客户 Customer: 日期 DATE:

纳入仕样书
SPECIFICATION

产 品 名 称 PRODUCT NAME: 声表双工器

SAW Duplexer

贵 司 料 号 YOUR PART NO.:
敝 司 料 号 OUR PART NO.: MS16U1G95-DU01C
版 本 号 VERSION.: V1.2

接受 RECEPTION THE SPECIFICATION HAS BEEN ACCEPTED. 该纳入仕样书已被我司接受 日期： DATE： 公司： COMPANY：		
批准 CFMD	审核 CHKD	接收 RCVD

深圳市麦捷微电子科技股份有限公司
SHENZHEN MICROGATE TECHNOLOGY CO.，LTD
TEL：86-755-28085000
FAX：86-755-28085605

CFMD. 批准	CHKD. 审核	DSGD. 担当
赵拥军	赖定权	赵新佳

纳入仕样书改定履历

MODIFY HISTORY OF SPECIFICATION

NO.	修改日期/DATE	修改内容/CONTENT	批准/APPROVED
1.0	2022.02.28	初稿 /New Released	赵拥军
1.1	2022.06.15	版本升级/Version Upgrade	赵拥军
1.2	2022.10.24	版本升级/Version Upgrade	赵拥军

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1 适用范围 Scope

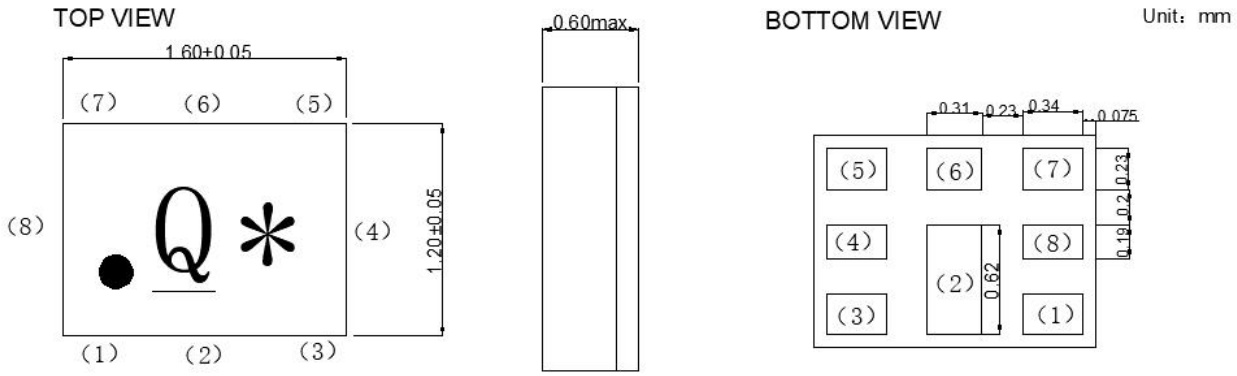
麦捷声表滤波器系列产品设计用于 WIFI、GPS、移动电话和无绳电话机等相关市场中。
Microgate SAW Component is applicable for WIFI/GPS/Mobile phone/Cordless phone relevant market.

2 品名构成 Product Identification

MS	16	U	1G95	–	DU	01	C
①	②	③	④		⑤	⑥	⑦

① 麦捷声表滤波器/Microgate SAW
② 尺寸/Size：16 (18-1814, 16-1612,15-1511,14-1411, 11-1109)
③ 输出/Output：U (B-Balance out, U-Unbalance out)
④ 频率/Frequency：1G95-1.95GHz
⑤ 型号/Type：DU (QP-QPX,DU-Duplexer, DI-Diplexer, Tx-Tx SAW, Rx-Rx SAW)
⑥ 频段/Band：01-Band1
⑦ 流水号/Serial number

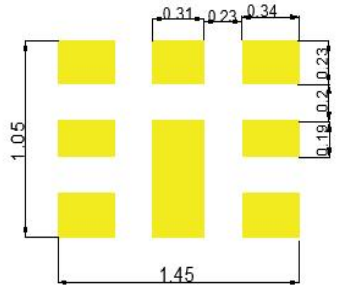
3 尺寸和管脚定义 Dimensions and PIN Configurations



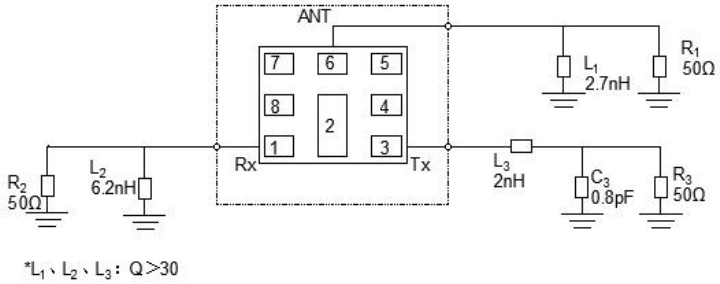
PIN NO.	（1）	（2）	（3）	（4）	（5）	（6）	（7）	（8）
PIN Name	Rx	GND	Tx	GND	GND	ANT	GND	GND

4 推荐焊盘与测试电路 Recommended Land Pattern and Test Circuit

Land Pattern
Unit:mm



Test Circuit
Top View



5 电气性能 Electrical Characteristics

操作温度范围 Operating Temperature Range : -20 to +85℃

保存温度范围 Storage Temperature Range : -40 to +85℃

测试温度范围 Test Temperature：25℃±2℃

湿度敏感等级 Moisture Sensitivity Level: MSL 2a

静电敏感等级 Electrostatic Discharge(ESD) Sensitivity: 250V (Human Body Model)

端口电压 D.C. Volatage between the terminals: 3V (25℃±2℃)

Table1. Electrical Specification

No.	Item		Frequency (MHz)	Specification			
				Min	Typ.	Max.	Unit
1	Tx to ANT	Insertion Loss	1920 ~1980		1.7	2.3	dB
2		Ripple Deviation	1920 ~1980		0.5	1.2	dB
3		Absolute Attenuation	10~1574	29	35		dB
4			420~494	40	45		dB
5			814~849	30	37		dB
6			880~915	30	36		dB
7			925~960	30	36		dB
8			1226~1250	30	35		dB
9			1427.9~1462.9	30	42		dB
10			1475~1511	34	45		dB
11			1559~1606	40	50		dB
12			1605.88~1805	25	33		dB
13			1805~1865	20	24		dB
14			1865~1880	10	26		dB
15			2110~2170	44	55		dB
16			2300~2400	38	43		dB
17			2400~2500	34	39		dB
18			2620~2690	29	33		dB
19			3840~3960	20	26		dB
20			4900~5950	17	25		dB
21		VSWR	1920~1980(Tx)		1.4	2.0	
22			1920~1980(ANT)		1.4	2.0	
23	Input Signal Level		+30dBm, 5000h(55℃)				

Table2. Electrical Specification

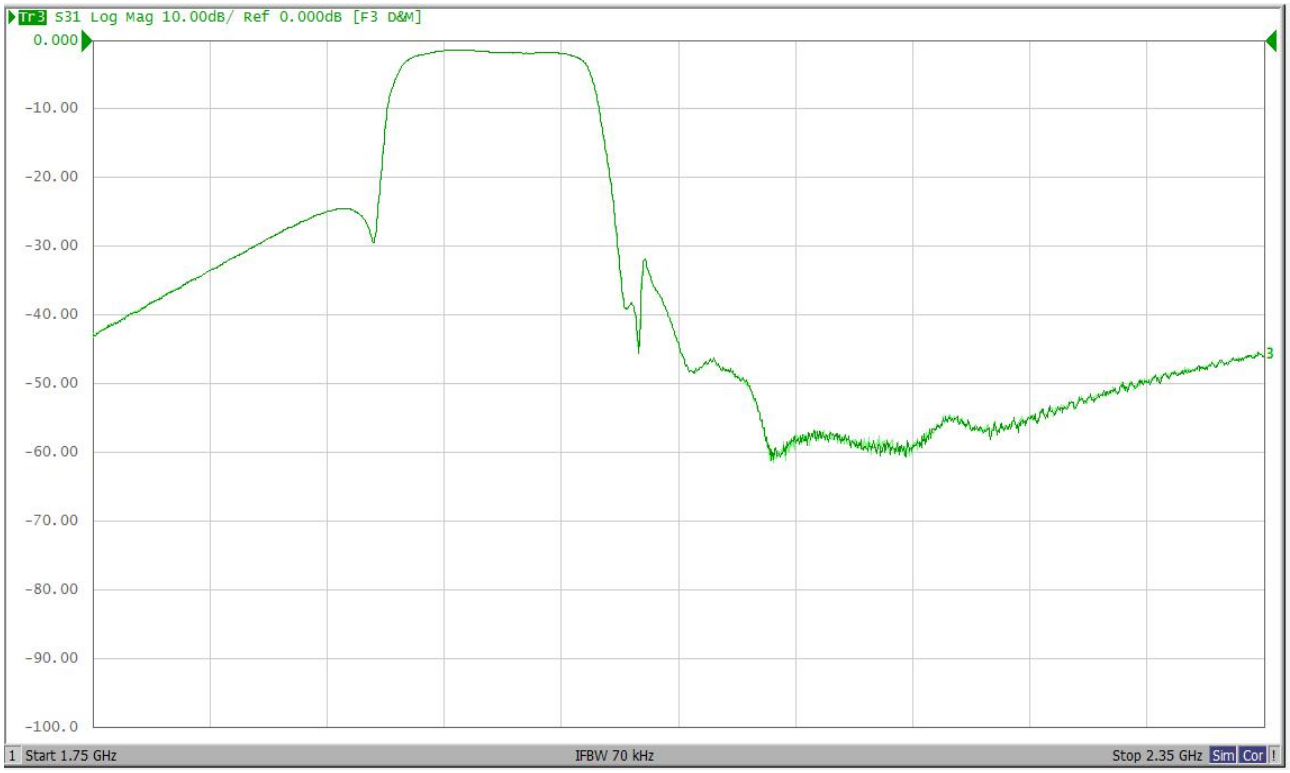
No.	Item		Frequency (MHz)	Specification			
				Min	Typ.	Max.	Unit
1	ANT to Rx	Insertion Loss	2110~2170		1.9	2.5	dB
2		Ripple Deviation	2110 ~2170		0.6	1.5	dB
3		Absolute Attenuation	1~1920	33	39		dB
4			718~748	40	55		dB
5			814~849	40	53		dB
6			880~915	40	50		dB
7			1427~1447	39	45		dB
8			1730~1790	35	41		dB
9			1710~1785	33	39		dB
10			1920~1980	45	49		dB
11			1980~2015	35	45		dB
12			2255~6000	24	30		dB
13			2300~2400	26	31		dB
14			2400~2500	30	35		dB
15			2500~2570	38	45		dB
16			4030~4150	33	40		dB
17			4220~4340	32	39		dB
18			4900~5950	27	35		dB
19		VSWR	2110 ~2170(ANT)		1.6	2.1	
20			2110 ~2170(Rx)		1.7	2.1	

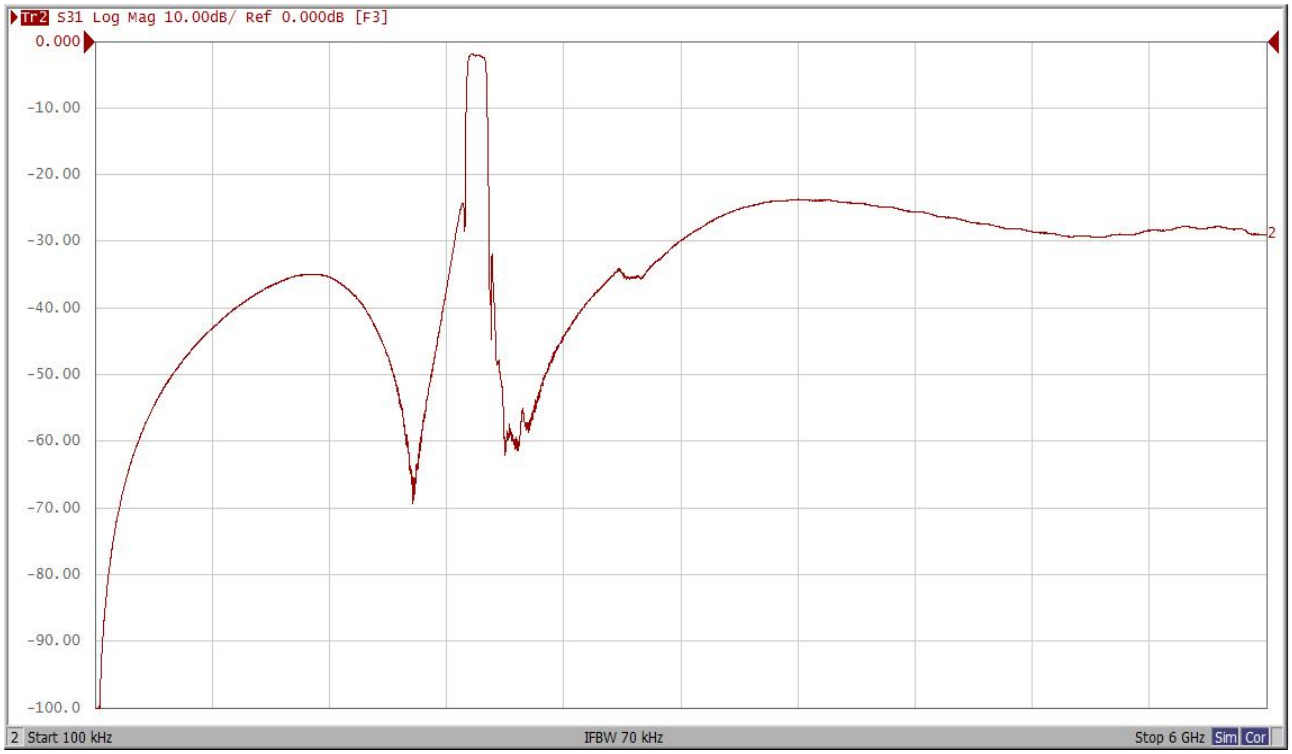
Table3. Electrical Specification

No.	Item		Frequency (MHz)	Specification			
				Min	Typ.	Max.	Unit
1	Tx to Rx	Isolation	1920~1980	50	53		dB
2			2110~2170	50	53		dB

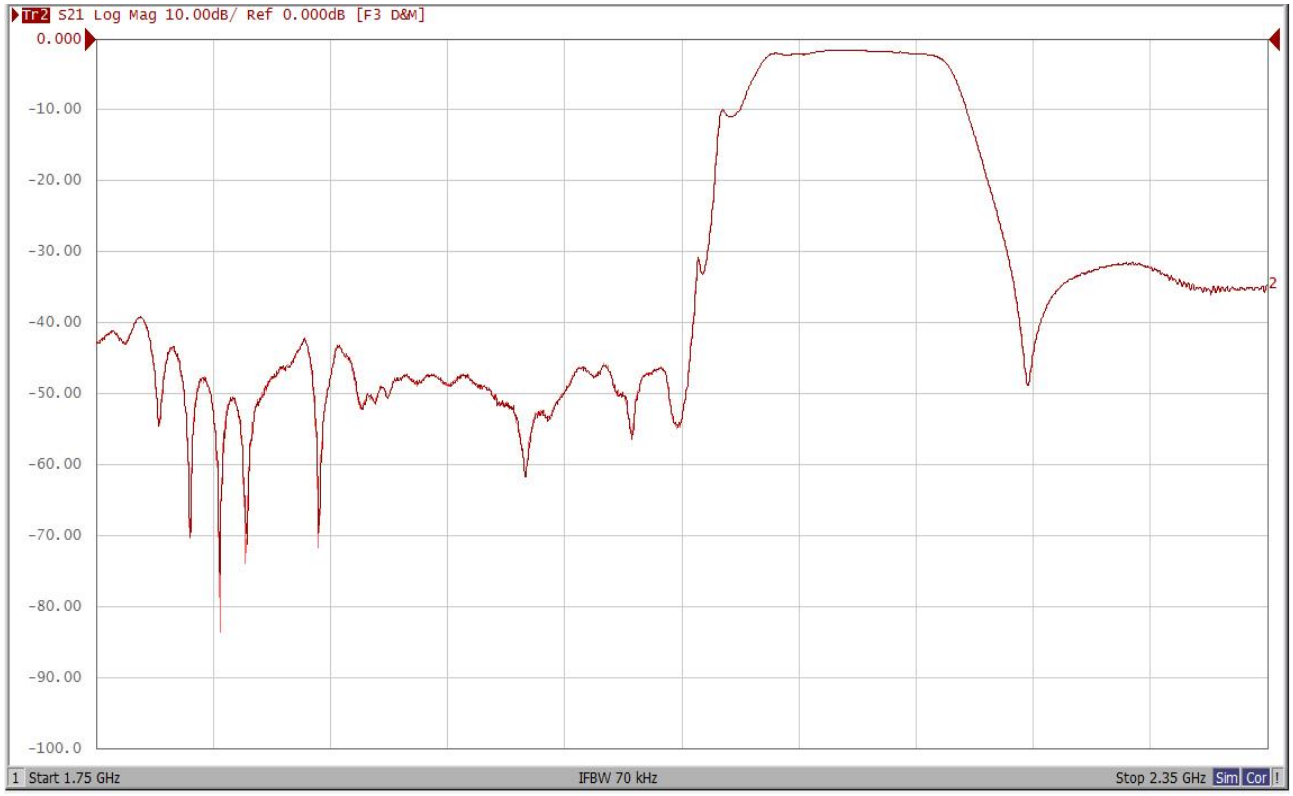
Frequency Performance

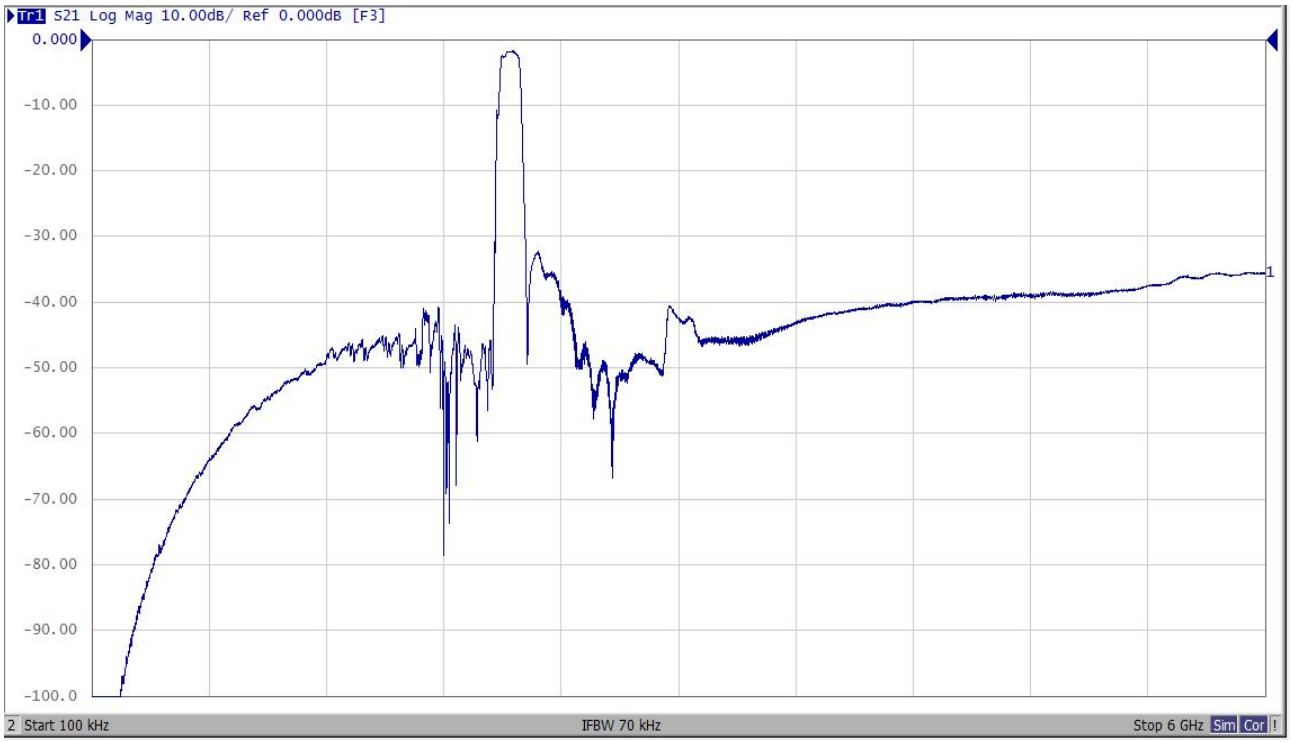
Tx to ANT



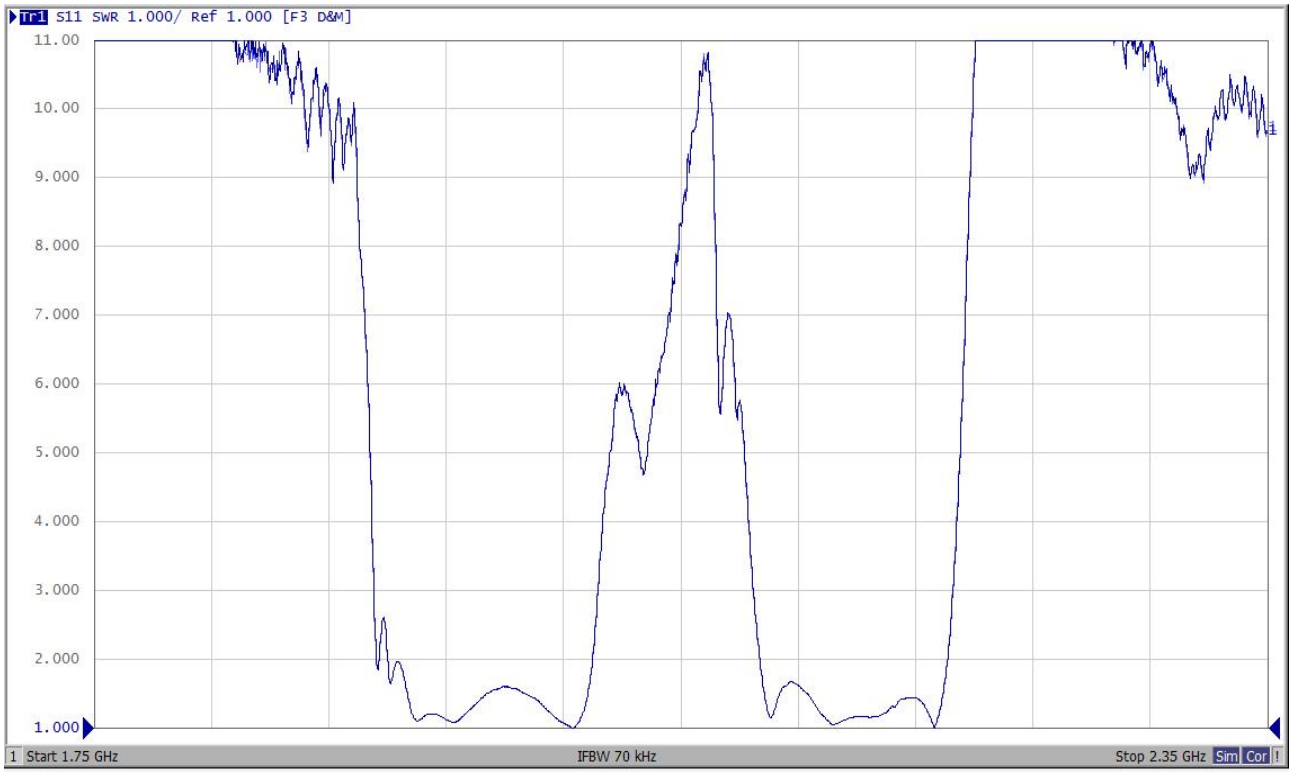


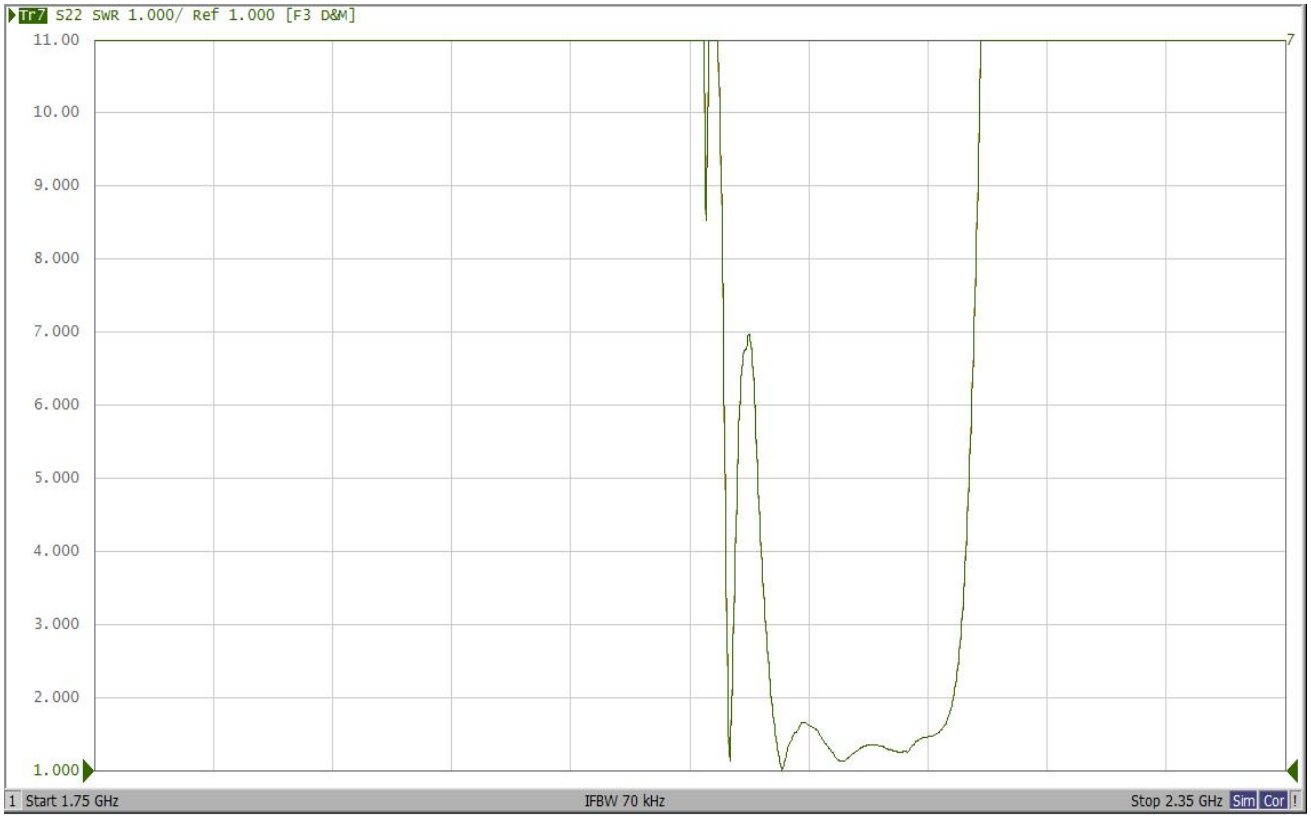
ANT to Rx

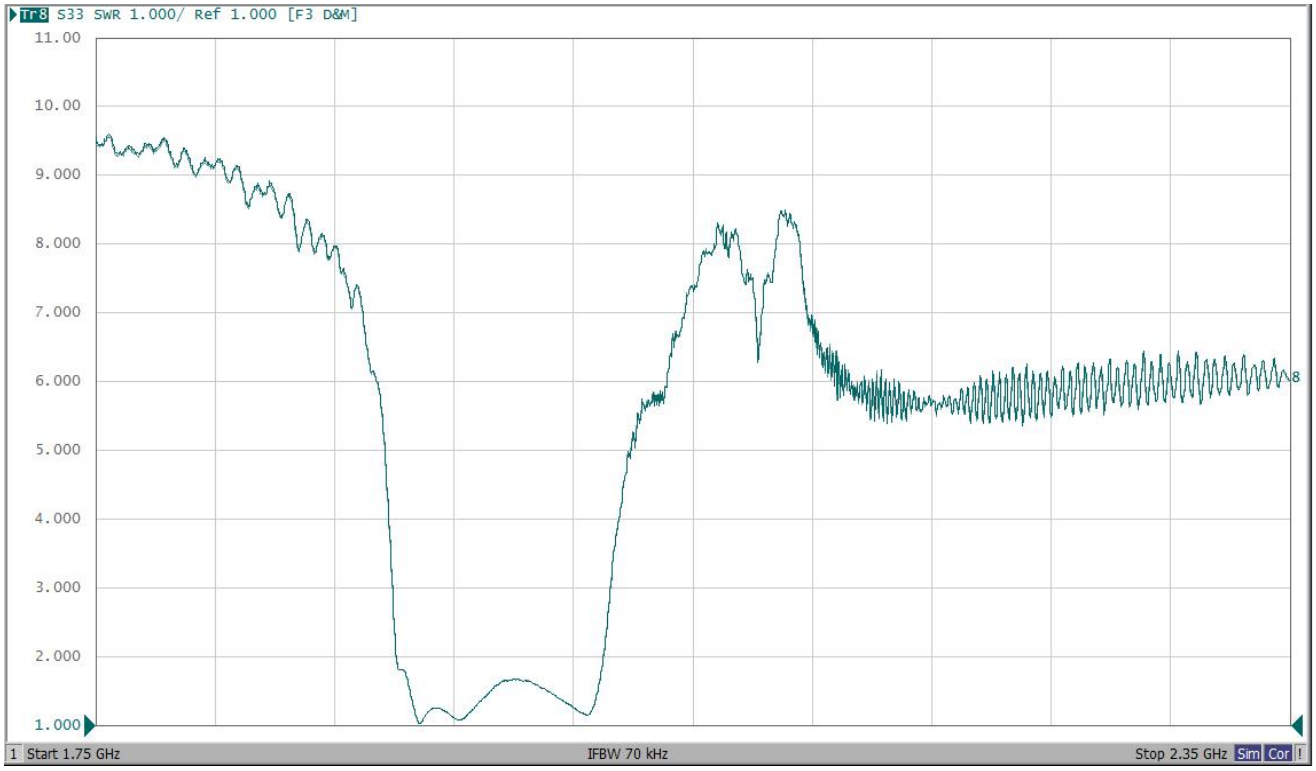

Tr2 S21 Log Mag 10.00dB/ Ref 0.000dB [F3 D&M]
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
-100.0
1 Start 1.75 GHz
IFBW 70 kHz
Stop 2.35 GHz
Sim
Cor


Tr1 S21 Log Mag 10.00dB/ Ref 0.000dB [F3]
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
-100.0
2 Start 100 kHz
IFBW 70 kHz
Stop 6 GHz
Sim
Cor

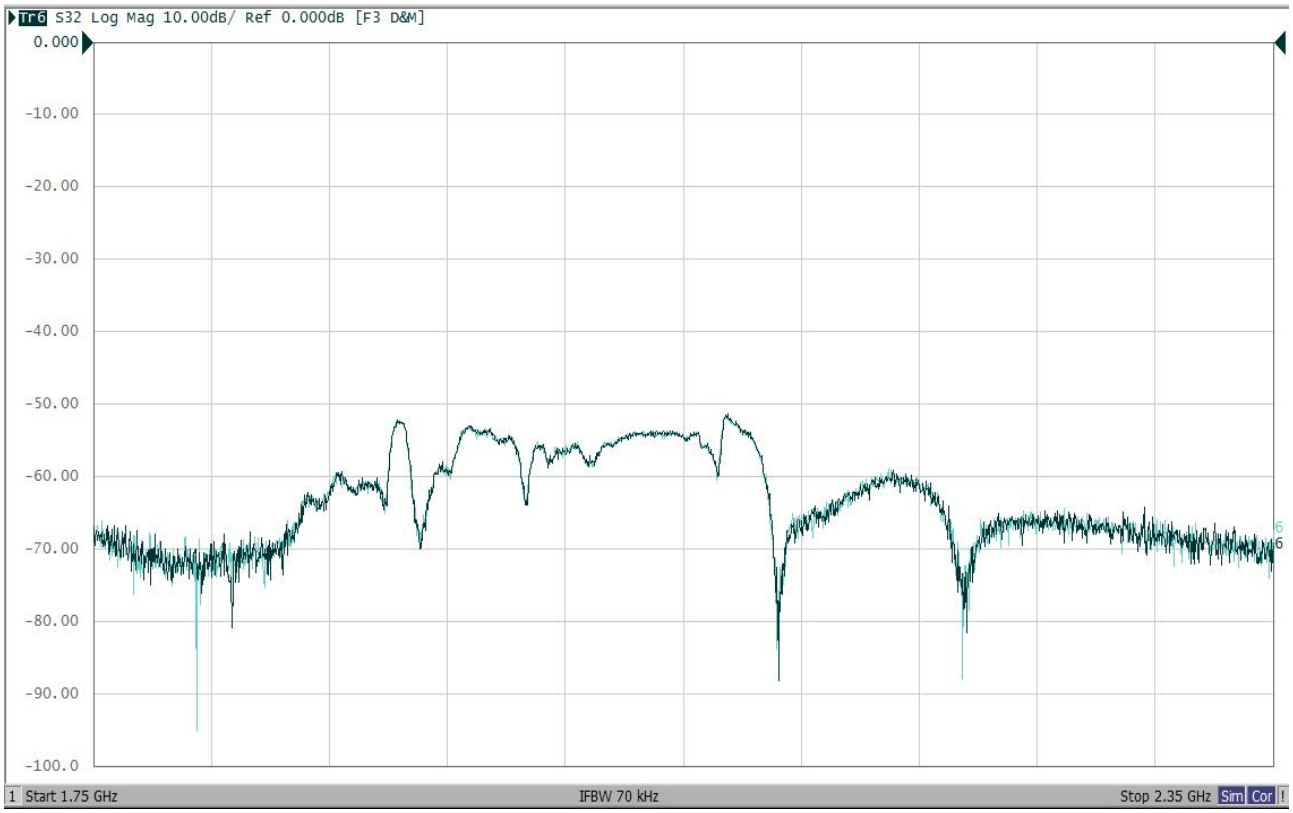
VSWR


Tr1 S11 SWR 1.000/ Ref 1.000 [F3 D&M]
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 1.75 GHz
IFBW 70 kHz
Stop 2.35 GHz
Sim
Cor


Tr7 S22 SWR 1.000/ Ref 1.000 [F3 D&M]
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 1.75 GHz
IFBW 70 kHz
Stop 2.35 GHz
Sim
Cor

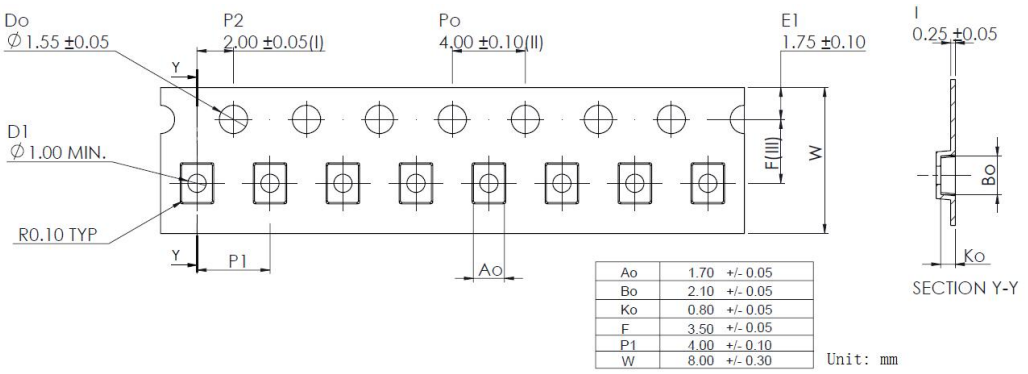


Isolation Tx to Rx



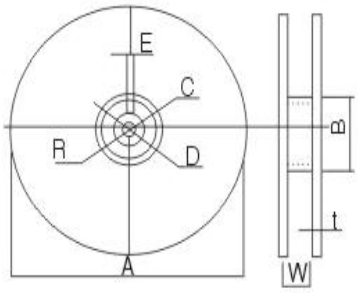
6 包装 Packaging

① 编带尺寸 Dimensions of Tape:



② 带轮尺寸 Dimensions of Reel

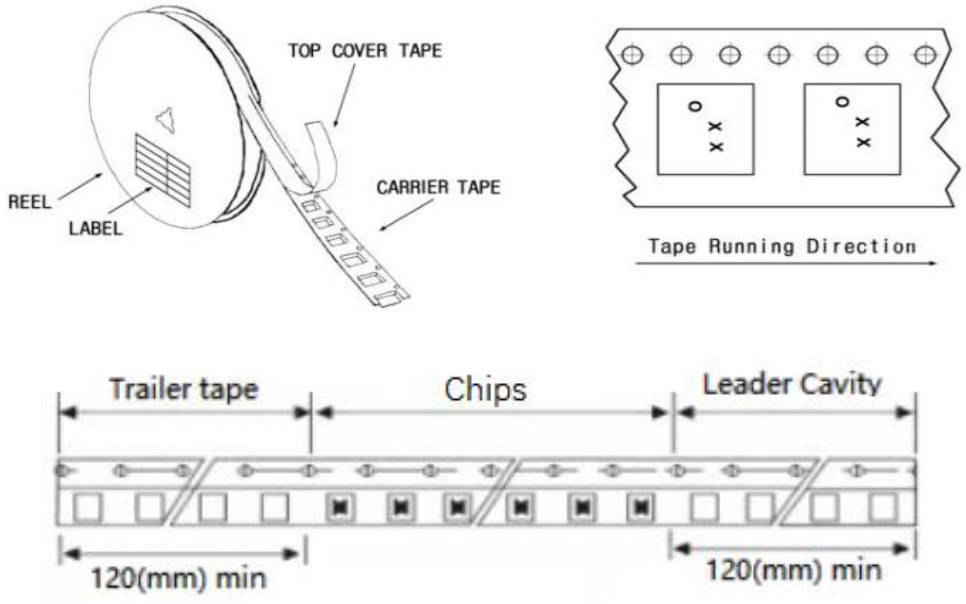
Unit: mm



Reel material: PS (Polystyrene)

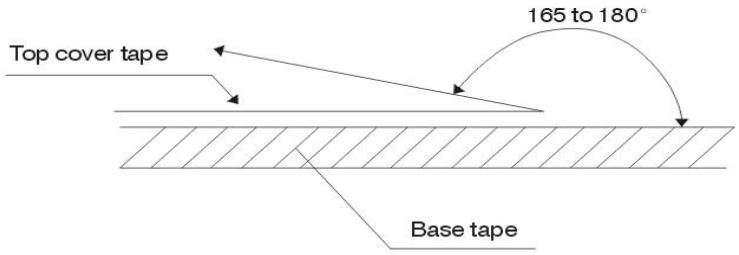
A	178±2
B	60±2
C	13.0±0.5
D	21.0±0.8
E	2.0±0.5
W	8.5±1.0
t	1.2±0.2
R	1.0±0.25

③ 编带简图及拉伸方向 Taping figure and drawing direction:



④ 盖带的剥离强度 Peeling strength of cover tape:

盖带 Cover tape	0.1~1.0N (10gf~100gf)



测试条件 Test condition:

1) 剥离角度 peel angle: 165°~180° vs. carrier tape.
2) 剥离速度 peel speed: 300mm/min±10%.

⑤ 包装数量 Packaging quantities: 3000 PCS / Reel

7 装箱清单及标志 Packing documents and marking

① 包装文件 Packing documents

a.装箱清单 Packing list.

b.合格证书 Certificate of compliance.

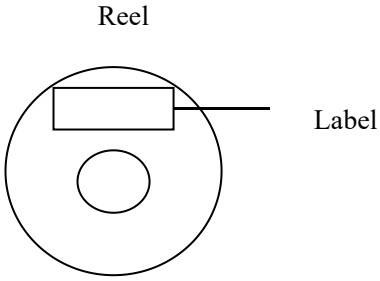
② 盘上标记 Marking on reels:

a. 麦捷料号 MICROGATE Part No.

b. 生产批号 Lot number

c. 盘装数量 Quantity per reel

d. 检验员号 Inspector No.



以上内容必须在标签上注明.All above shall be shown on marking label

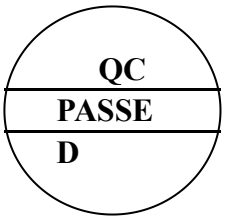
麦捷公司标签如下所示：MICROGATE marking label will be as following:

MICROGATE

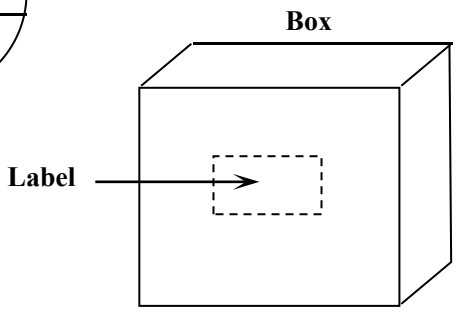
CUSTOMER:	P. O. NO	
CUSTOMER PART NO:	DATE CODE	LOT NO
MG PART NO:	QUANTITY	INSP. NO

MG PART NO

检验合格后，检验员在标签上盖上合格章。合格章如下所示：The eligible reels will be pressed a mark onto the surface. The mark will be as following:



③ 内包装盒标记:Marking on inner box



a.型号 MICROGATE part No.

b.每盒数量 Quantity per box

c. 包装日期 Date

以上内容必须在标签上注明（标签见 7.2 所示）。Above shall be shown on marking label (The marking label is shown in item 7.2).

④ 外包装箱标记 Marking on outer case:

1) 制造商 Manufacturer: “MICROGATE” ①

“中国深圳制造” “Made in Shenzhen CHINA”②

2) 发运标记 Ship marking:

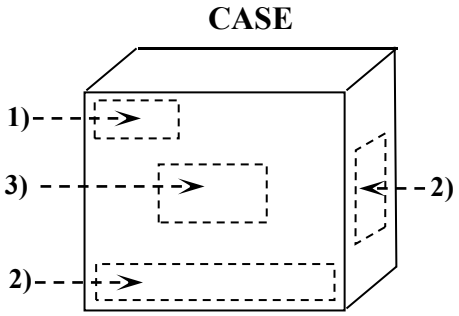
“向上” “UP”, “小心轻放”“HAND CARE”, “防潮”“MOISTURE-PROOF”.

3) 包装标签包括以下内容 Packing label include the following:

a.型号 MICROGATE Part No

b.总数量 Total quantity per case

c.包装日期 Date;



以上内容必须在标签上注明。(参见 7.2 所示)

All above shall be shown on marking label. (The marking label is shown in item 7.2)

8 保管 Storage

保存条件 Storage conditions

●存放货物的库房应满足以下条件 Products should be storage in the warehouse on the following conditions

温度 Temperature: ≤40℃

湿度 Humidity : ≤70% relative humidity

不允许温、湿度有极剧变化。No rapid change on temperature and humidity

●禁止将产品保管在腐蚀性物质中，例如硫磺、氯气或者酸，否则将引起端头氧化，导致降低焊接性。Don't keep products in corrosive gases such as sulfur, chlorine gas or acid, or it may cause oxidization of electrode, resulting in poor solder ability.

●为了避免受潮气、灰尘等物质的影响，产品应保管于货架上。Products should be storage on the palette for the prevention of the influence from humidity, dust and so on.

●产品保管在库房中时，应避免热冲击，振动以及直接光照等等。Products should be storage in the warehouse without heat shock, vibration, and direct sunlight and so on.

●产品应密封包装 Products should be storage under the airtight packaged condition.