

# Datasheet of SAW Quadplexer 2016 Band25,66,70 Unbalanced

KYOCERA Part No. : SQ20-1745K6SUA1

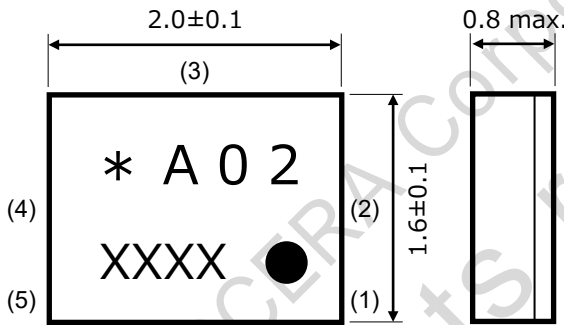
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### Rating

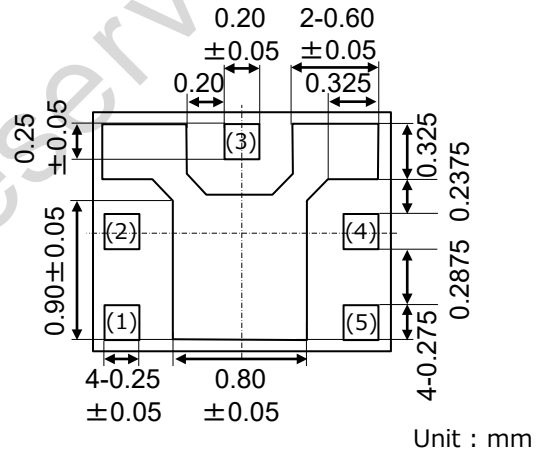
Items	Rating	Unit	Note
Operating Temperature Range	-30 to +85	deg.C	
Storage Temperature Range	-40 to +85	deg.C	
Max Input Power	Tx Band	+30.5	5,000Hours,DFT-s-OFDM-QPSK,Ta=50deg.C
		+29	5,000Hours,CP-OFDM-QPSK,Ta=50deg.C
ESD Level	Machine Model	50	Complied to JESD22-A115
Moisture Sensitivity Level		3	Complied to J-STD-033B.1
Tx Port Nominal Impedance	Band25	50+1.5nH	ohm Unbalance
	Band66+70	50+3.6nH	ohm Unbalance
Ant. Port Nominal Impedance		50	ohm Unbalance
Rx Port Nominal Impedance	Band25+70	50+2.8nH//1.0pF	ohm Unbalance
	Band66	50+0.3nH//1.5pF	ohm Unbalance

### Dimensions

(Top View)



(Bottom View)



Unit : mm

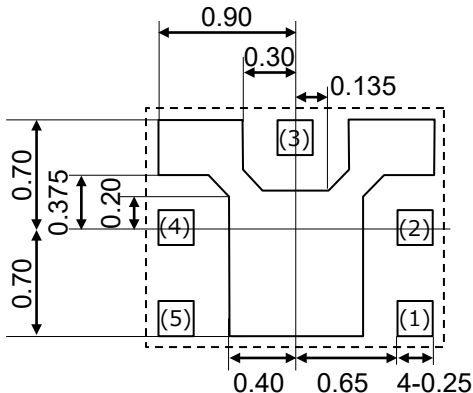
- Unit : mm  
 \* : Identification mark  
 A02 : Identification no.  
 ● : Index mark of pin 1  
 XXXX : Production code

#### Pin allocation

- (1) : B66+70 Tx  
 (2) : B25 Tx  
 (3) : Antenna  
 (4) : B66 Rx  
 (5) : B25+70 Rx  
 Others : GND

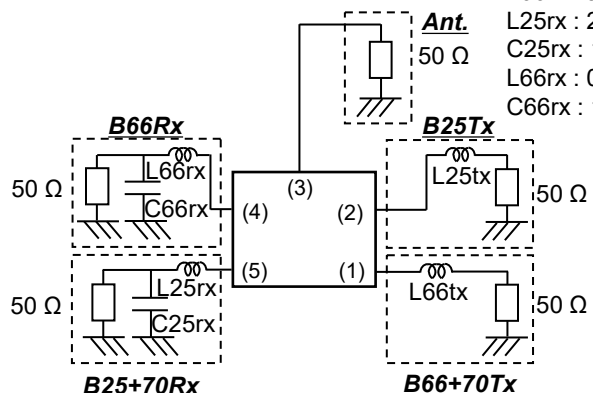
### Recommendable Land Pattern

(Top View) Unit : mm



### Measurement Circuit

(Top View)



- L25tx : 1.5 nH(Ideal)  
 L66tx : 3.6 nH(Ideal)  
 L25rx : 2.8 nH(Ideal)  
 C25rx : 1.0 pF(Ideal)  
 L66rx : 0.3nH(Ideal)  
 C66rx : 1.5 pF(Ideal)

## Electrical Characteristics

Items		Frequency Range [MHz]	Unit	Specification			Notes	
				Min.	Typ.	Max.		
Band25 Tx to ANT	Insertion Loss	1850.25 - 1911	dB	-	1.9	2.8		
		1911 - 1914.75	dB	-	2.2	3.8		
	Passband Ripple	1850.25 - 1914.75	dB	-	1.1	2.8		
	VSWR	Tx	1850.25 - 1914.75	-	-	1.4	2.5	
		Ant	1850.25 - 1914.75	-	-	1.4	2.5	
	Attenuation	10 - 728	dB	30	74	-		
		617 - 652	dB	40	76	-		
		728 - 768	dB	44	72	-		
		869 - 894	dB	44	71	-		
		1166 - 1186	dB	43	67	-		
		1205 - 1250	dB	43	67	-		
		1559 - 1608	dB	43	60	-		
		1930.25 - 1994.75	dB	40	52	-	B25 Rx	
		1995 - 2020	dB	44	59	-	B70 Rx	
		2110 - 2200	dB	44	60	-	B66 Rx	
2350 - 2360		dB	40	61	-			
2400 - 2485		dB	35	58	-			
3700 - 3830		dB	35	65	-	2H		
4900 - 5950	dB	35	51	-				
5550 - 5745	dB	35	53	-	3H			
Band25 ANT to Rx	Insertion Loss	1930.25 - 1994.75	dB	-	2.9	3.8		
	Passband Ripple	1930.25 - 1994.75	dB	-	1.8	2.8		
	VSWR	Ant	1930.25 - 1994.75	-	-	1.5	2.5	
		Rx	1930.25 - 1994.75	-	-	1.7	2.5	
	Attenuation	300 - 310	dB	50	80	-		
		997.5 - 1010	dB	40	63	-		
		1395 - 1400	dB	40	59	-		
		1695 - 1710	dB	45	60	-	B70 Tx	
		1710 - 1780	dB	45	60	-	B66 Tx	
		1850.25 - 1914.75	dB	40	59	-	B25 Tx	
2305 - 2315		dB	45	49	-			
2400 - 2500		dB	45	55	-			
3860.5 - 3989.5		dB	45	60	-	2H		
4900 - 5950	dB	50	65	-				
Band25 Tx to Rx	Isolation	1850.25 - 1911.75	dB	55	61	-	Tx	
		1911.75 - 1914.75	dB	50	65	-	Tx	
		1930.25 - 1933.25	dB	48	61	-	Rx	
		1933.25 - 1994.75	dB	54	63	-	Rx	

## Electrical Characteristics

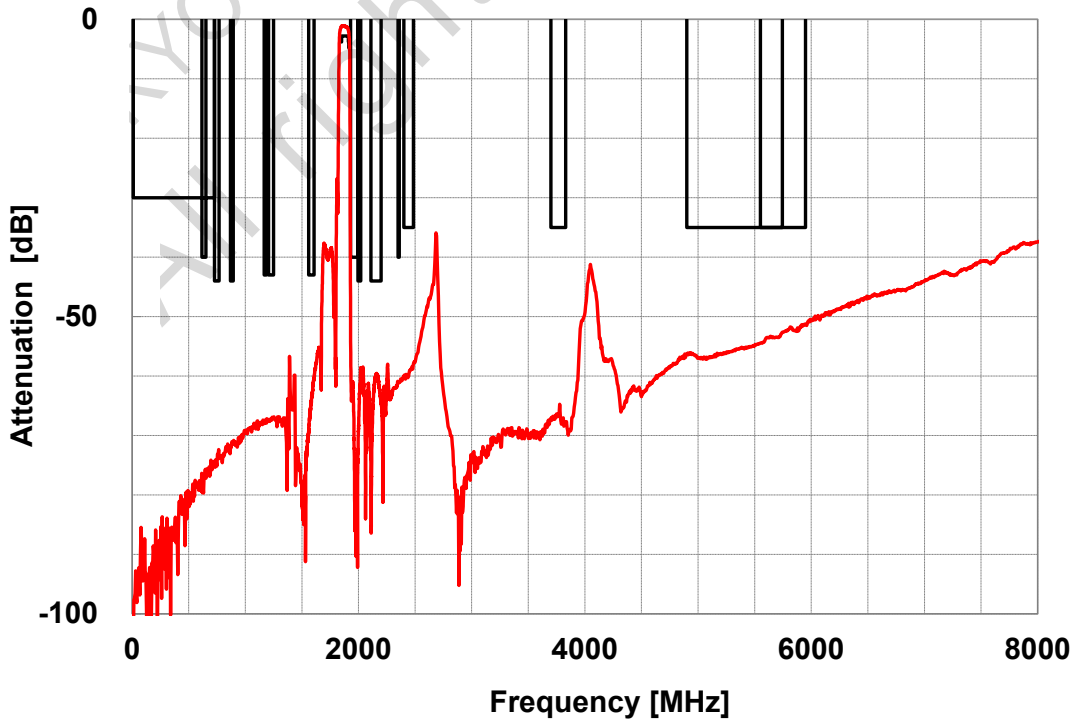
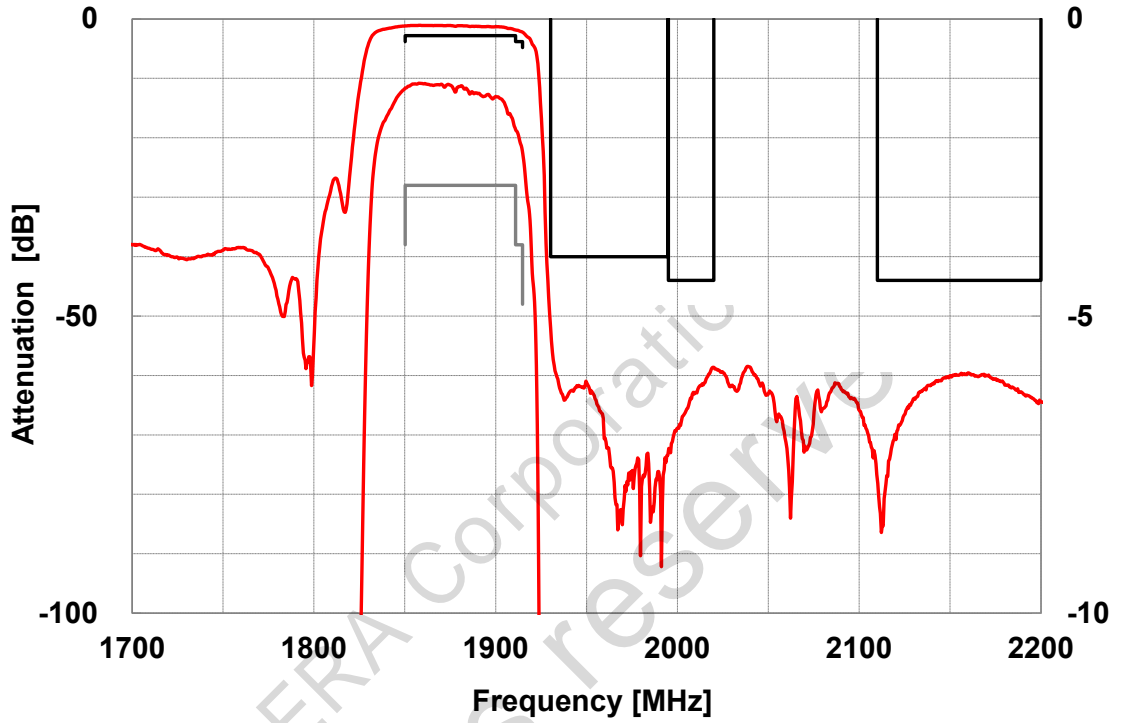
Items		Frequency Range [MHz]	Unit	Specification			Notes	
				Min.	Typ.	Max.		
Band66 Tx to ANT	Insertion Loss	1710.15 - 1779.85	dB	-	1.5	2.5		
	Passband Ripple	1710.15 - 1779.85	dB	-	0.4	1.5		
	VSWR	Tx	1710.15 - 1779.85	-	-	1.4	2.5	
		Ant	1710.15 - 1779.85	-	-	1.3	2.5	
	Attenuation	10 - 849	dB	30	59	-		
		617 - 652	dB	40	63	-		
		1166 - 1186	dB	43	53	-		
		1205 - 1250	dB	43	52	-		
		1559 - 1608	dB	38	44	-		
		1930 - 1995	dB	45	57	-	B25 Rx	
		1995 - 2020	dB	45	56	-	B70 Rx	
		2110 - 2200	dB	45	57	-	B66 Rx	
		2350 - 2360	dB	37	46	-		
		2400 - 2485	dB	35	48	-		
3420 - 3560	dB	30	41	-	2H			
4900 - 5950	dB	30	40	-				
5130 - 5340	dB	30	41	-				
Band66 ANT to Rx	Insertion Loss	2110.15 - 2199.85	dB	-	1.6	2.6		
	Passband Ripple	2110.15 - 2199.85	dB	-	0.4	1.5		
	VSWR	Ant	2110.15 - 2199.85	-	-	1.4	2.5	
		Rx	2110.15 - 2199.85	-	-	1.6	2.5	
	Attenuation	400 - 420	dB	50	75	-		
		663 - 698	dB	40	74	-		
		699 - 733	dB	40	75	-		
		777 - 798	dB	40	73	-		
		824 - 849	dB	40	73	-		
		1055 - 1100	dB	40	72	-		
		1310 - 1360	dB	40	74	-		
		1695 - 1710	dB	45	60	-	B70 Tx	
1710 - 1780		dB	45	61	-	B66 Tx		
1850 - 1915		dB	40	61	-	B25 Tx		
2305 - 2315	dB	38	54	-				
2400 - 2500	dB	28	58	-				
4220 - 4400	dB	30	39	-	2H			
4900 - 5950	dB	20	35	-				
Band66 Tx to Rx	Isolation	1710.15 - 1779.85	dB	54	60	-	Rx	
		2110.15 - 2199.85	dB	55	60	-	Tx	

## Electrical Characteristics

Items		Frequency Range [MHz]	Unit	Specification			Notes	
				Min.	Typ.	Max.		
Band70 Tx to ANT	Insertion Loss	1695.24 - 1709.76	dB	-	1.4	2.3		
	Passband Ripple	1695.24 - 1709.76	dB	-	0.3	1.5		
	VSWR	Tx	1695.24 - 1709.76	-	-	1.2	2.5	
		Ant	1695.24 - 1709.76	-	-	1.3	2.5	
	Attenuation	3390 - 3420	dB	35	42	-	2H	
Band70 ANT to Rx	Insertion Loss	1995.24 - 2019.76	dB	-	1.5	2.3		
	Passband Ripple	1995.24 - 2019.76	dB	-	0.2	1.5		
	VSWR	Ant	1995.24 - 2019.76	-	-	1.4	2.5	
		Rx	1995.24 - 2019.76	-	-	1.4	2.5	
	Attenuation	3990 - 4040	dB	40	61	-	2H	
Band70 Tx to Rx	Isolation	1695.24 - 1709.76	dB	55	60	-	Rx	
		1995.24 - 2019.76	dB	55	58	-	Tx	
Band70Tx to Band25Rx	Cross Isolation	1695.24 - 1709.76	dB	55	60	-	B70 Tx	
		1930.25 - 1994.75	dB	55	60	-	B25 Rx	
Band70Tx to Band66Rx	Cross Isolation	1695.24 - 1709.76	dB	53	57	-	B70 Tx	
		2110.15 - 2199.85	dB	55	60	-	B66 Rx	
Band25Tx to Band70Rx	Cross Isolation	1850.25 - 1911.75	dB	55	61	-	B25 Tx	
		1911.75 - 1914.75	dB	50	65	-		
		1995.24 - 2019.76	dB	55	62	-	B70 Rx	
Band25Tx to Band66Rx	Cross Isolation	1850.25 - 1914.75	dB	55	62	-	B25 Tx	
		2110.15 - 2199.85	dB	55	58	-	B66 Rx	
Band66Tx to Band70Rx	Cross Isolation	1710.15 - 1779.85	dB	55	60	-	B66 Tx	
		1995.24 - 2019.76	dB	55	58	-	B70 Rx	
Band66Tx to Band25Rx	Cross Isolation	1710.15 - 1779.85	dB	55	60	-	B66 Tx	
		1930.25 - 1994.75	dB	55	60	-	B25 Rx	

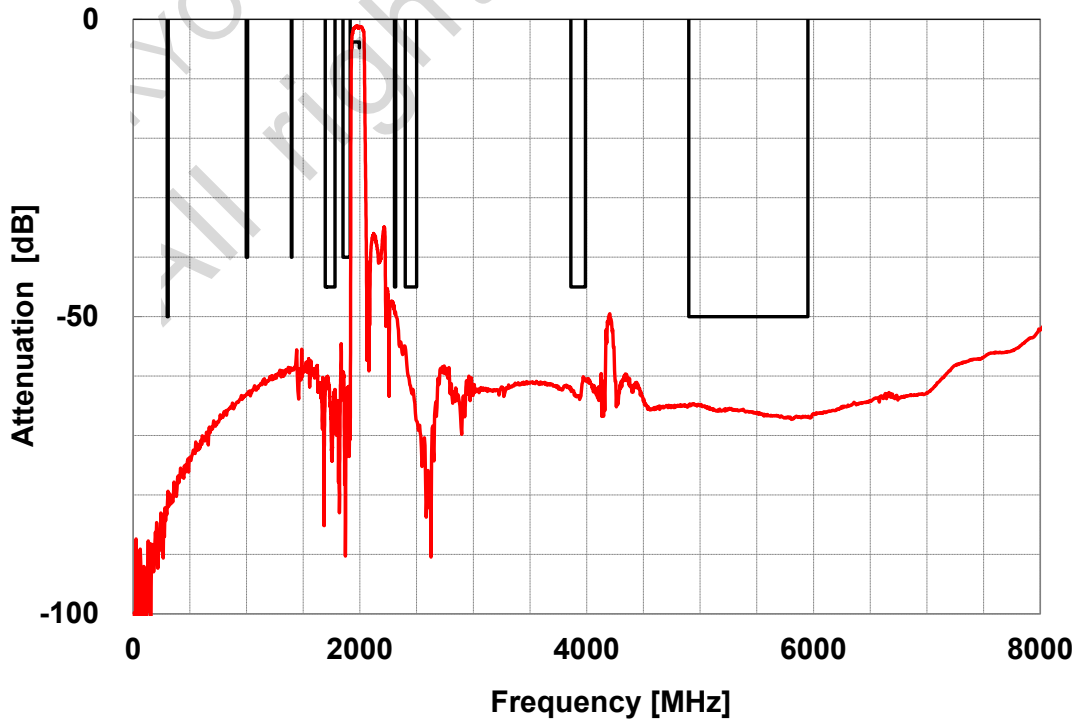
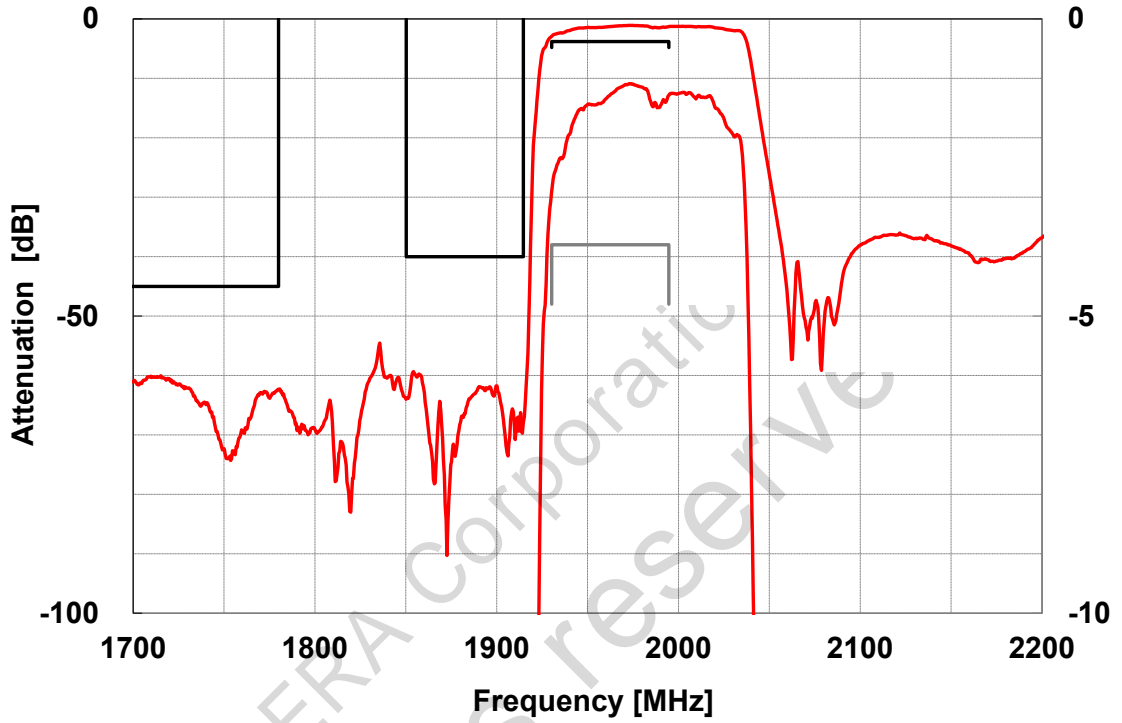
### Electrical Characteristics

[Band25 Tx to Ant]



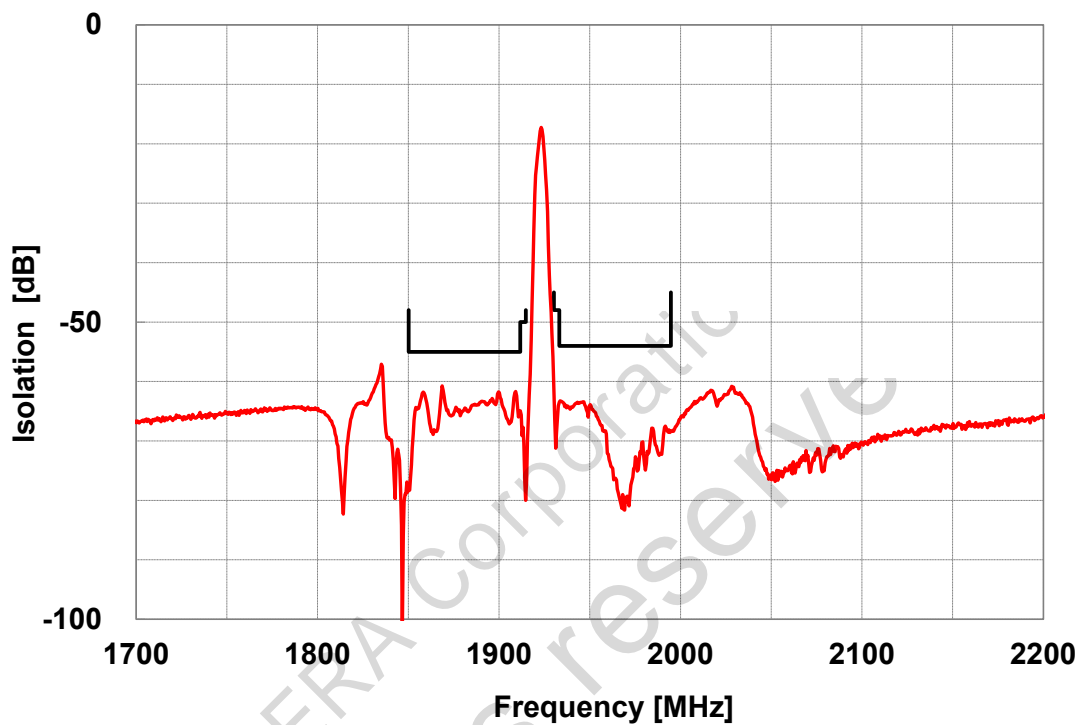
### Electrical Characteristics

[Band25 Ant to Rx]



### Electrical Characteristics

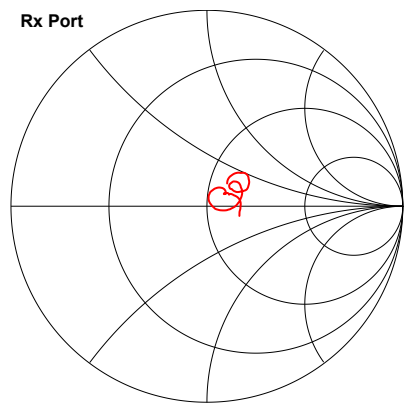
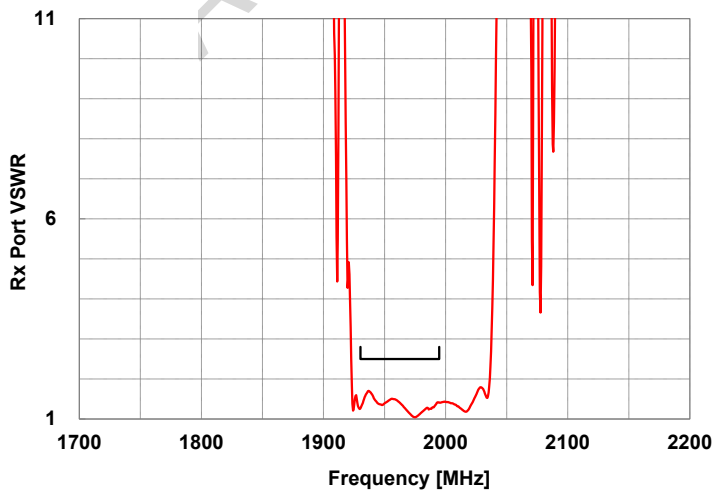
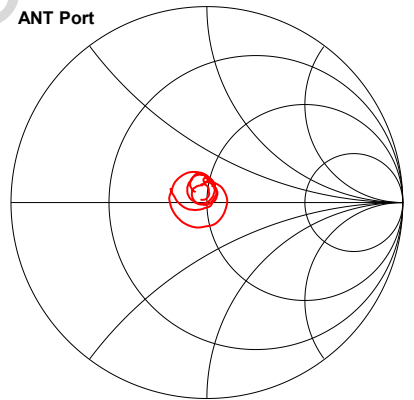
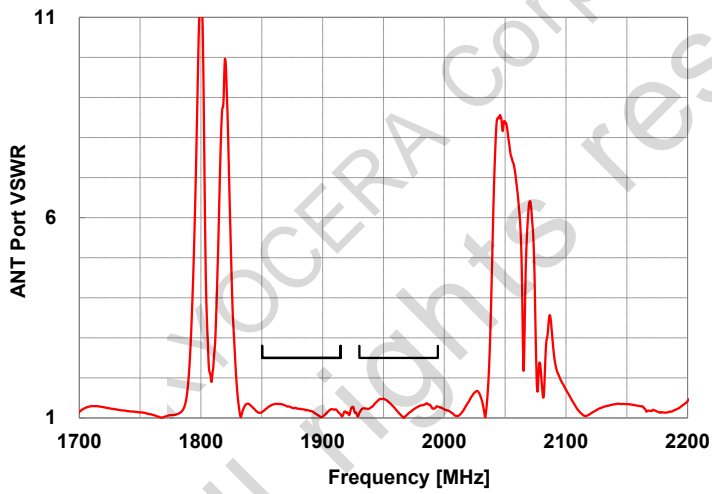
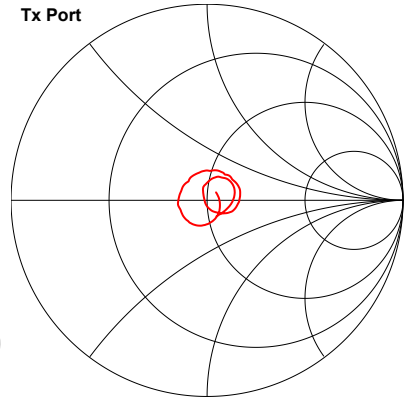
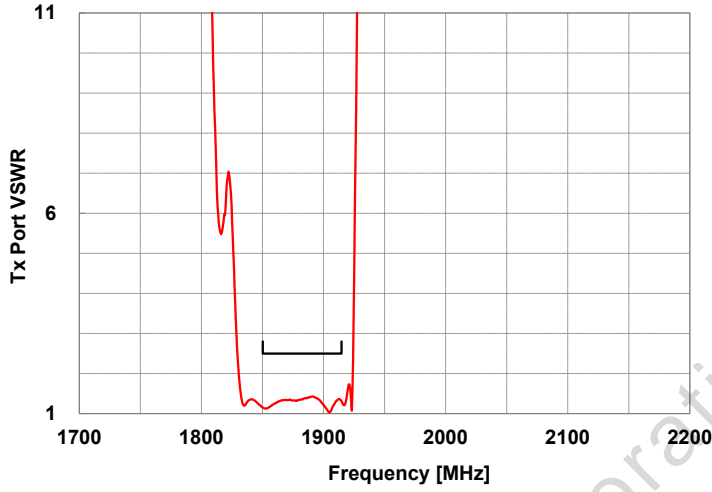
[Band25 Tx to Rx]



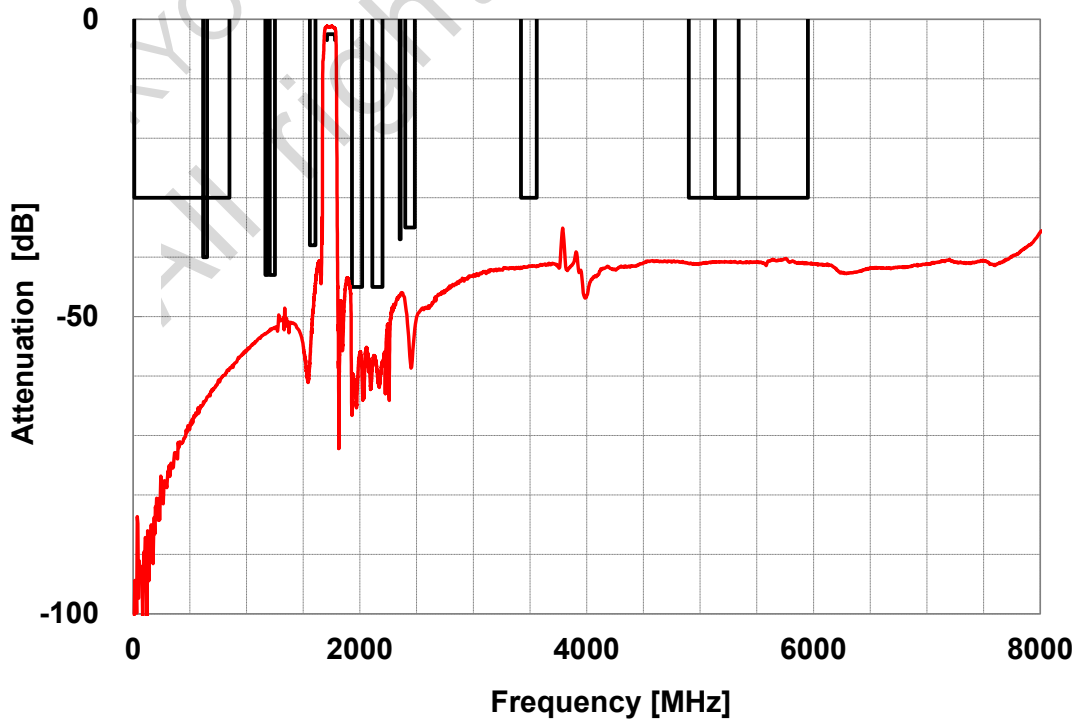
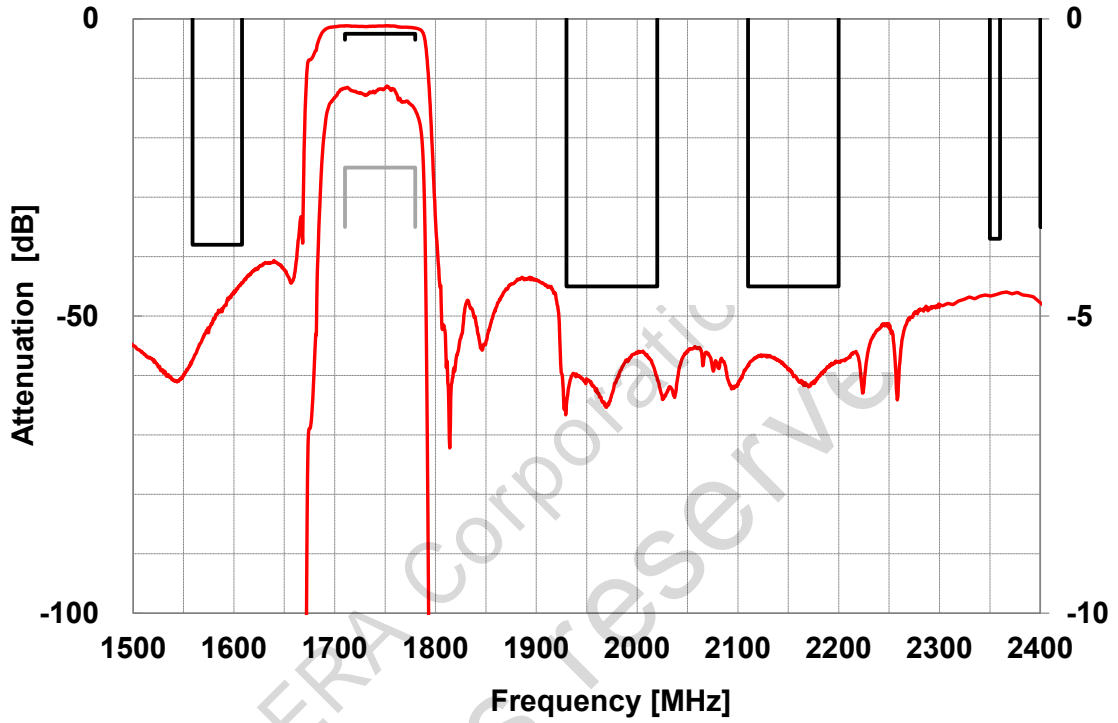


**Electrical Characteristics**

**[Band25]**

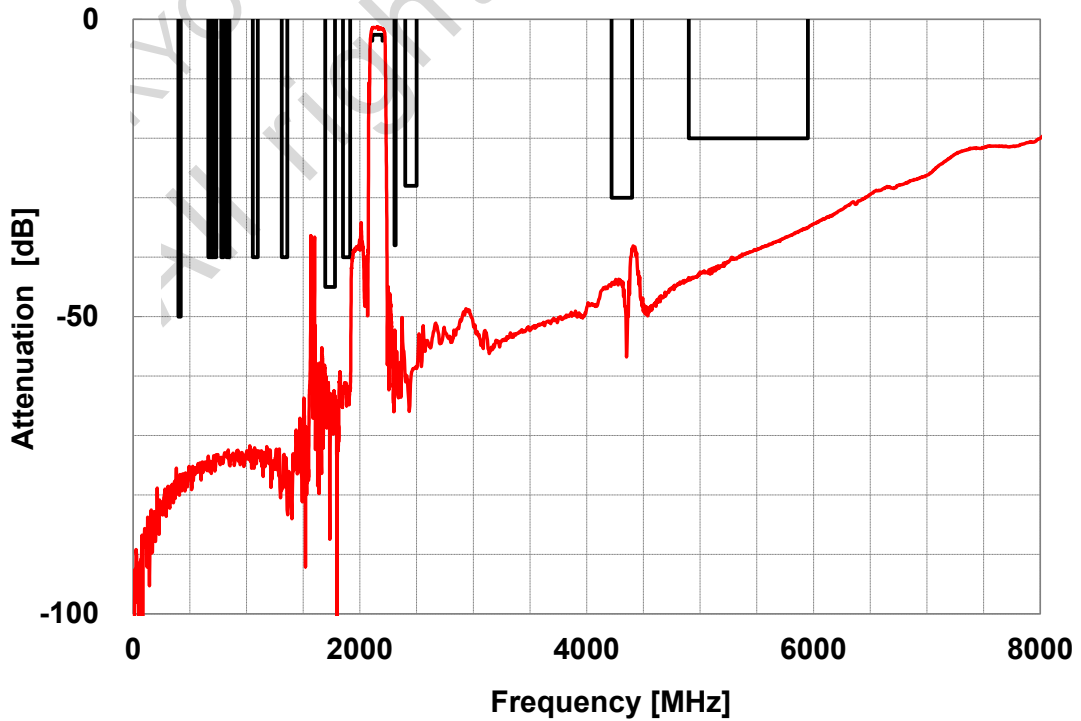
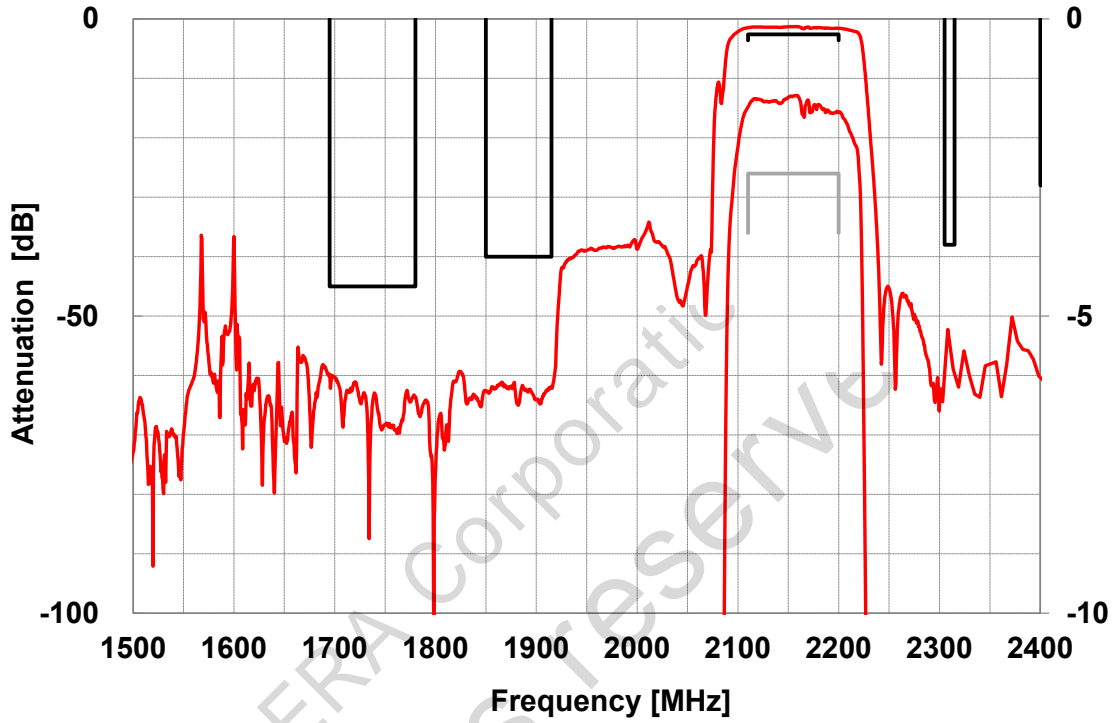


### Electrical Characteristics [Band66 Tx to Ant]



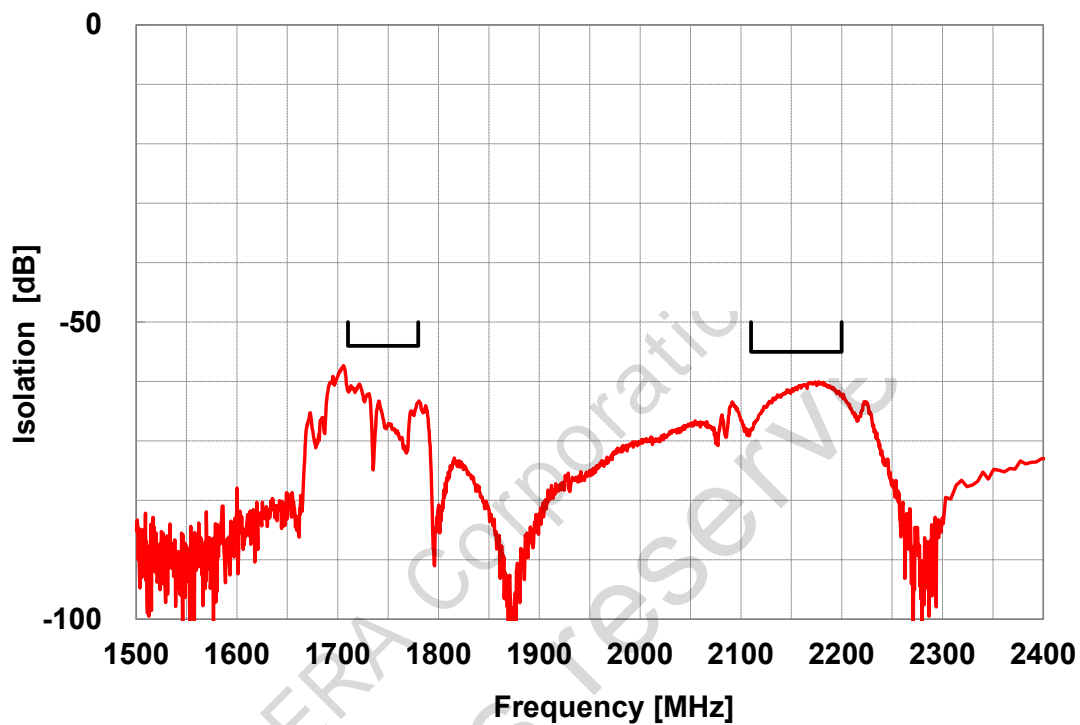
### Electrical Characteristics

[Band66 Ant to Rx]



### Electrical Characteristics

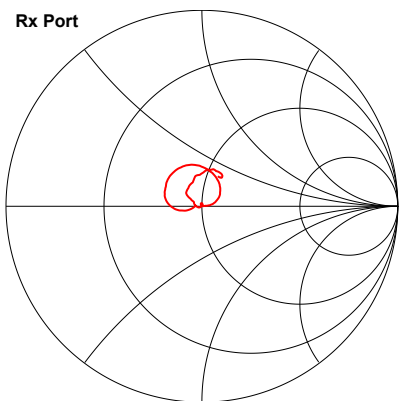
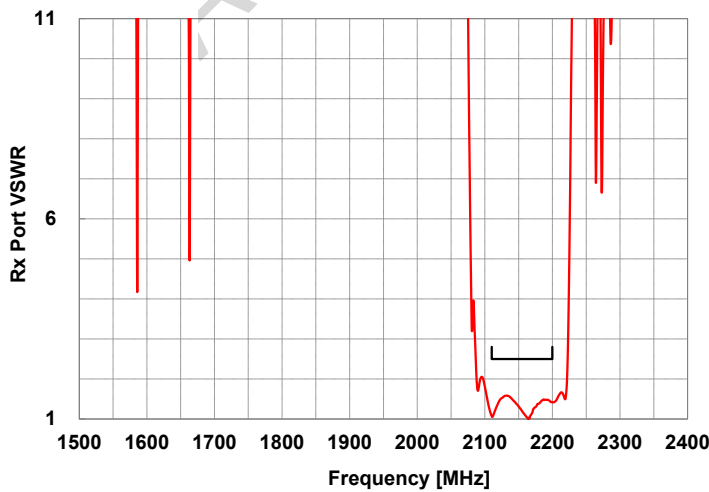
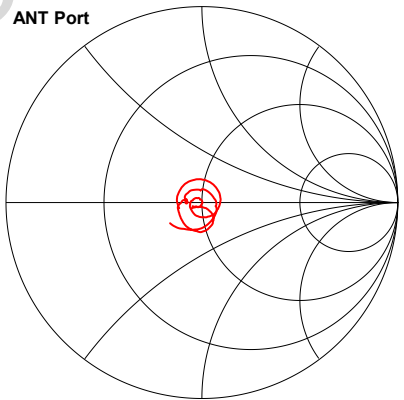
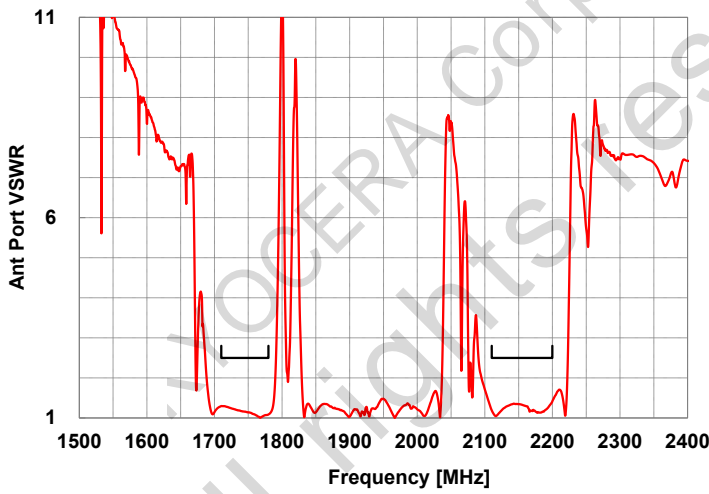
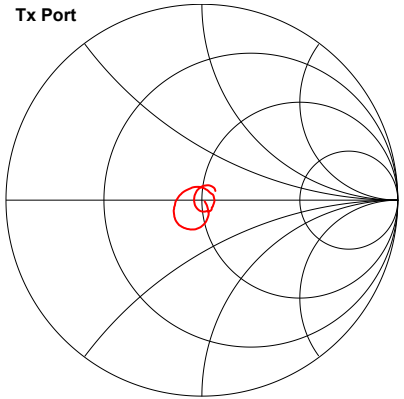
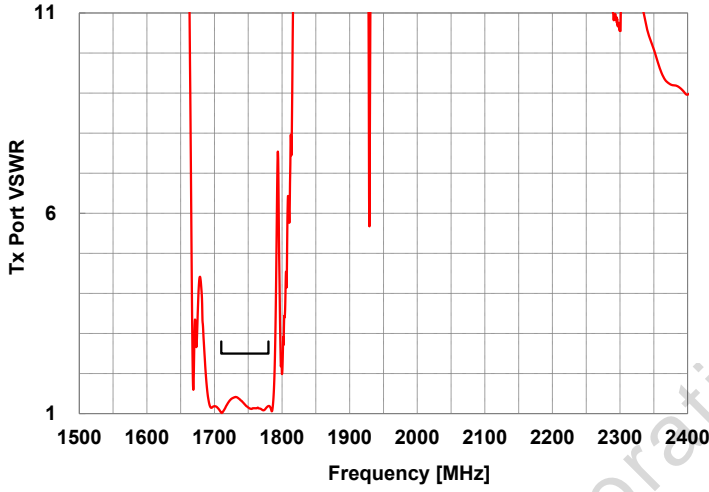
[Band66 Tx to Rx]



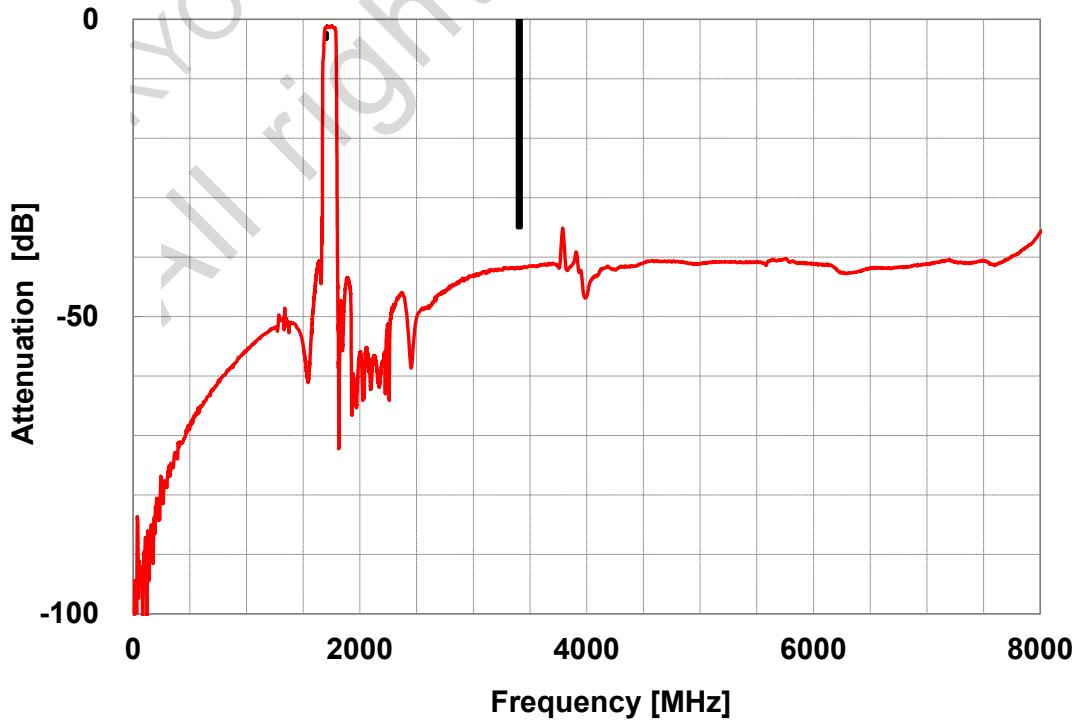
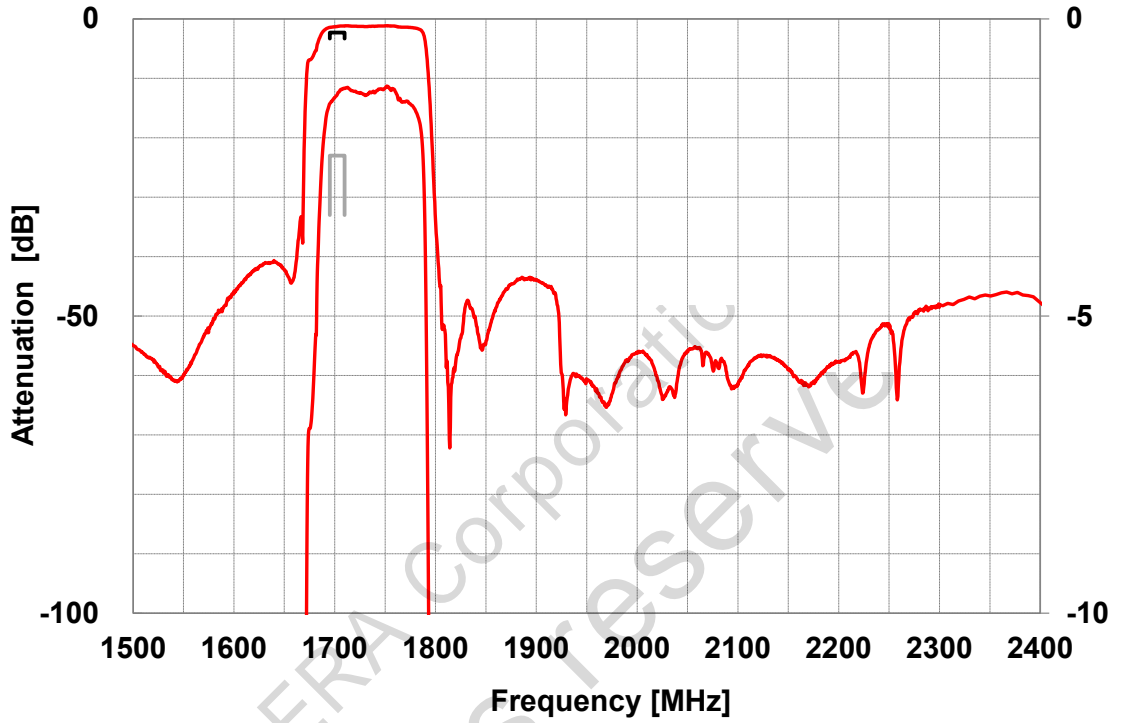
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**Electrical Characteristics**

**[Band66]**

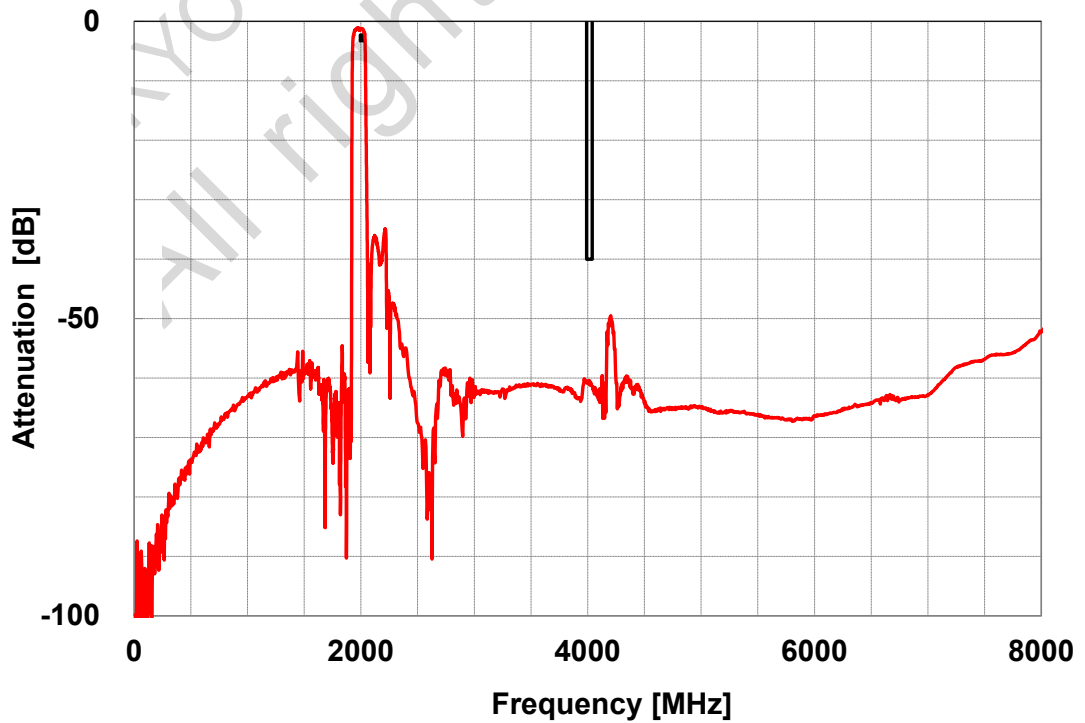
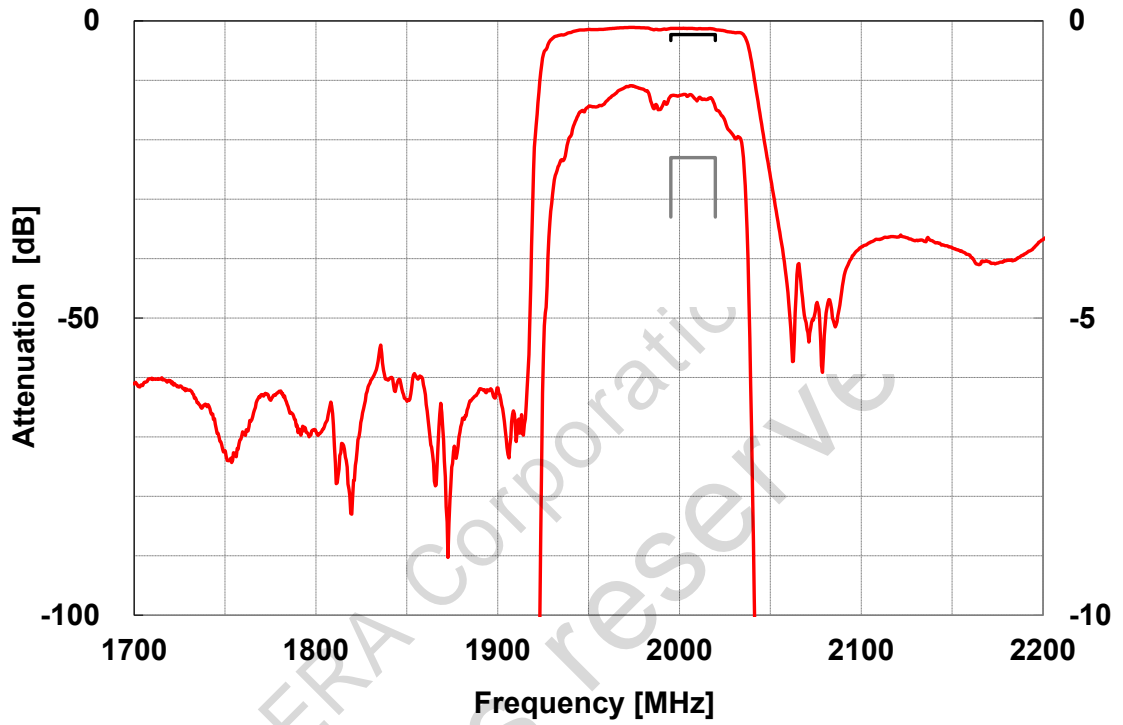


### Electrical Characteristics [Band70 Tx to Ant]



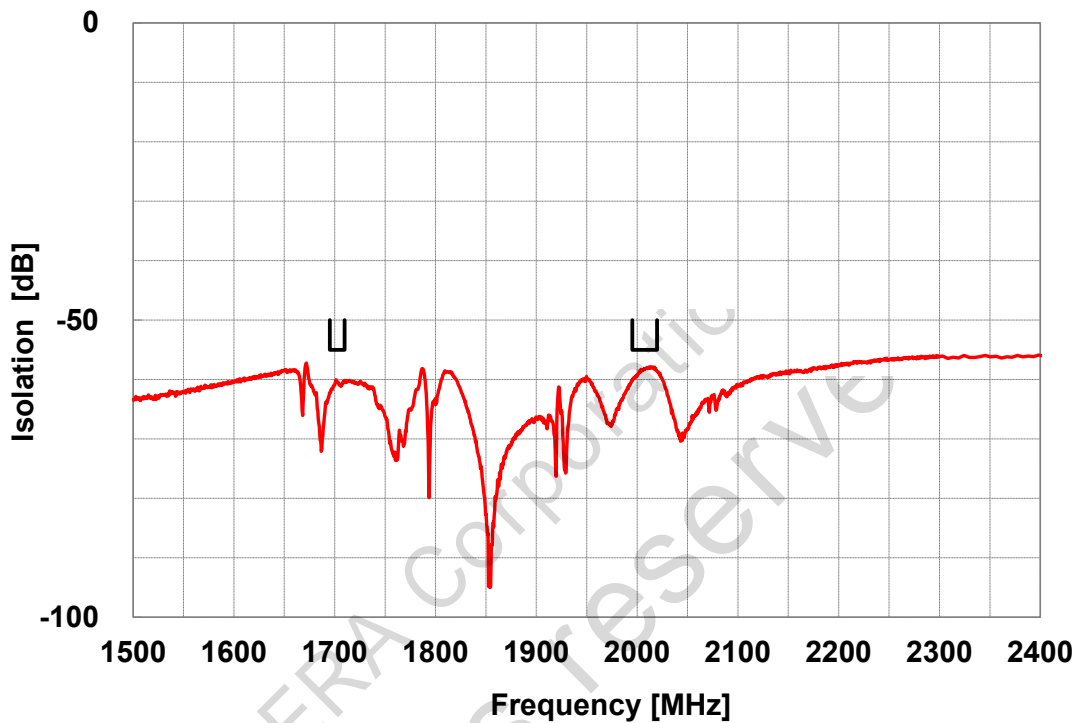
**Electrical Characteristics**

[Band70 Ant to Rx]



### Electrical Characteristics

[Band70 Tx to Rx]

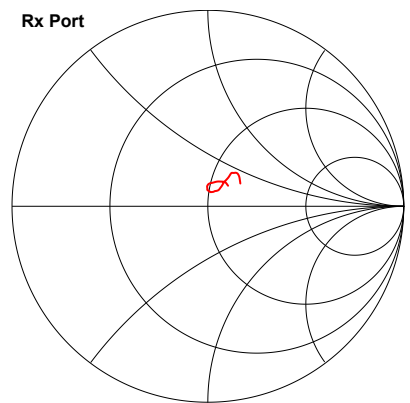
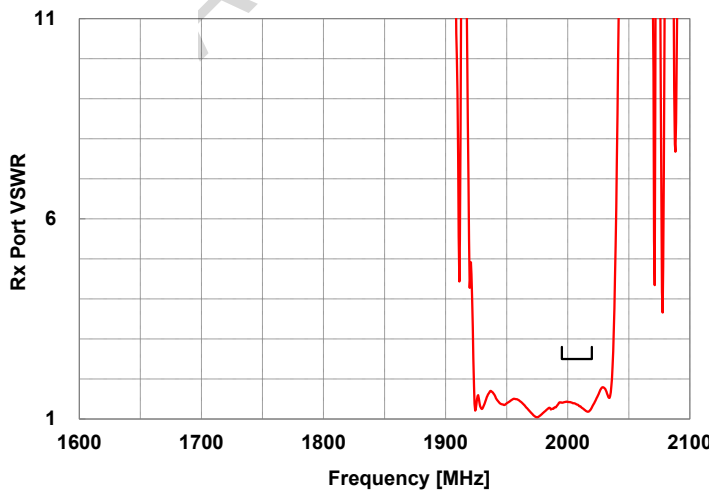
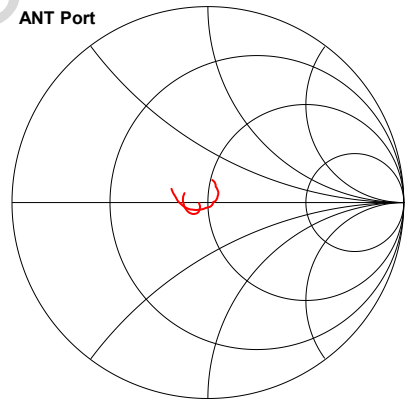
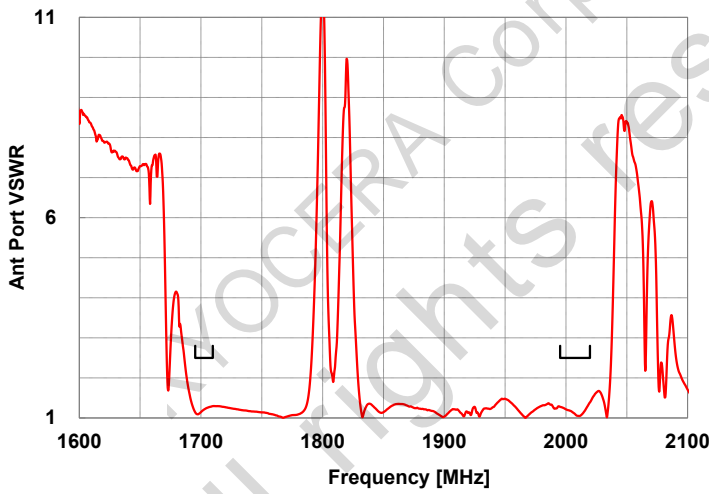
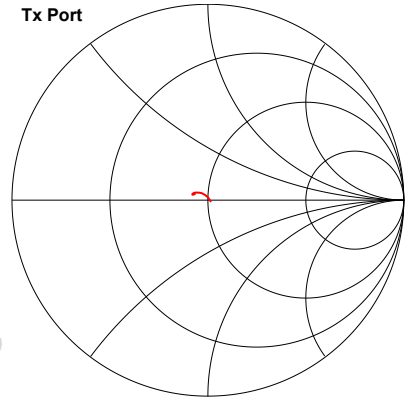
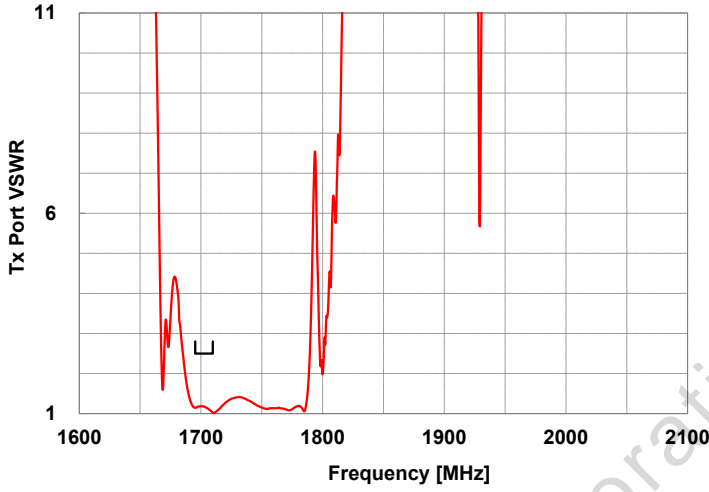


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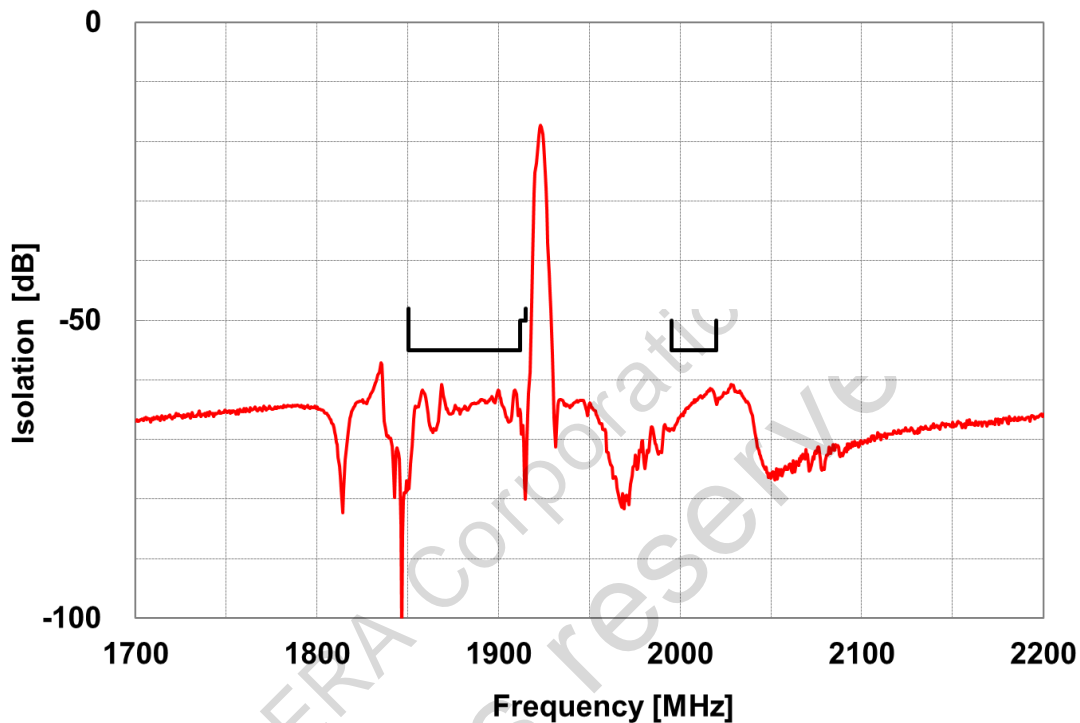
# Electrical Characteristics

## [Band70]

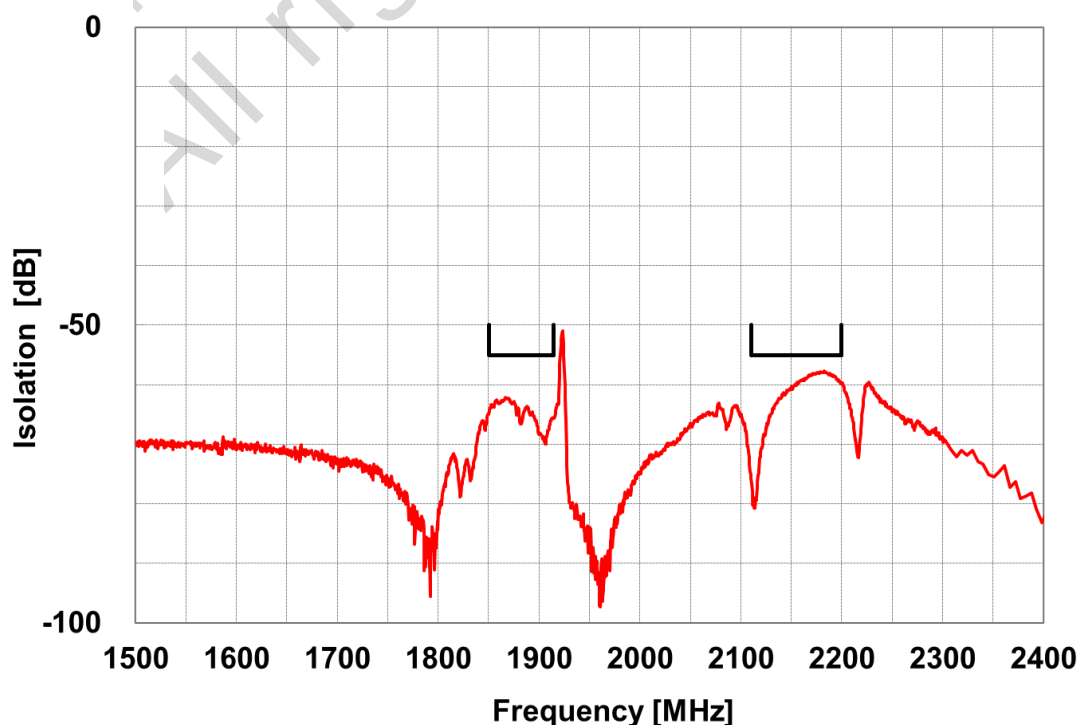


### Electrical Characteristics

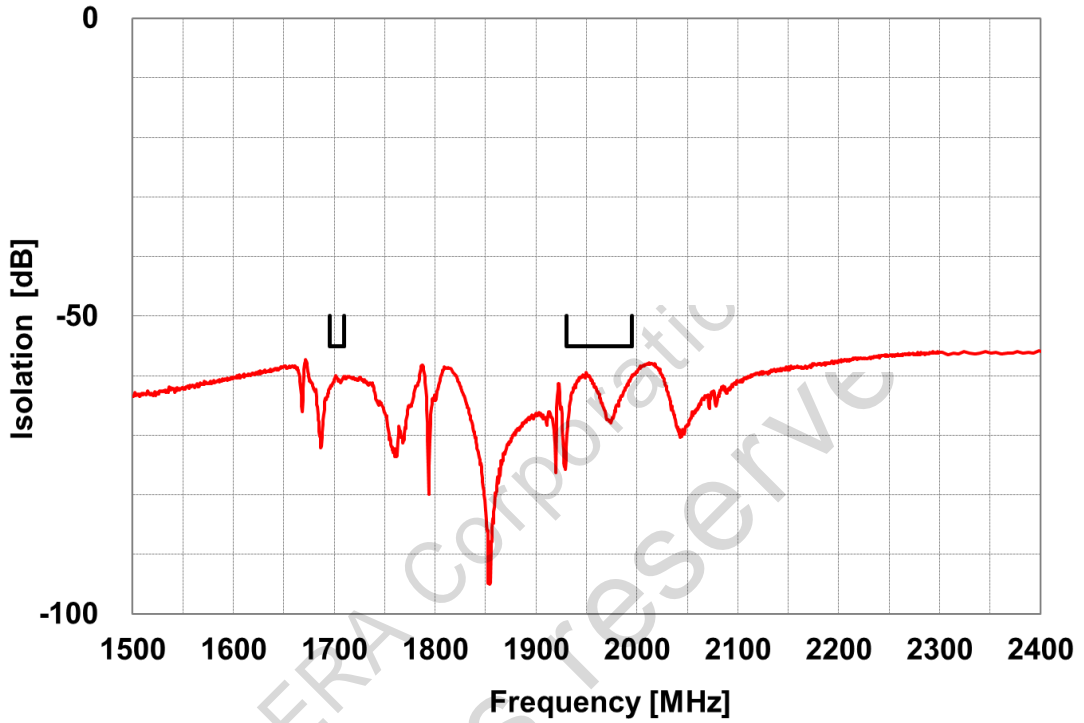
[Band25 Tx to Band70 Rx]



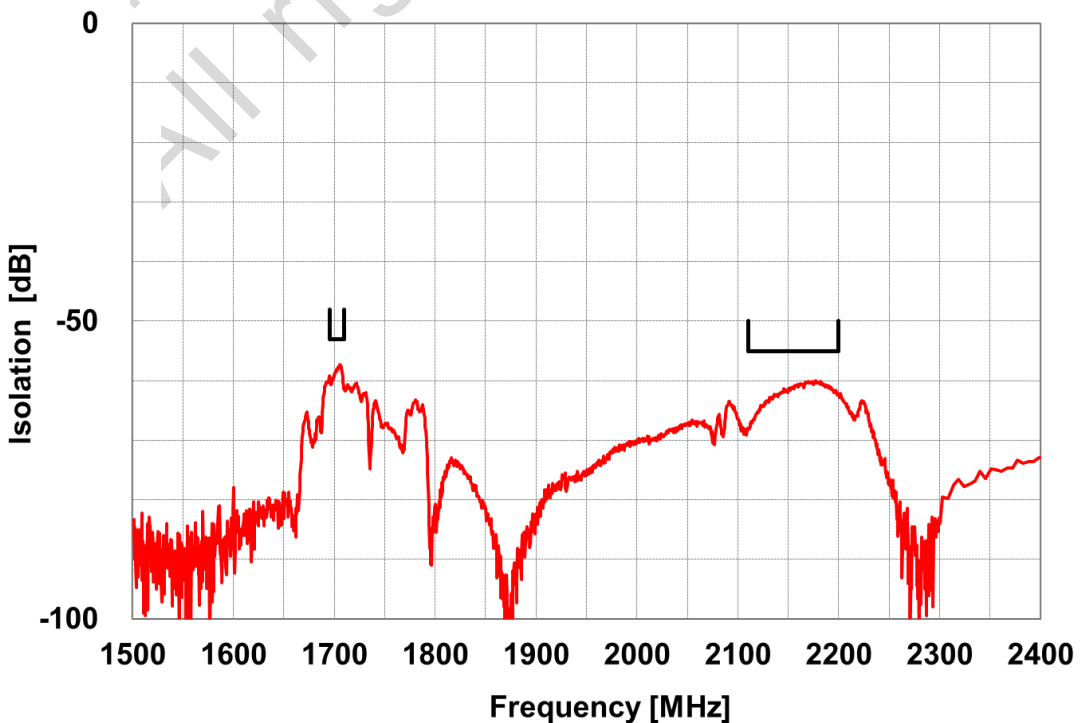
[Band25 Tx to Band66 Rx]



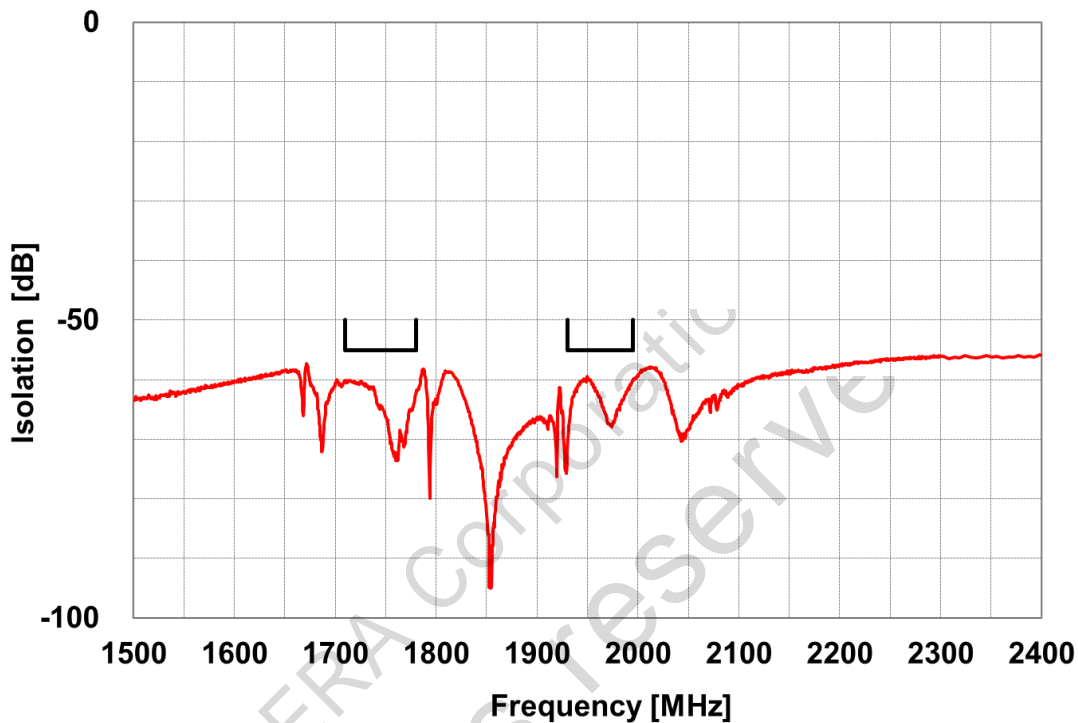
**Electrical Characteristics**  
**[Band70 Tx to Band25 Rx]**



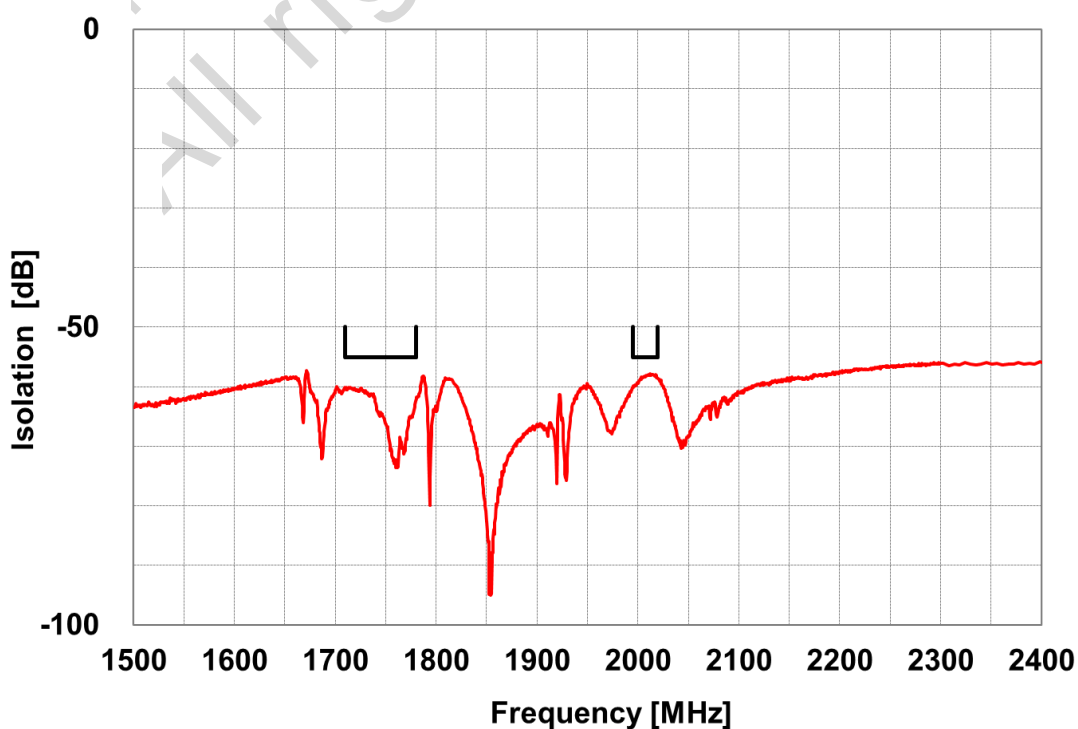
**[Band70 Tx to Band66 Rx]**



**Electrical Characteristics**  
**[Band66 Tx to Band25 Rx]**

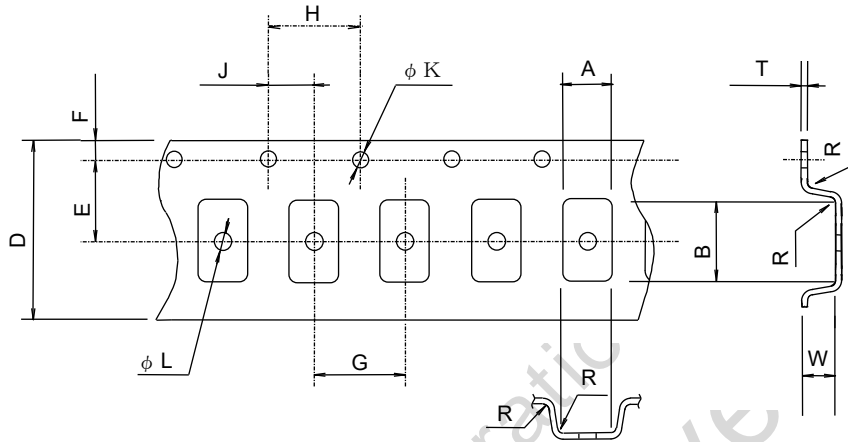


**[Band66 Tx to Band70 Rx]**



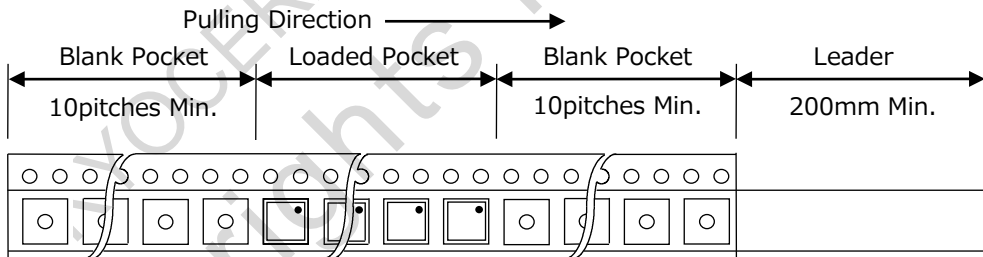
### Tape & Reel Specification

#### [Tape]

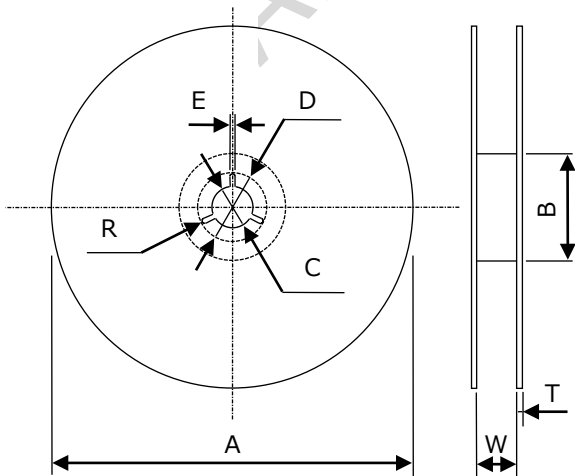


Part	A	B	D	E	F
Dimension	1.8±0.1	2.3±0.10	8.0±0.2	3.5±0.05	1.75±0.1
Part	G	H	J	ΦK	ΦL
Dimension	4.0±0.1	4.0±0.1	2.00±0.05	1.5±0.1	1.1±0.1
Part	R	W	T		
Dimension	0.3 MAX	1.0±0.1	0.20±0.05		

Unit[mm]



#### [Reel]



Part	A	B	C	D
Dimension	178 ± 2	60 ± 2	13.0 ± 0.2	21.0 ± 0.8
Part	E	R	W	T
Dimension	2.0 ± 0.5	1	9.5 ± 1.0	2.0 ± 0.2

Unit : mm

## Notice

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