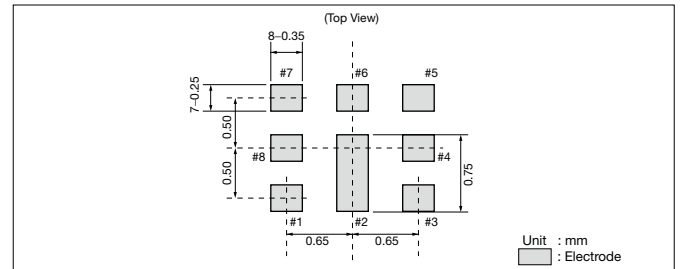
Part No.	Band	Condition	Pass Band Frequency	Insertion Loss (dB)	Pass Band Variation (dB)	VSWR	Absolute Rejection (dB)										Isolation Tx to Rx (dB)	Operating Temperature	Storage Temperature
							Differential Mode	Common Mode											
SD18-1950R8UBQ1	Band1	Tx to Ant	1920.48MHz - 1979.52MHz	2.0 max.	0.5 max.	2.0 max.	843MHz 894MHz 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.	1920.48MHz 1979.52MHz 53 min.	1920.48MHz 1979.52MHz 50 min.	-30 to +85°C	-40 to +85°C		
		Ant to Rx	2110.48MHz - 2169.52MHz	2.5 max.	0.5 max.	2.0 max.	1920MHz 1980MHz 45 min.	1980MHz 2025MHz 15 min.	2255MHz 2400MHz 15 min.	2400MHz 2484MHz 30 min.	2484MHz 6000MHz 35 min.	-	-	-	-				
SD18-1880R8UBA1	Band2	Tx to Ant	1850.48MHz - 1909.52MHz	2.4 max.*2 (1852.4-1907.6MHz) 2.5 max.*3 (1851.25-1902.75MHz)	1.8 max.	2.1 max.	869MHz 894MHz 40 min.	1573.374MHz 1577.466MHz 45 min.	2400MHz 2500MHz 30 min.	5150MHz 5350MHz 20 min.	-	-	-	1852.4MHz 1907.6MHz 53 min.*2	1852.4MHz 1907.6MHz 46 min.*2	-30 to +85°C	-40 to +85°C		
		Ant to Rx	1930.48MHz - 1989.52MHz	3.4 max.*2 (1932.4-1987.6MHz) 3.5 max.*3 (1931.25-1982.75MHz)	2.5 max.	2.0 max.	1MHz 1850MHz 30 min.	1765MHz 1835MHz 35 min.	1852.4MHz 1907.6MHz 48 min.*2	1851.25MHz 1908.75MHz 47 min.*3	2400MHz 2484MHz 30 min.	5625MHz 5815MHz 30 min.	-	-	-				
SD18-0836R8UBQ1	Band5	Tx to Ant	824MHz - 849MHz	2.0 max.	1.0 max.	2.0 max.	869MHz 894MHz 44 min.	1573.374MHz 1577.466MHz 45 min.	1638MHz 1708MHz 40 min.	1844.9MHz 1879.9MHz 30 min.	1884.5MHz 1919.6MHz 30 min.	1930MHz 1990MHz 44 min.	2400MHz 2557MHz 45 min.	824MHz 849MHz 55 min.	824MHz 849MHz 50 min.	-30 to +85°C	-40 to +85°C		
		Ant to Rx	869MHz - 894MHz	2.2 max.	1.2 max.	2.0 max.	824MHz 849MHz 30 min.	849MHz 854MHz 45 min.	854MHz 1000MHz 10 min.	1850MHz 1850MHz 28 min.	1920MHz 1920MHz 40 min.	6000MHz 6000MHz 35 min.	-	-	-				
SD18-2535R8UBM1	Band7	Tx to Ant	2500MHz - 2570MHz	3.0 max.	2.0 max.	2.0 max.	925MHz 960MHz 30 min.	1573.374MHz 1577.466MHz 32 min.	1805MHz 1830MHz 35 min.	1710MHz 1785MHz 28 min.	2402MHz 2442MHz 30 min.	2402MHz 2442MHz 40 min.	2500MHz 2500MHz 45 min.	-	-	-20 to +85°C	-40 to +85°C		
		Ant to Rx	2620MHz - 2690MHz	2.5 max.	1.5 max.	2.0 max.	880MHz 915MHz 37 min.	1710MHz 1785MHz 35 min.	2402MHz 2482MHz 41 min.	2500MHz 2570MHz 45 min.	2775MHz 3000MHz 35 min.	4900MHz 5300MHz 47 min.	5300MHz 5950MHz 40 min.	2620MHz 2690MHz 51 min.	2500MHz 2570MHz 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 44 min.*2	1573.374MHz 1577.466MHz 43 min.*2	1760MHz 1830MHz 38 min.	2400MHz 2500MHz 35 min.	2620MHz 2745MHz 35 min.	-	-	882.4MHz 912.6MHz 55 min.*2	882.4MHz 912.6MHz 49 min.*2	-20 to +85°C	-40 to +85°C		
		Ant to Rx	925MHz - 960MHz	3.3 max.	2.0 max.	2.0 max.	10MHz 880MHz 35 min.	882.4MHz 912.6MHz 45 min.*2	1045MHz 1750MHz 15 min.	1750MHz 4810MHz 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

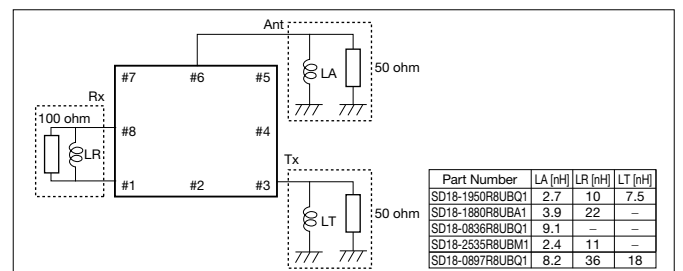
Dimensions



Recommended Land Pattern



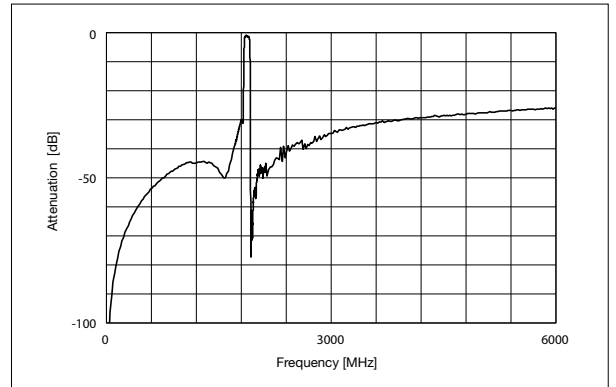
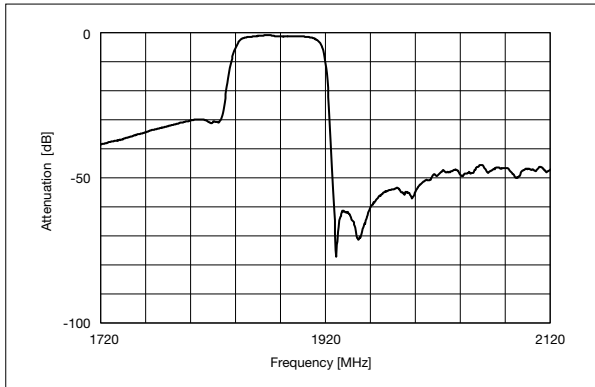
Test Circuit



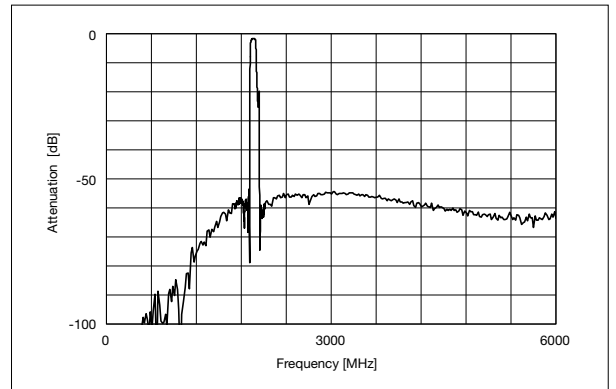
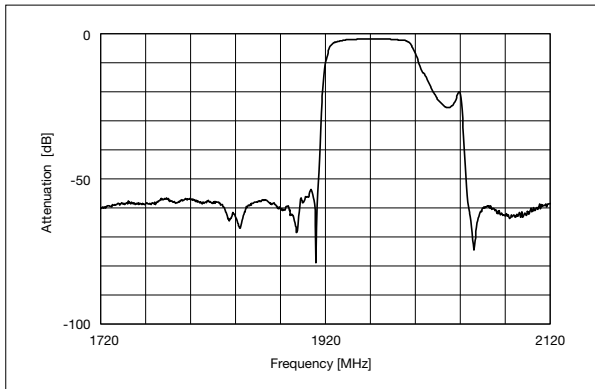
Characteristics

<Band2> Part No.: SD18-1880R8UBA1

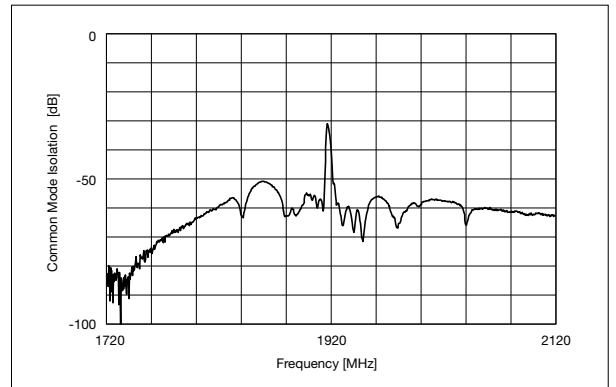
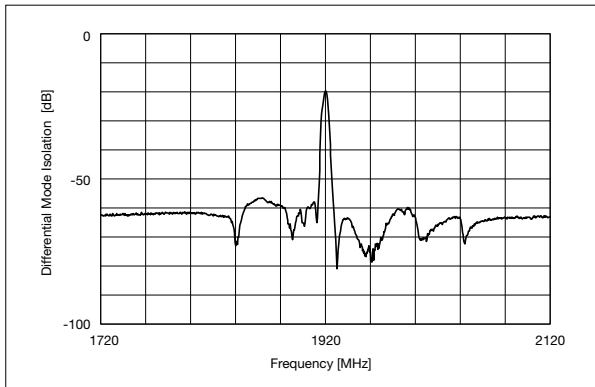
Tx to Ant



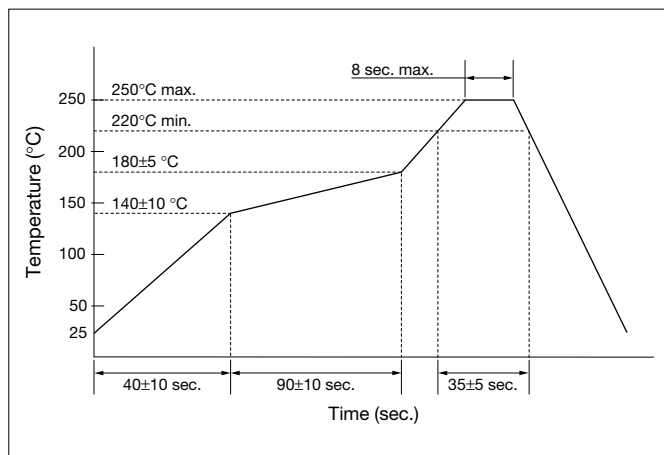
Ant to Rx



Tx to Rx



Recommended Reflow Profile



SAW Duplexers SD18 Series (Unbalanced Type)



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. 42 min.	1573.374MHz 1577.466MHz 44 min. 42 min.	1805MHz 1865MHz 25 min. 25 min.	1880MHz 1880MHz 10 min. 5 min. *1	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. 15 min.	1980MHz 2015MHz 30 min. 15 min.	2015MHz 2050MHz 20 min. 40 min.	2050MHz 2075MHz 20 min. 40 min.	2255MHz 6000MHz — —	— — — —	— — — —	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. 43 min.	1573.374MHz 1577.466MHz 44 min. 43 min.	1930MHz 1990MHz 44 min. *2 35 min.	2400MHz 2500MHz 35 min. 20 min.	4900MHz 5850MHz 40 min. 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. 45 min.	1850MHz 1910MHz 40 min. 45 min.	2400MHz 2500MHz 40 min. 40 min.	4900MHz 5950MHz 40 min. 40 min.	— — — —	— — — —	— — — —	53 min. *2 1930.25-1989.75MHz			
SD18-1880R8UUC1	Band2	Tx to Ant	1850.48MHz - 1909.52MHz	2.4 max. *3 (1852.4-1907.8MHz) 2.5 max. *4 (1851.25-1908.75MHz)	1.8 max.	2.1 max.	869MHz 894MHz 44 min. 43 min.	1573.374MHz 1577.466MHz 44 min. 43 min.	2400MHz 2500MHz 35 min. 20 min.	4900MHz 5850MHz — —	— — — —	— — — —	— — — —	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 (1932.4-1987.2MHz) 3.9 max. *4 (1931.25-1988.75MHz)	2.5 max.	2.1 max.	824MHz 849MHz 40 min. 40 min.	2400MHz 2500MHz 40 min. 40 min.	4900MHz 5950MHz — —	— — — —	— — — —	— — — —	— — — —	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. 42 min.	1573.374MHz 1577.466MHz 44 min. 42 min.	1638MHz 1708MHz 35 min. 30 min.	1844.9MHz 1879.9MHz 30 min. 30 min.	1884.5MHz 1919.6MHz 30 min. 44 min.	1930MHz 1990MHz 44 min. 45 min.	2400MHz 2557MHz — —	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.	824MHz 849MHz 40 min. 45 min.	849MHz 854MHz 30 min. 8 min.	854MHz 979MHz 8 min. 40 min.	979MHz 2500MHz 40 min. 40 min.	2400MHz 4900MHz — —	— — — —	— — — —	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. 35 min.	1573.374MHz 1577.466MHz 30 min. 35 min.	1710MHz 1785MHz 30 min. 40 min.	1805MHz 1880MHz 40 min. 40 min.	2402MHz 2470MHz 40 min. 40 min.	2402MHz 2460MHz 45 min. 40 min.	4900MHz 5300MHz 40 min. 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. 45 min.	1710MHz 1785MHz 40 min. 45 min.	2400MHz 2500MHz 30 min. 40 min.	2402MHz 2470MHz 40 min. 45 min.	2500MHz 2570MHz 45 min. 47 min.	5300MHz 5950MHz 40 min. 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. 35 min.	1573.37MHz 1577.47MHz 30 min. 30 min.	1710MHz 1785MHz 30 min. 40 min.	2402MHz 2442MHz 40 min. 45 min.	2442MHz 2457MHz 45 min. 50 min.	2458MHz 2467MHz 30 min. 30 min.	4992MHz 5140MHz — —	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. 35 min.	1710MHz 1785MHz 35 min. 41 min.	2402MHz 2482MHz 41 min. 45 min.	2500MHz 2570MHz 45 min. 35 min.	2775MHz 6000MHz 35 min. 47 min.	4900MHz 5300MHz 40 min. 40 min.	5300MHz 5950MHz — —	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 882.4MHz 45 min. 45 min. *3	882.4MHz 912.6MHz 45 min. 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 880.24MHz 45 min. 45 min.	880.24MHz 914.76MHz 13 min. 40 min.	1045MHz 1045MHz — —	6000MHz — — —	— — — —	— — — —	— — — —	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. 20 min.	768MHz 775MHz 20 min. 40 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. 40 min.	2400MHz 2500MHz 40 min. 40 min.	4900MHz 5900MHz — —	— — — —	— — — —	— — — —	— — — —	55 min. 777-787MHz			
SD18-1882R8UUC1	Band25	Tx to Ant	1850.48MHz - 1914.52MHz	2.5 max. (1852.4-1911MHz) 4.0 max. (1911-1915MHz)	2.0 max.	2.0 max.	869MHz 894MHz 44 min. 43 min.	1226MHz 1250MHz 43 min. 43 min.	1573.4MHz 1577.5MHz 33 min. 20 min.	2400MHz 2700MHz 33 min. 20 min.	5150MHz 5350MHz — —	— — — —	— — — —	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. 40 min.	814MHz 849MHz 40 min. 40 min.	1850MHz 1915MHz 40 min. 40 min.	2400MHz 2500MHz 40 min. 40 min.	4900MHz 5950MHz — —	— — — —	— — — —	50 min. *6 1930.48-1994.52MHz			

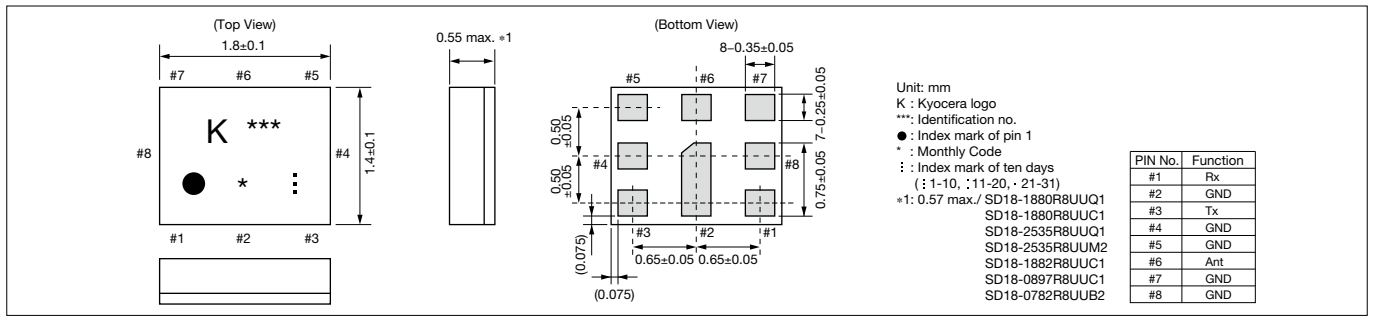
*1 Operating Temperature of +15 to +85°C *2 Operating Temperature of -20 to +85°C *3 Integrated calculation, WCDMA Modulation (±1.92MHz). Unit : dBint

*4 Integrated calculation, NCDMA Modulation (±0.615MHz). *5 Integrated calculation, LTE Modulation (±2.25MHz) Unit : dBint *6 Operating Temperature of -10 to +85°C

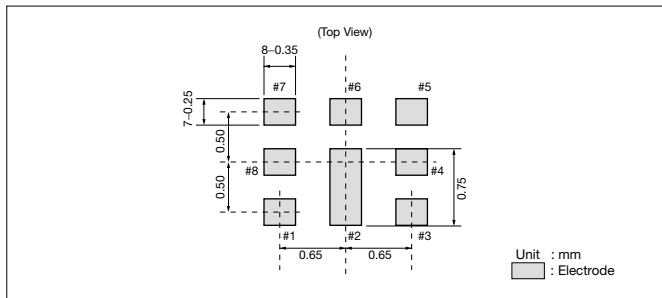
SAW Duplexers SD18 Series (Unbalanced Type)



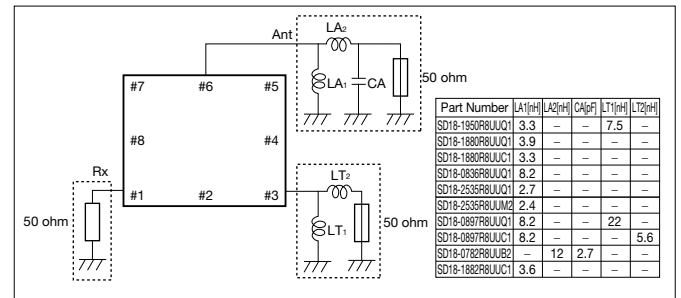
Dimensions



Recommended Land Pattern

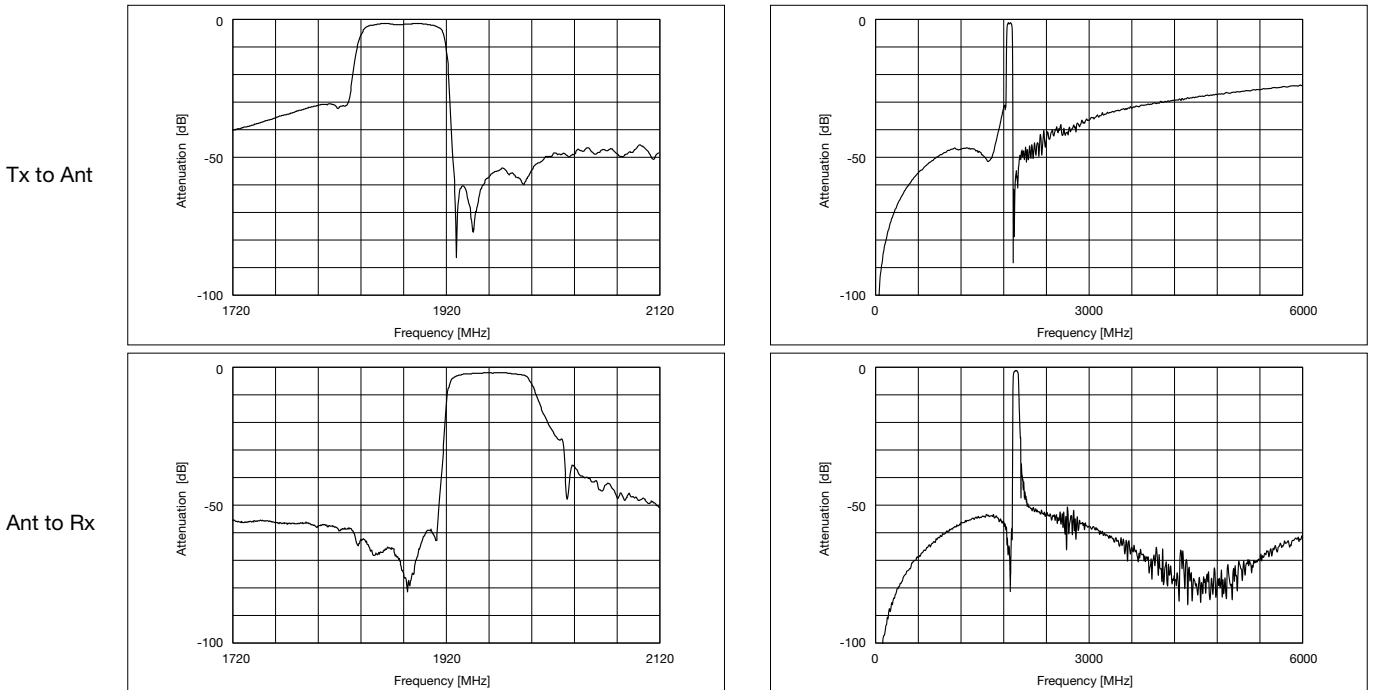


Test Circuit

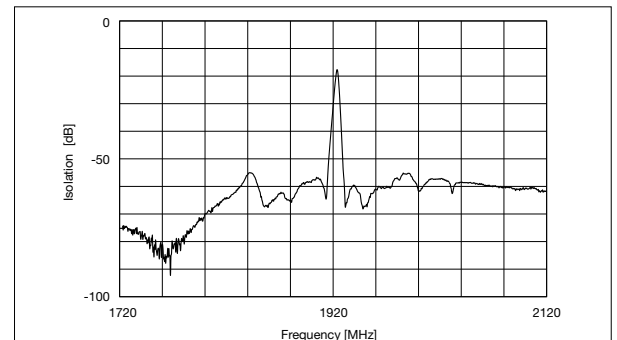
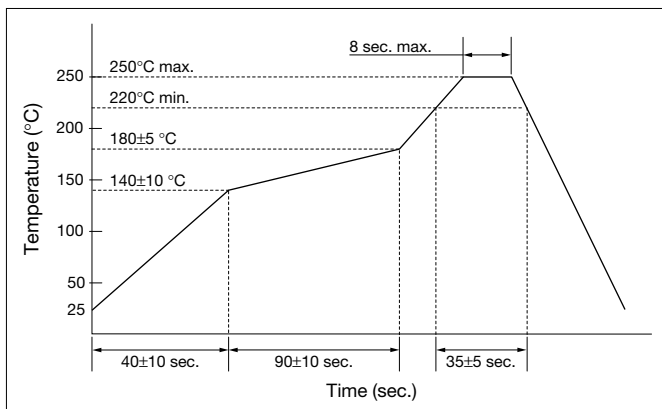


Characteristics

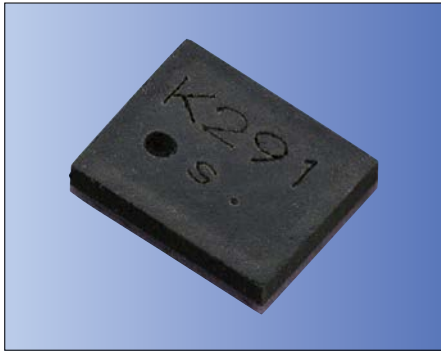
<Band2> Part No.: SD18-1880R8UUQ1



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

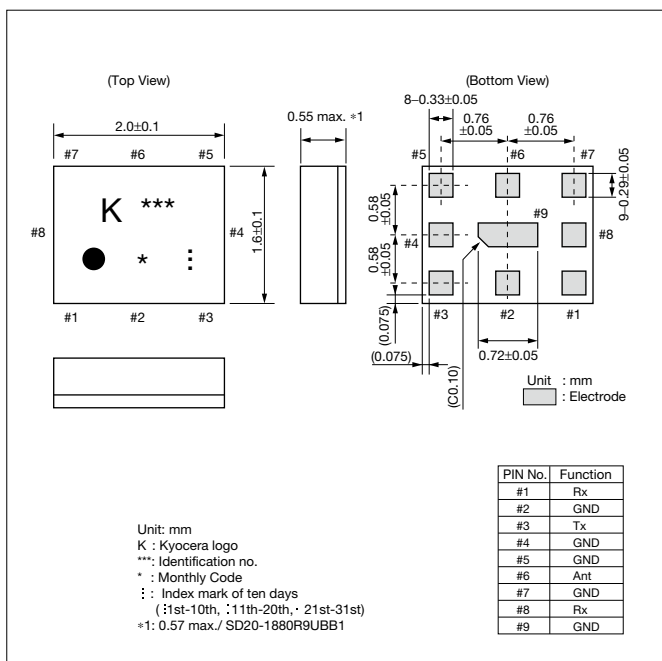
- ① Type of Product (SAW Duplexer)
- ② Package Size
- ③ Nominal Center Frequency
- ④ Spec.
- ⑤ Number of Terminals
- ⑥ Input/ Output
- ⑦ Custom Specification

Specifications

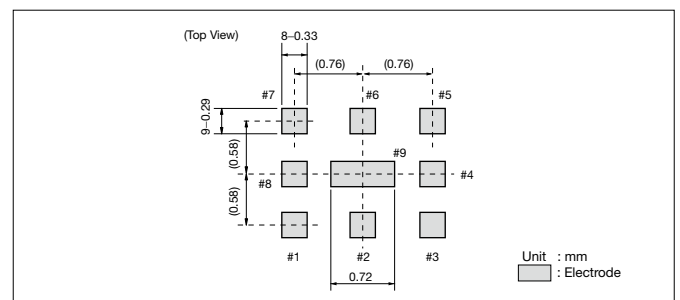
Part No.	Band	Condition	Pass Band Frequency	Insertion Loss (dB)	Pass Band Variation (dB)	VSWR	Absolute Rejection (dB)										Isolation Tx to Rx (dB)		Operating Temperature	Storage Temperature
							843MHz	1573.374MHz	1805MHz	1865MHz	2010MHz	2110MHz	2400MHz	1920.48MHz	1920.48MHz	Differential Mode	Common Mode			
SD20-1950R9UBQ1	Band1	Tx to Ant	1920.48MHz - 1979.52MHz	2.0 max.	0.5 max.	2.3 max.	843MHz 894MHz 41 min.	1573.374MHz 1577.466MHz 43 min.	1805MHz 1865MHz 30 min.	1865MHz 1880MHz 10 min.	2010MHz 2025MHz 20 min. *1	2110MHz 2170MHz 44 min.	2400MHz 2500MHz 36 min.	1920.48MHz 1979.52MHz 55 min.	1920.48MHz 1979.52MHz 50 min.					
		Ant to Rx	2110.48MHz - 2169.52MHz	2.5 max.	0.5 max.	2.1 max.	1920MHz 1980MHz 47 min.	1980MHz 2025MHz 20 min.	2255MHz 2400MHz 35 min.	2400MHz 2484MHz 35 min.	2484MHz 6000MHz -	6000MHz -	-	-	-			-		
SD20-1880R9UBB1	Band2	Tx to Ant	1850.48MHz - 1909.52MHz	3.0 max.	1.8 max.	2.1 max.	869MHz 894MHz 36 min.	1565.42MHz 1585.42 MHz 38 min.	1597.552 MHz 1605.886MHz 35 min.	1930MHz 1990MHz 36 min.	2010MHz 2025MHz 30 min.	2110MHz 2155MHz 30 min.	2400MHz 2500MHz 25 min.	1850.48MHz 1909.52MHz 40 min.	1850.48MHz 1909.52MHz 40 min.	-30 to +85°C	-40 to +85°C			
		Ant to Rx	1930.48MHz - 1989.52MHz	4.6 max.	2.5 max.	2.1 max.	30MHz 1850MHz 30 min.	1765MHz 1835MHz 35 min.	1850MHz 1910MHz 32 min.	2005MHz 2050MHz 3 min.	2050MHz 2075MHz 25 min.	2400MHz 2484MHz 30 min.	2810MHz 2910MHz 30 min.	-	-			-		
SD20-0836R9UBQ1	Band5	Tx to Ant	824MHz - 849MHz	2.1 max.	1.0 max.	1.9 max.	869MHz 894MHz 44 min.	1573.374MHz 1577.466MHz 45 min.	1638MHz 1708MHz 25 min.	1844.9MHz 1879.9MHz 30 min.	1884.5MHz 1919.6MHz 30 min.	1930MHz 1990MHz 40 min.	2400MHz 2557MHz 38 min.	824MHz 849MHz 55 min.	824MHz 849MHz 50 min.					
		Ant to Rx	869MHz - 894MHz	2.2 max.	1.2 max.	2.0 max.	447MHz 824MHz 30 min.	824MHz 849MHz 45 min.	849MHz 854MHz 10 min.	909MHz 1000MHz 10 min.	1000MHz 1850MHz 28 min.	1850MHz 1920MHz 40 min.	1920MHz 6000MHz 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 44 min. *2	1573.374MHz 1577.466MHz 37 min.	1760MHz 1830MHz 35 min.	2400MHz 2500MHz 25 min.	2620MHz 2745MHz 25 min.	-	-	882.4MHz 912.6MHz 55 min. *2	882.4MHz 912.6MHz 42 min. *2					
		Ant to Rx	925MHz - 960MHz	2.9 max. *2	2.1 max.	2.3 max.	10MHz 880MHz 35 min.	882.4MHz 912.6MHz 45 min. *2	1045MHz 1750MHz 35 min.	1750MHz 4810MHz -	4810MHz -	-	-	-	-					

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

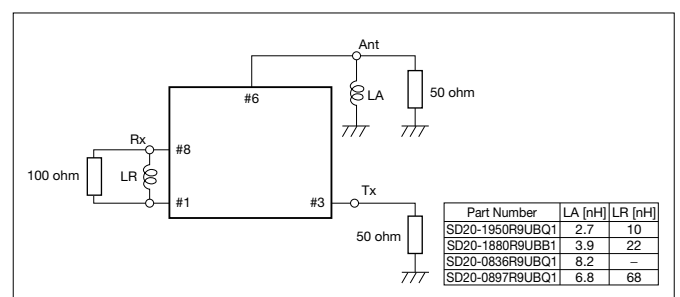
Dimensions



Recommended Land Pattern



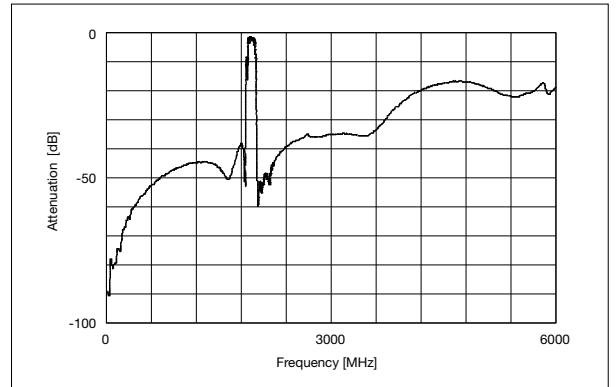
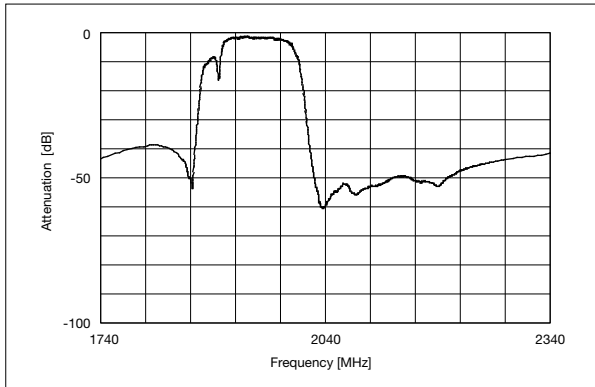
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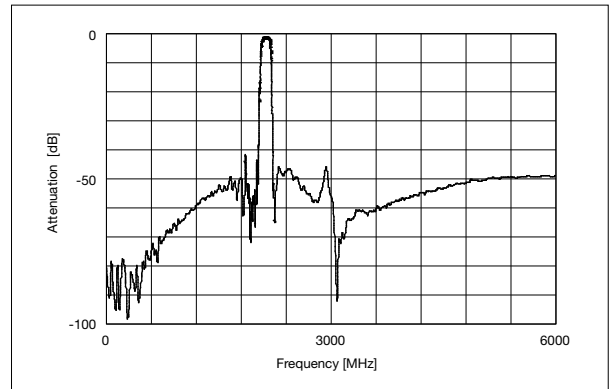
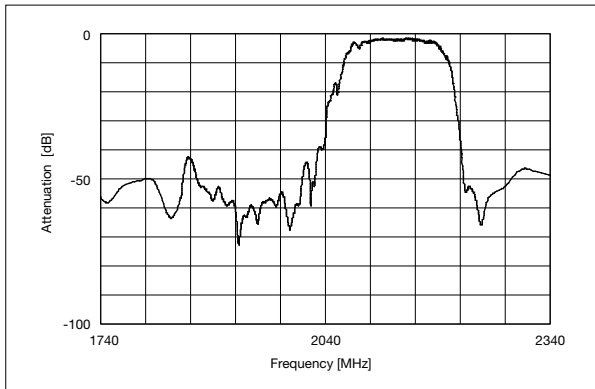
Characteristics

<Band1> Part No.: SD20-1950R9UBQ1

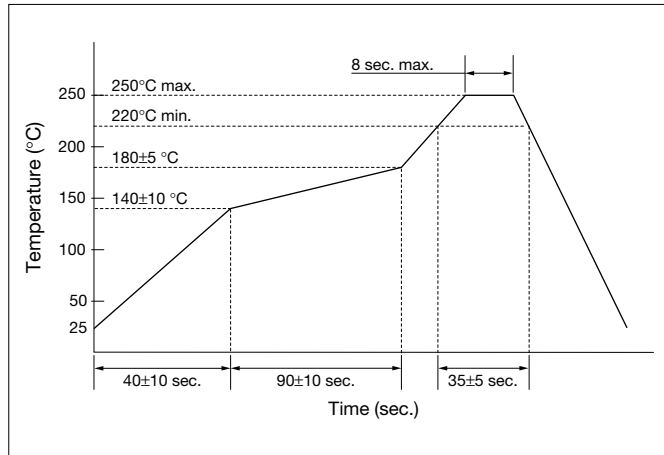
Tx to Ant



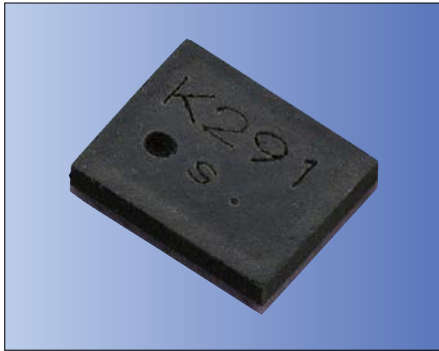
Ant to Rx



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

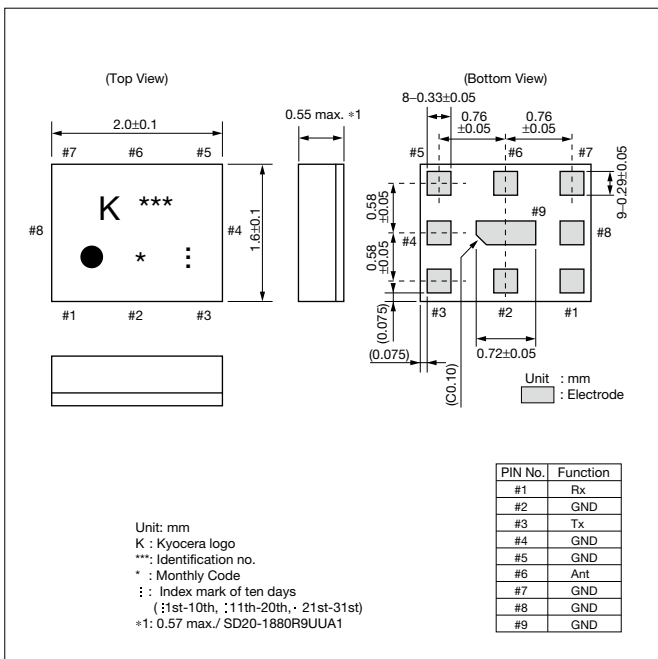
Specifications

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
							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 894MHz	1573.374MHz 1577.466MHz	1805MHz 1865MHz	1865MHz 1880MHz	2010MHz 2025MHz	2400MHz 2500MHz	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.	1920MHz 38 min.	1920MHz 47 min.	1980MHz 35 min.	2025MHz 35 min.	2400MHz 35 min.	2484MHz 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
		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 40 min.	1852.4MHz 48 min. *2	1851.25MHz 47 min. *3	2400MHz 40 min.	4900MHz 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
		Ant to Rx	869MHz - 894MHz	2.4 max.	1.0 max.	2.0 max.	447MHz 45 min.	824MHz 50 min.	849MHz 30 min.	849MHz 30 min.	909MHz 3 min.	2400MHz 40 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
		Ant to Rx	925MHz - 960MHz	2.9 max. *2 (927.4- 957.6MHz)	1.5 max.	2.2 max.	10MHz 45 min.	882.4MHz 50 min. *2	2400MHz 45 min.	4900MHz 20 min.	— —	— —			

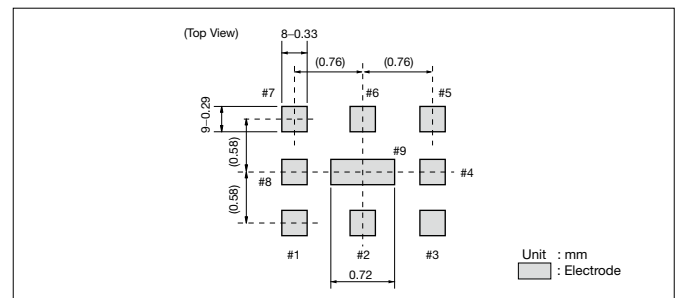
*1 Operating Temperature of +15 to +85°C *2 Integrated calculation, WCDMA Modulation (±1.92MHz). Unit : dBint

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

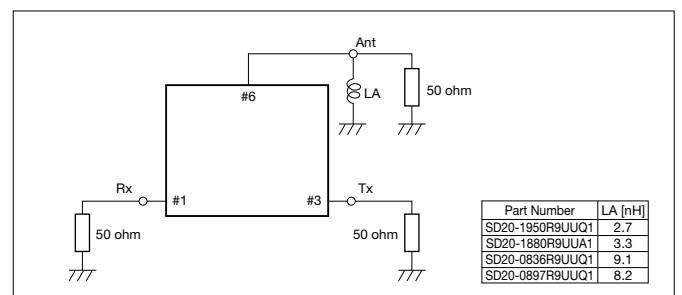
Dimensions



Recommended Land Pattern



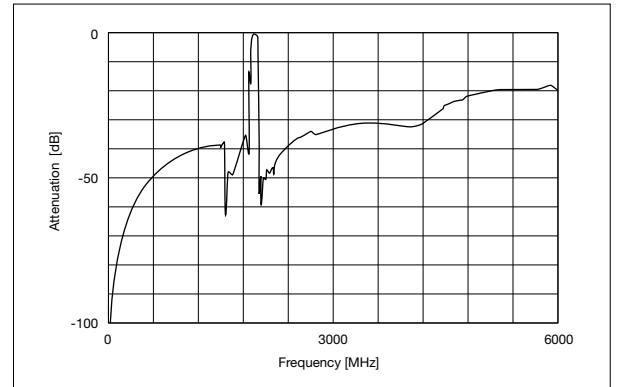
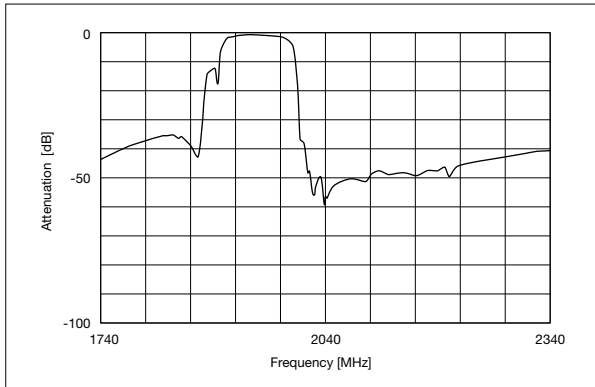
Test Circuit



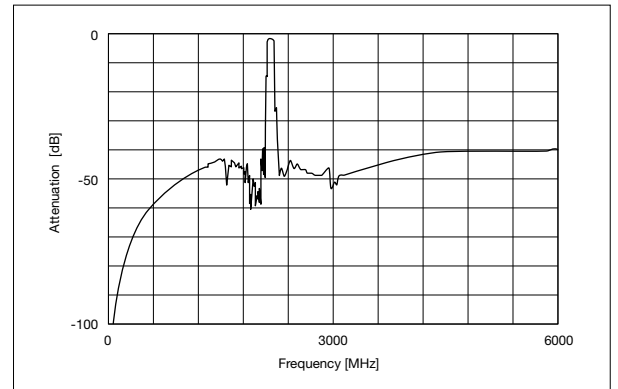
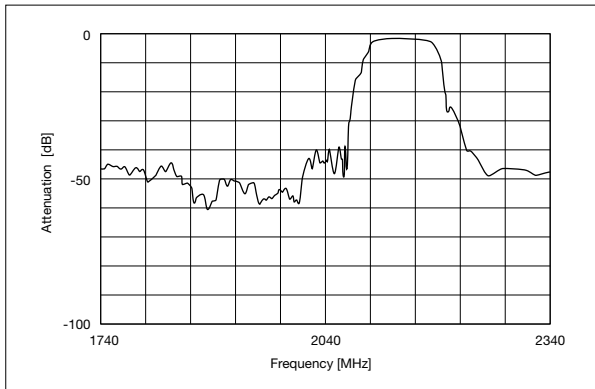
Characteristics

<Band1> Part No.: SD20-1950R9UUQ1

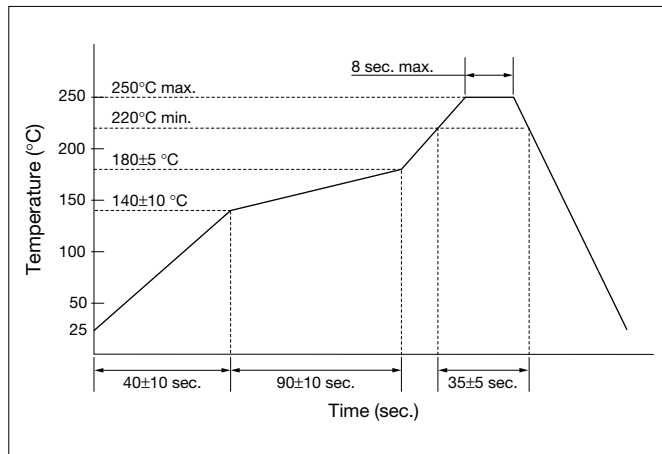
Tx to Ant



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

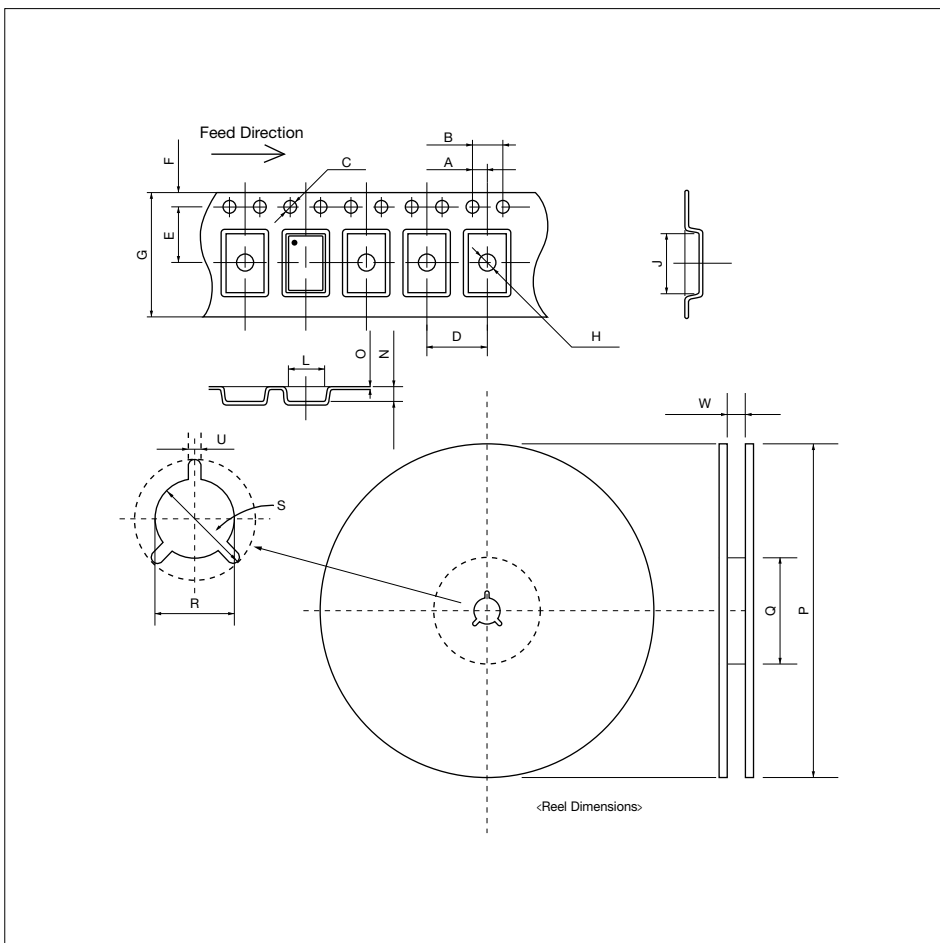
- 1) Place products in the place to avoid stress from bending and camber of the board.
There may be a large stress or shock when the product is placed near the connection parts with other outer parts.
- 2) Please do not apply larger stress greater than the one loaded in the environmental test when mounting 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



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