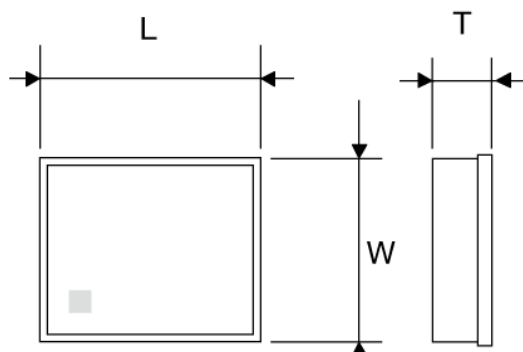


## FBAR Filter

## D6HH1G960BH97



## ■ Features

- Item Summary  
W-CDMA / CDMA, 1008
- Lifecycle Stage  
Mass Production
- Standard packaging quantity (minimum)  
Taping Embossed 3000 , 10000pcs

## ■ Products characteristics table

Temperature Range	-20 to +85°C
Band(3GPP)	B2
Band(3GPP2)	BC1
Use	WCDMA / CDMA
Transmitting / Receiving	Duplexer
Insertion Loss	2.6/2.5dB
Attenuation	56/59dB
RoHS Compliance	Yes
Halogen Free	Yes
Soldering Method	Reflow

## ■ External Dimensions

L	2.5mm +0.1:-0.1
W	2mm +0.1:-0.1
T	0.65mm max

2015.06.03

The data is reference only. Electrical characteristics vary depending on environment or measurement condition.  
 TAIYO YUDEN reserves the right to make change to the Date at any time without notice.  
 Before making final selection, please check product specification.



Pb-free

\* Pb Free Part



MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

**Table 1-1. Electrical Specification**

Item	Condition (MHz)	Specification			Unit	Remarks		
		Min	Typ	Max				
Tx to ANT	Insertion loss	1850.48~1909.52	-	2.6	3.3	dB  <b>(*1)</b>		
			-	-	3.0		<b>(*2)</b>	
		1850.625 ~ 1909.375	-	2.6	3.5		-30 ~ +85 °C <b>(*3)</b>	
	Ripple (any 5MHz)	1850.48~1909.52	-	-	1.5	dB		
	VSWR	ANT	1850.48~1909.52	-	1.7	2.2	-	
				Tx	-	1.8	2.2	-
	Input Power	1850.48~1909.52	29dBm, Ta=+50°C, 50kh, CW			dBm		
	Absolute attenuation	10 ~ 728	30	45	-	dB		
		728 ~ 764	40	46	-	dB		
		869 ~ 894	40	48	-	dB		
		1565.42 ~ 1573.374	43	50	-	dB		
		1573.374~1577.466	43	50	-	dB		
		1577.466~1585.42	43	50	-	dB		
		1597.5515~1605.886	43	50	-	dB		
		1605.886 ~1680	30	41	-	dB		
1930.48 ~ 1989.52		43	54	-	dB			
2110 ~ 2155		33	44	-	dB			
2400 ~ 2500		30	35	-	dB			
3690 ~ 3830		20	27	-	dB			
5150 ~ 5350		15	19	-	dB			
5540 ~ 5860	13	16	-	dB				
7390 ~ 7650	10	18	-	dB				

**(\*1)** Specification of insertion loss excludes loss that comes from the test board. (Approximately 0.15dB)

**(\*2)** The integrated isolation over channel band width (+/- 1.92MHz)

**(\*3)** The integrated isolation over channel band width (+/- 0.625MHz)



Pb-free  
\* Pb Free Part



MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

**Table 1-2. Electrical Specification**

Item		Condition (MHz)	Specification			Unit	Remarks	
			Min	Typ	Max			
ANT to Rx	Insertion loss	1930.48~1989.52	-	2.5	3.5	dB <b>(*1)</b>		
	Ripple (any 5MHz)	1930.48~1989.52	-	-	1.5	dB		
	Phase balance	1930.48~1989.52	-13	-5 +3	+13	deg		
	Amplitude balance	1930.48~1989.52	-1.7	-0.6 +0.6	+1.7	dB		
	VSWR	Ant	1930.48~1989.52	-	1.8	2.1	-	
		Rx		-	1.8	2.2	-	
	Absolute attenuation	1 ~ 1850	30	38	-	dB		
		1765 ~ 1835	30	46	-	dB		
		1850.48 ~ 1989.52	45	55	-	dB		
		2005 ~ 2050	2	10	-	dB		
2050 ~ 2075		25	43	-	dB			
2400 ~ 2484		40	51	-	dB			
2810 ~ 2910		25	50	-	dB			
3755 ~ 3905		30	47	-	dB			
5625 ~ 5815	30	42	-	dB				
Tx to Rx	Isolation (differential)	1574 ~ 1577	40	63	-	dB		
		1850.48~1909.52	52	56	-	dB		
		1932.4 ~ 1987.6	50	59	-	dB	<b>(*2)</b>	
		1931.25~1988.75	44	59	-	dB	-30 ~ -20 °C <b>(*3)</b>	
			48	-	-	dB	-20 ~ -10 °C <b>(*3)</b>	
			50	-	-	dB	-10 ~ +85 °C <b>(*3)</b>	
		3700 ~ 3820	30	52	-	dB		
		5550 ~ 5850	30	44	-	dB		
Common Mode Isolation	1850.48~1909.52	46	50	-	dB			
Terminating Impedance	Tx port	50			Ω	Single-ended		
	Rx port	100 // None			Ω	Differential		
	Ant port	50			Ω	Single-ended		
Operating Temperature		-20 to +85			°C			
Device size (L typ. x W typ. x H max.)		2.5 x 2.0 x 0.65			mm			

**(\*1)** Specification of insertion loss excludes loss that comes from the test board. (Approximately 0.15dB)

**(\*2)** The integrated isolation over channel band width (+/- 1.92MHz)

**(\*3)** The integrated isolation over channel band width (+/- 0.625MHz)



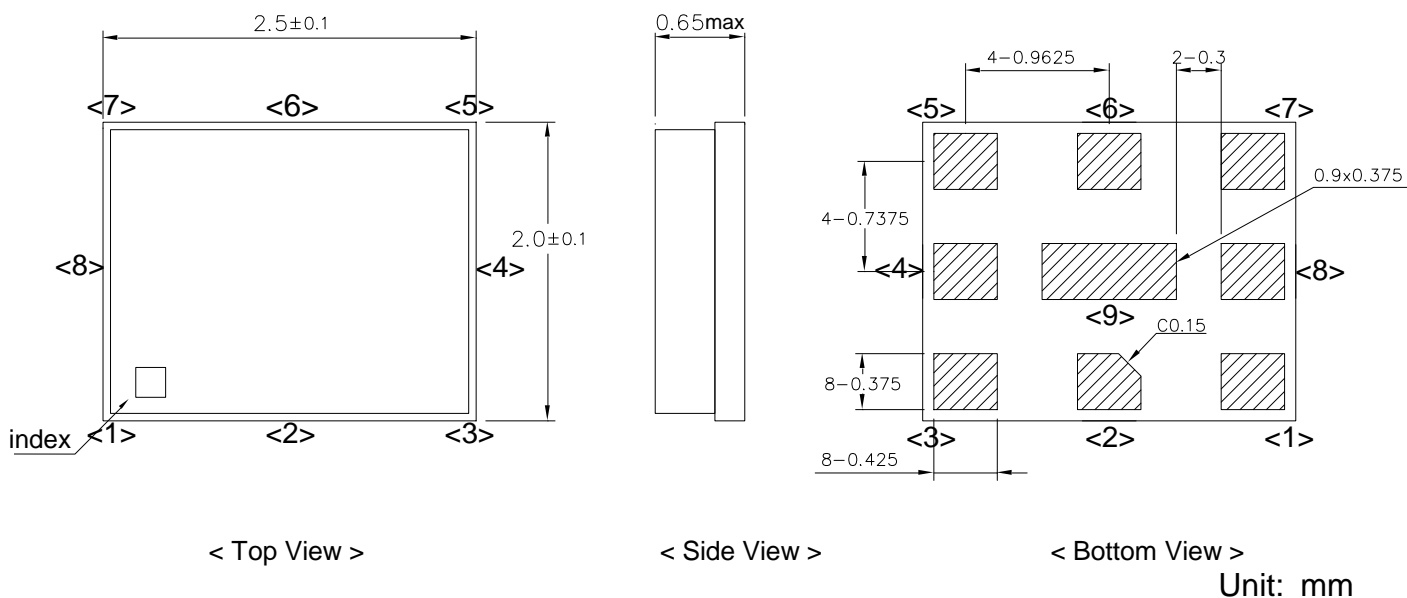
Pb-free  
\* Pb Free Part



MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

### Dimensions



### Pin Configuration

Pin No.	Pin name	Description
1	Rx	Receiver Pin (balanced)
2	GND	Ground Pin
3	Tx	Transmitter Pin
4	GND	Ground Pin
5	GND	Ground Pin
6	ANT	Antenna Pin
7	GND	Ground Pin
8	Rx	Receiver Pin (balanced)
9	GND	Ground Pin

**Figure 1. Dimensions and Pin assignment**



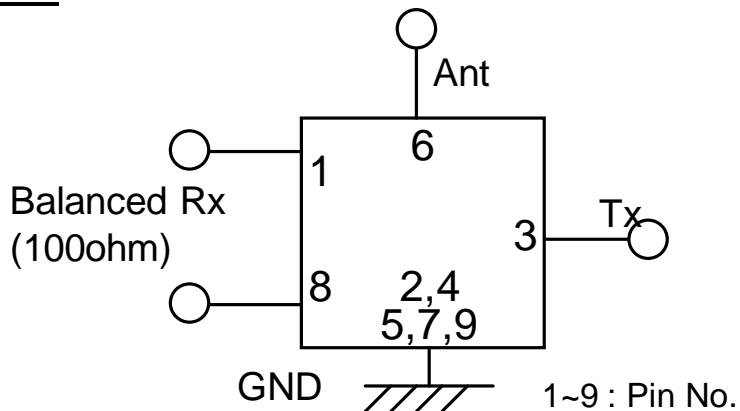
Pb-free  
\* Pb Free Part



MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co., Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
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### Evaluation Circuit



### Recommended foot print pattern

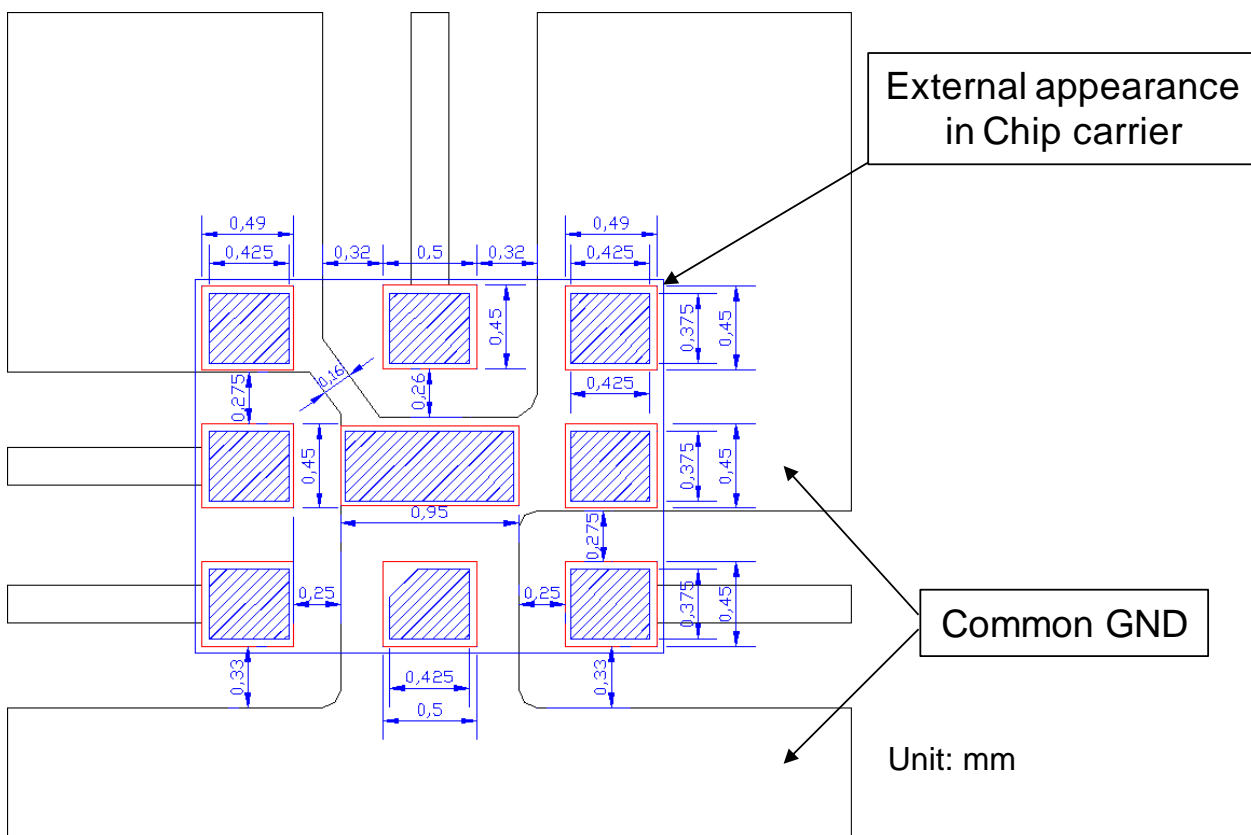


Figure 2. Recommended foot print pattern



Pb-free

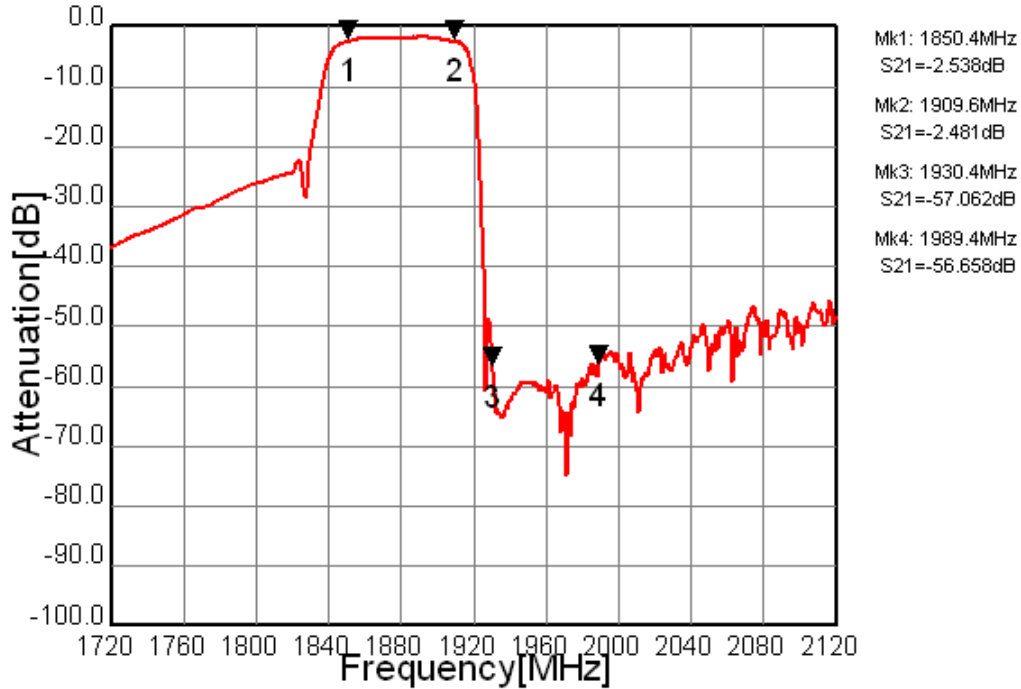
\* Pb Free Part



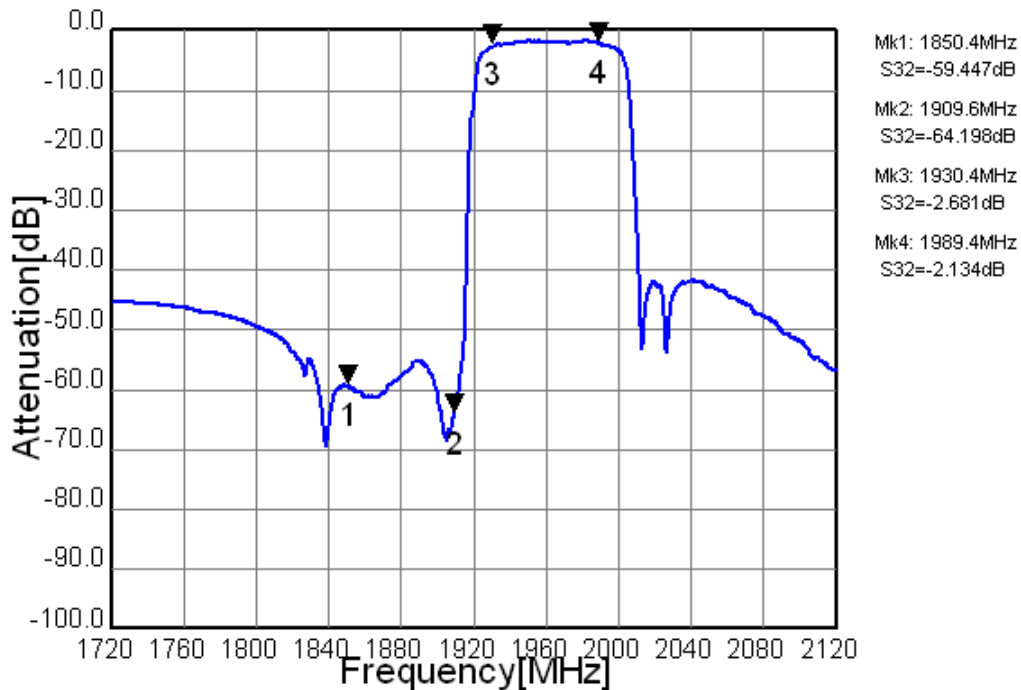
MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

### Tx to Ant



### Ant to Rx



**Figure 3-1. Electrical Characteristics**

These data **include** loss that comes from the test board. (Approximately 0.15dB)



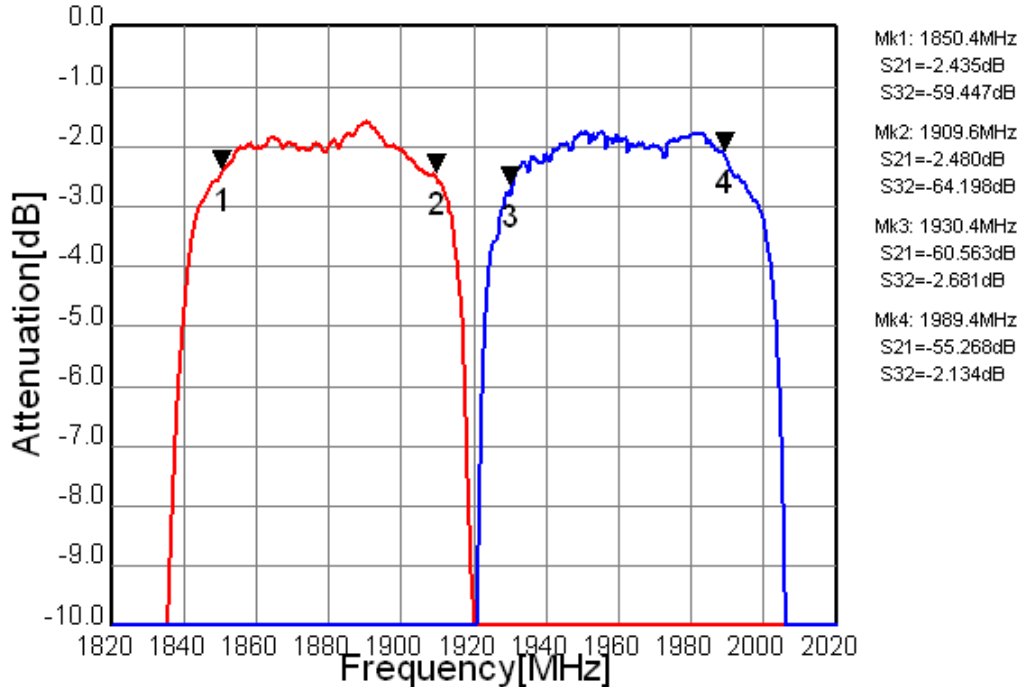
Pb-free  
\* Pb Free Part



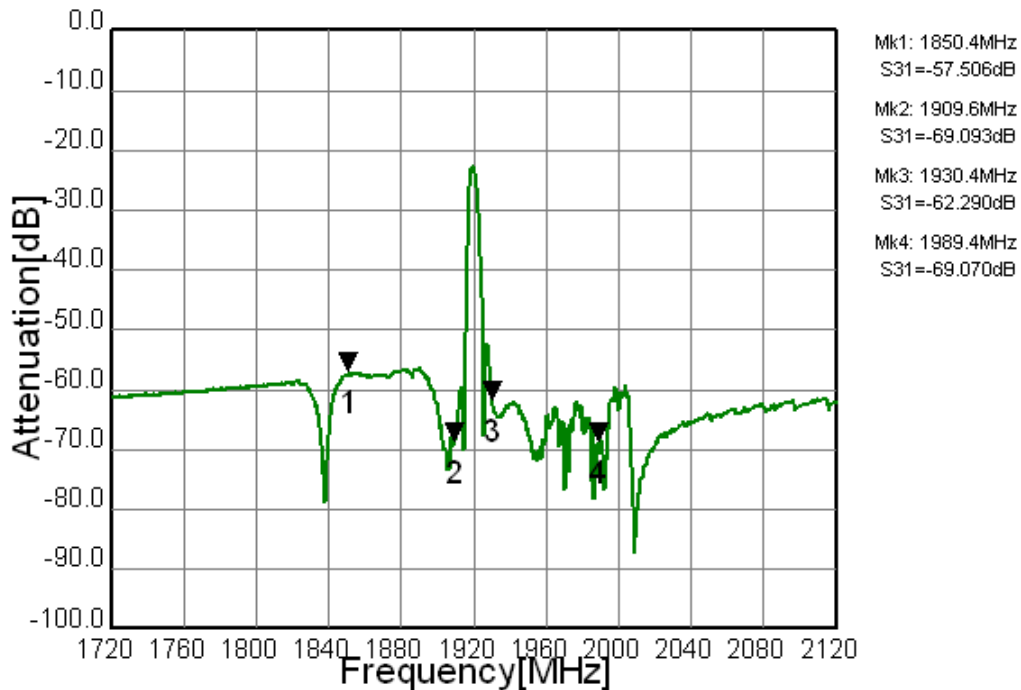
MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co., Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

## Tx to Ant, Ant to Rx



## Tx to Rx Isolation



**Figure 3-2. Electrical Characteristics**

These data **include** loss that comes from the test board. (Approximately 0.15dB)



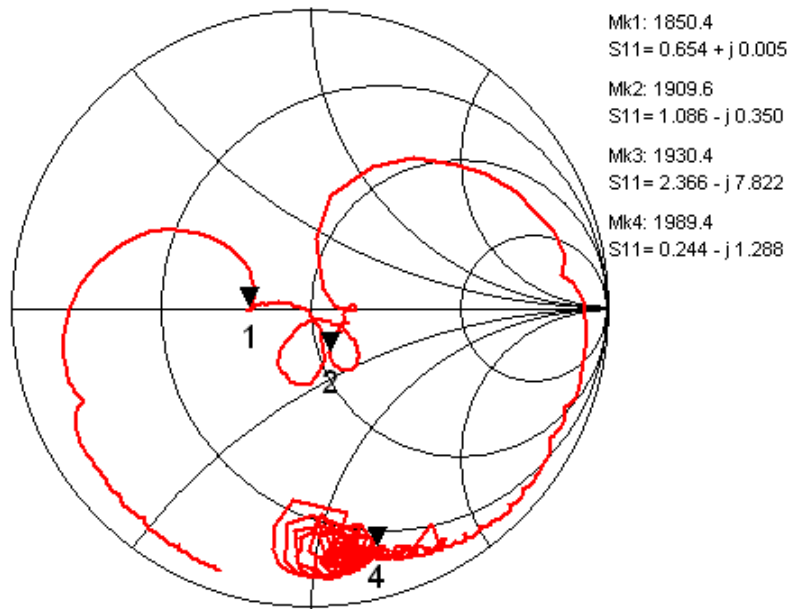
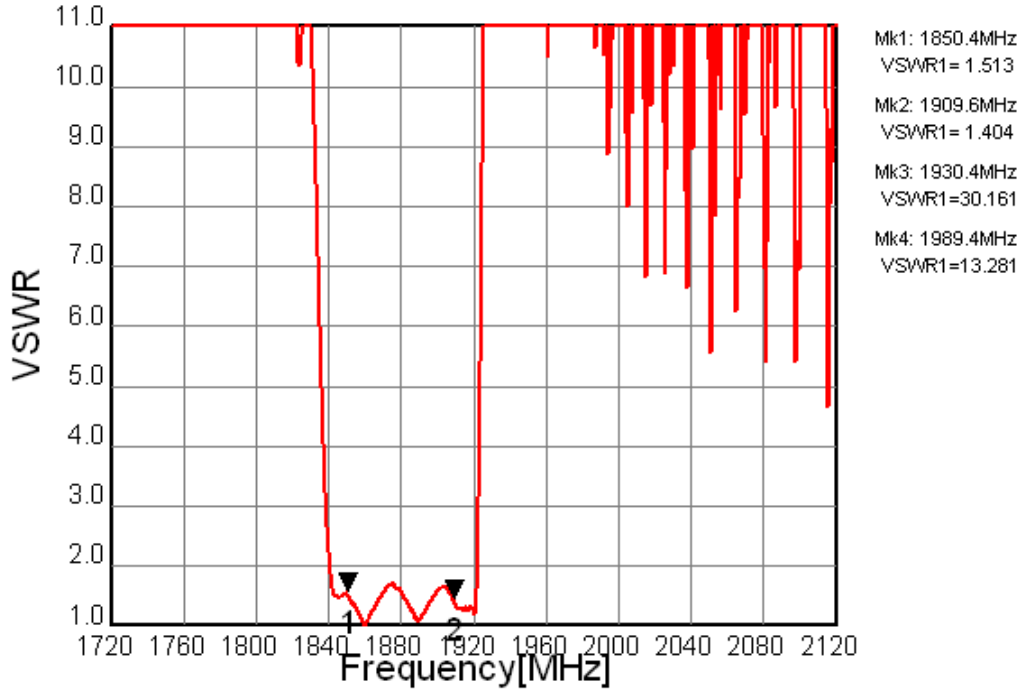
\* Pb Free Part



MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

## Tx Port



**Figure 3-3. Electrical Characteristics**





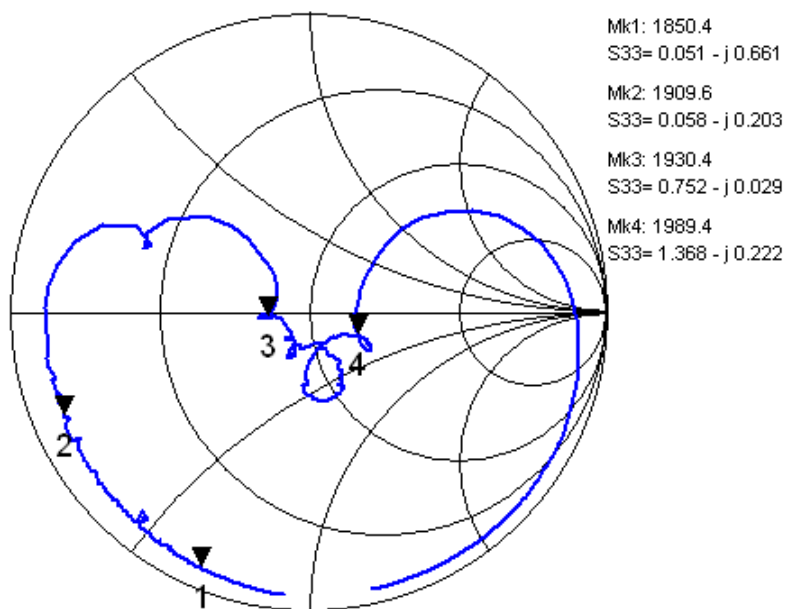
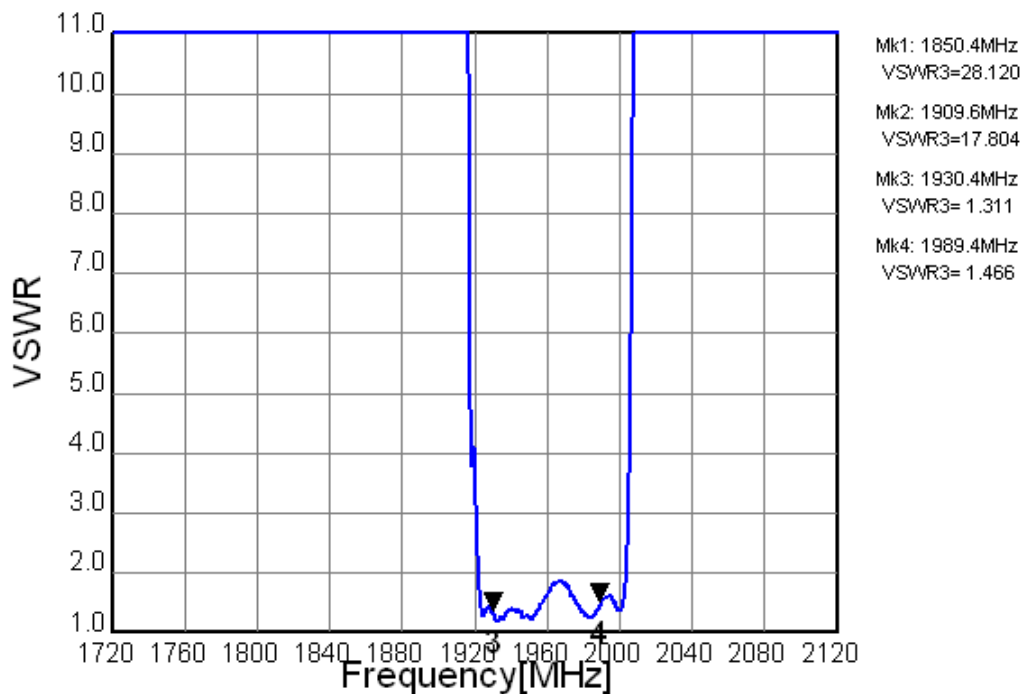
Pb-free  
\* Pb Free Part



MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

## Rx Port



**Figure 3-4. Electrical Characteristics**



Pb-free

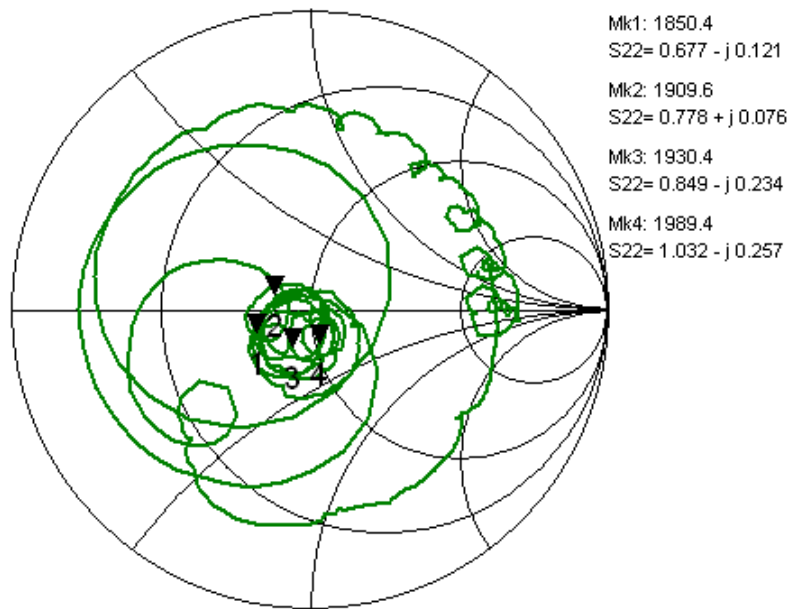
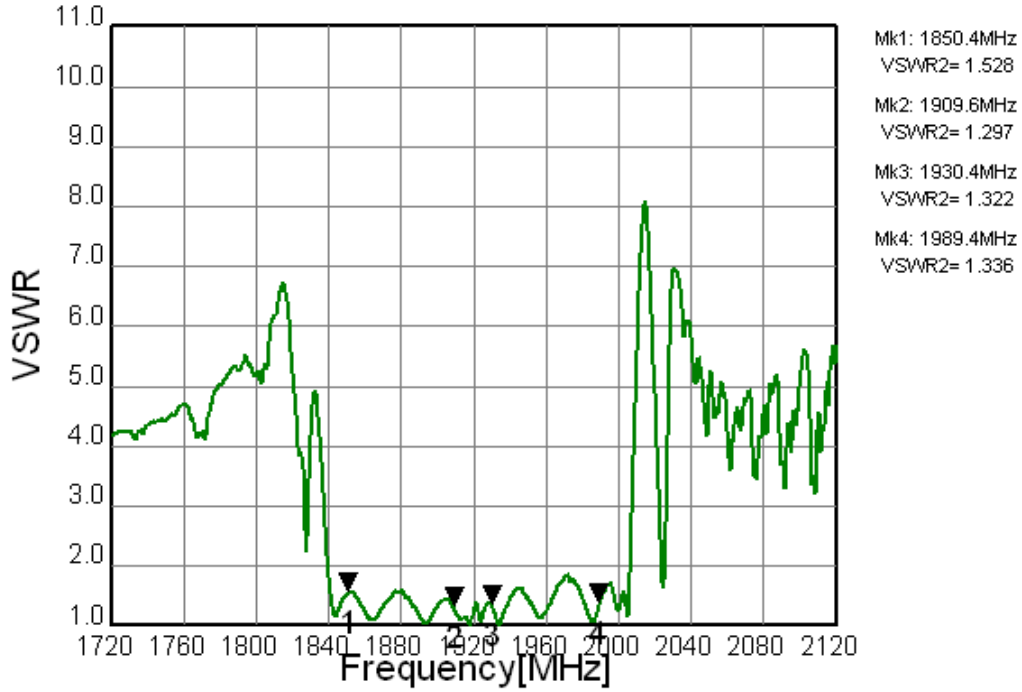
\* Pb Free Part



MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

## Ant Port



**Figure 3-5. Electrical Characteristics**



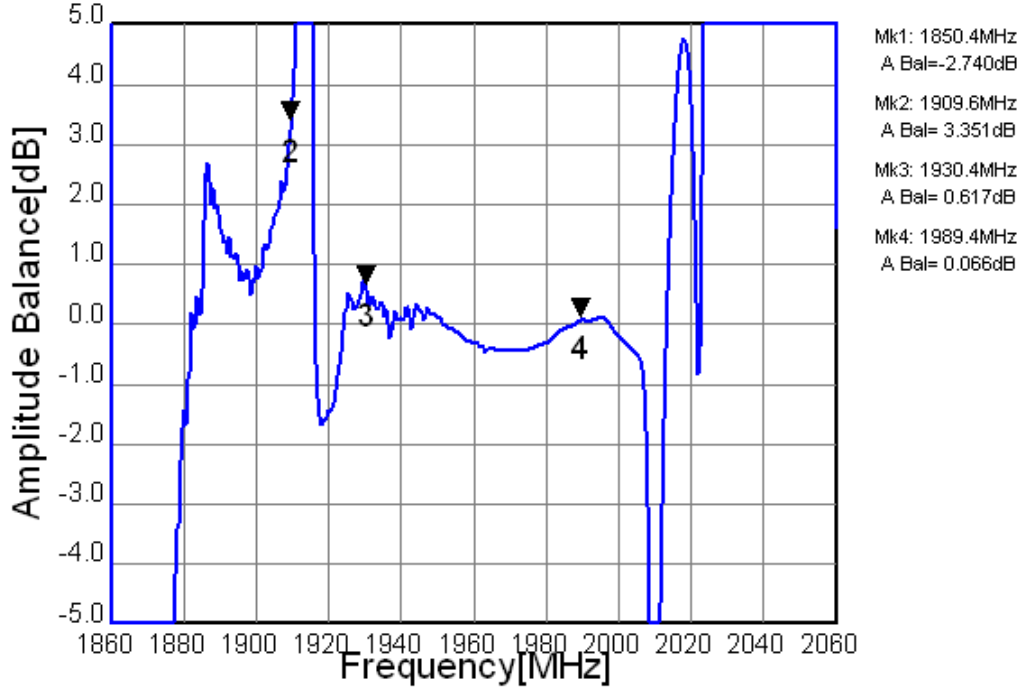
\* Pb Free Part



MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
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Part Number	D6HH1G960BH97	Version 2.0fe	Final

### Ant to Rx (Amplitude balance)



### Ant to Rx (Phase balance)



Figure 3-6. Electrical Characteristics



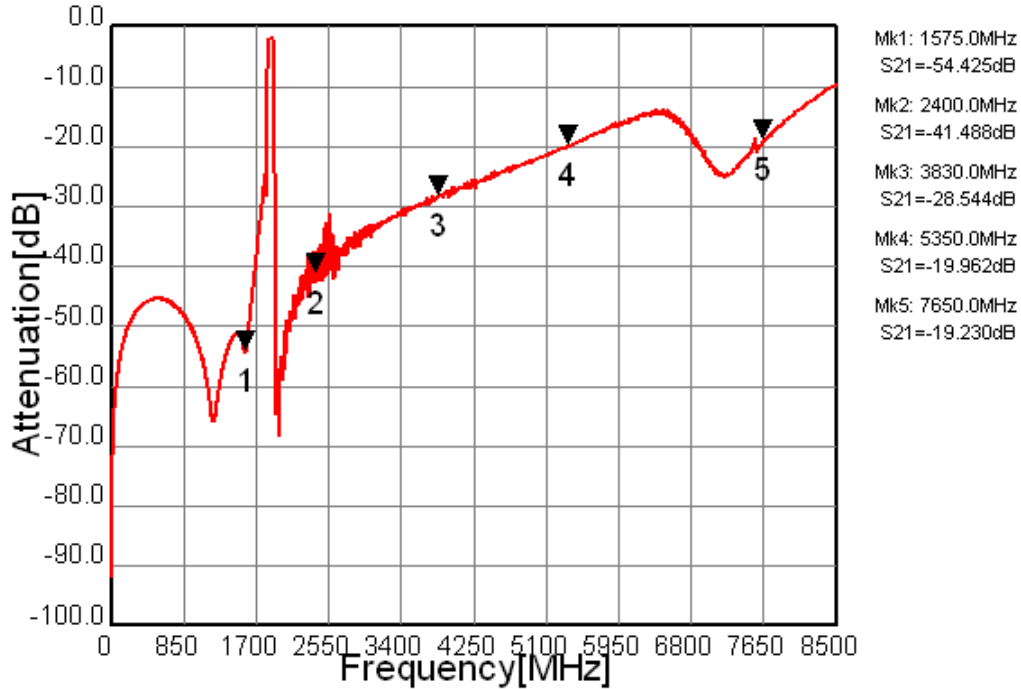
Pb-free  
\* Pb Free Part



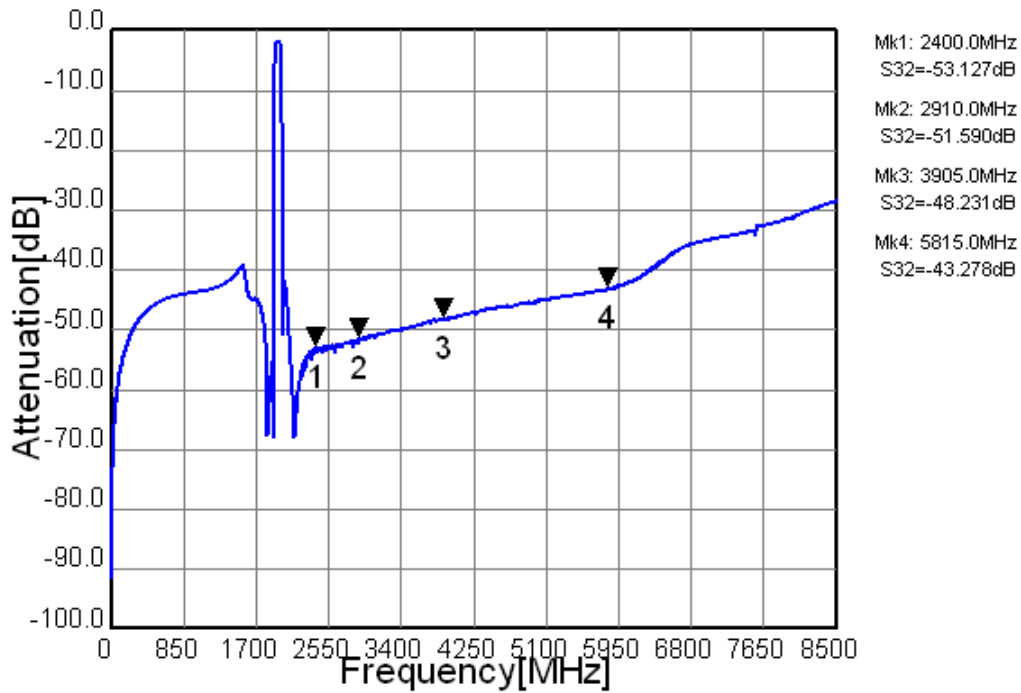
MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
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Part Number	D6HH1G960BH97	Version 2.0fe	Final

### Tx to Ant (Wide span)



### Ant to Rx (Wide span)



**Figure 3-7. Electrical Characteristics**



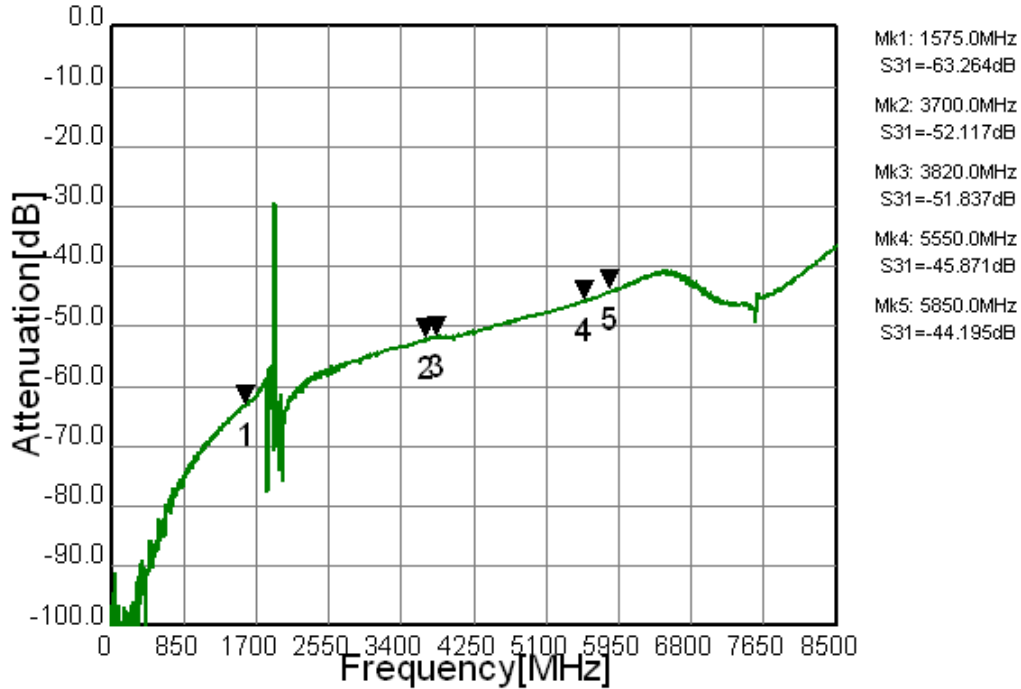
Pb-free  
\* Pb Free Part



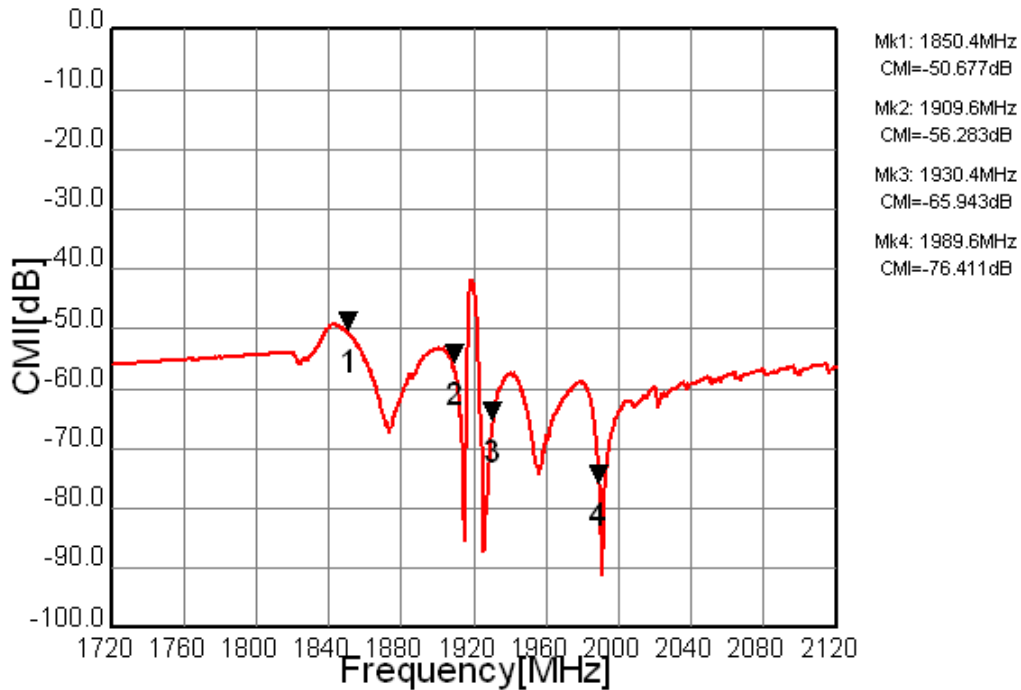
MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

### Tx to Rx (Wide span)



### Common Mode Isolation



**Figure 3-8. Electrical Characteristics**



Pb-free  
\* Pb Free Part



MSL1

Customer Name	Standard	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	W-CDMA Band II / CDMA2000 BC 1 Duplexer	Date	Apr 2, 2012
Part Number	D6HH1G960BH97	Version 2.0fe	Final

## Ordering Code

Ordering Code	Packing	Reel size	Status
D6HH1G960BH97- <b>Z</b>	Tape & Reel	3,000 pcs.	<b>MP</b>
D6HH1G960BH97- <b>ZA</b>	Tape & Reel	less than 3,000 pcs.	<b>MP</b>
D6HH1G960BH97- <b>U</b>	Tape & Reel	10,000 pcs.	<b>MP</b>
D6HH1G960BH97- <b>UA</b>	Tape & Reel	less than 10,000 pcs.	<b>MP</b>
D6HH1G960BH97- <b>Q</b>	Bulk	few pcs.	<b>MP</b>

\*Minimum order quantity (MOQ) is assigned for each inquiry, Please contact to Sales Representatives..

\*MP : Mass Production

## Notice

All of the contents specified herein are subject to change without notice due to technical improvements, etc.

Please contact TAIYO YUDEN Co., Ltd. for further details of product specifications.

Please conduct validation and verification of products in actual condition of mounting and operating environment before commercial shipment of the equipment.

This product is for general electronics equipment such as Audio-Visual equipment, household electronics, office supplies, information services and telecommunications; therefore, in case this product is used for any medical equipment, space equipment, nuclear equipment or disaster prevention equipment, please contact TAIYO YUDEN in advance.

In case this product is used for general electronics equipment or circuits which require high safety and high reliability, thoroughly evaluate on safety and add a protection circuit if necessary.