客户 CUSTOMER: 日期 DATE:

规格书
SPECIFICATION

产 品 名 称 PRODUCT NAME:	Diplexer
贵 司 料 号 YOUR PART NO.:	
敝 司 料 号 OUR PART NO.:	MDPX21M0914P69-D72M
版 本 号 VERSION.:	V1.1

接受 RECEPTION THE SPECIFICATION HAS BEEN ACCEPTED. 该规格书已被我司接受 日期: DATE： 公司： COMPANY：		
批准 CFMD	审核 CHKD	接收 RCVD

本规格书共 10 页

MANUFACTURING NAME

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梁启新	付迎华	曾艳峰

规格书改定履历 MODIFY HISTORY OF SPECIFICATION

Ver.	DATE	CONTENT	APPROVED
1.0	2024.08.02	初稿 Constitute	梁启新
1.1	2024.12.20	更新电性参数典型值及特性曲线 Update the Typical Values and Characteristic Curves	付迎华

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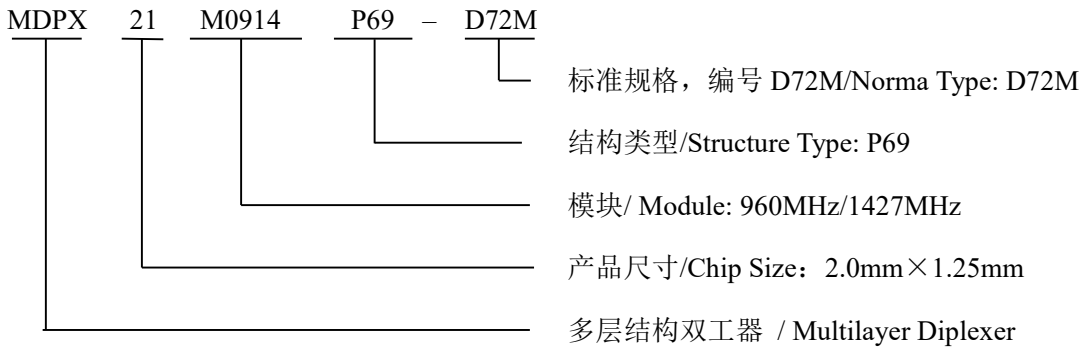
1 适用范围 Scope

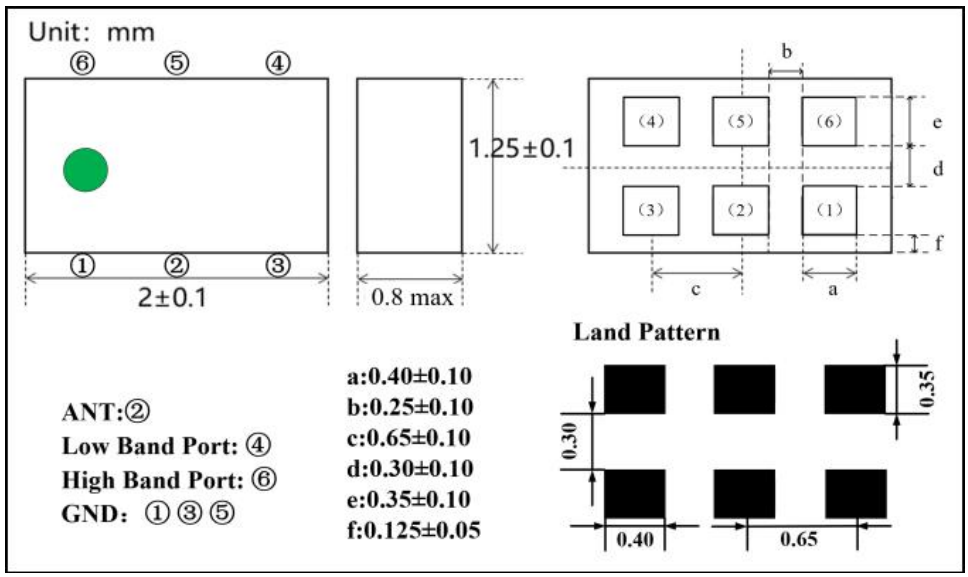
麦捷 Diplexer（MDPX 系列）产品设计用于 5G、LTE、WIFI、Bluetooth、PDA 和无绳电话机中，具有低的插入损耗、高的衰减和小体积 SMD 片式设计，能减少复杂的调校工作，可以简化电路设计。

"Microgate" Microwave Diplexer series are designed to be used in 5G、LTE、WIFI、Bluetooth,、PDA & Cordless phones with low insertion loss and high attenuation as well as small size SMD chip design, which can simplify your complex tuning and circuit design.

2 品名构成 Product Identification



3 形状、尺寸和材料 Appearance, Dimensions and Material



Part Name 名称	Structure and Material 结构及材料
Resonator 谐振体	Dielectric Material LTCC 介质材料
In/Output Terminals 输入/输出	Ag 银
Ground Base 接地面	Ag 银

4 测试条件 Testing Conditions

除非另有规定，否则在以下条件下测试 <Unless otherwise specified>

温度 Temperature : Ordinary Temperature (-40 to +85℃)

湿度 Humidity : Ordinary Humidity (25 to 85% RH)

大气压强 Atmospheric Pressure : 86 to 106 kPa

5 电气性能 Electrical Characteristics

操作温度范围 Operating Temperature Range : -40 to +85℃

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

功率容量 Power capacity : 3 W Max.

湿敏等级 Moisture sensitivity levels :MSL1

5.1 LB-ANT Spec requirement

Parameter		Symbol	Spec Requirement			Notes
			Min.	Typ.	Max.	
Frequency range		MHz	617		960	
Insertion loss	617~960MHz	dB		0.48	0.65	@25℃
					0.75	@-40~+85℃
Return Loss	617~960MHz	dB	16.0	24.3		
Absolute attenuation	1280~1350MHz	dB	3.0	16.0		
	1427.9~1698MHz	dB	20.5	27.1		
	1710~2200MHz	dB	25.0	28.9		
	2300~2690MHz	dB	26.0	32.0		
	3400~3700MHz	dB	22.0	37.8		
	5150~5925MHz	dB	25.0	36.8		
	2200~6000MHz	dB	20.0	31.0		
	6000~7200MHz	dB	10.0	33.8		
	7200~7500MHz	dB	7.0	34.3		
	7500~9000MHz	dB	2.0	32.1		
	9000 ~ 12750MHz	dB	0.5	9.2		

5. 2 MHB-ANT Spec requirement

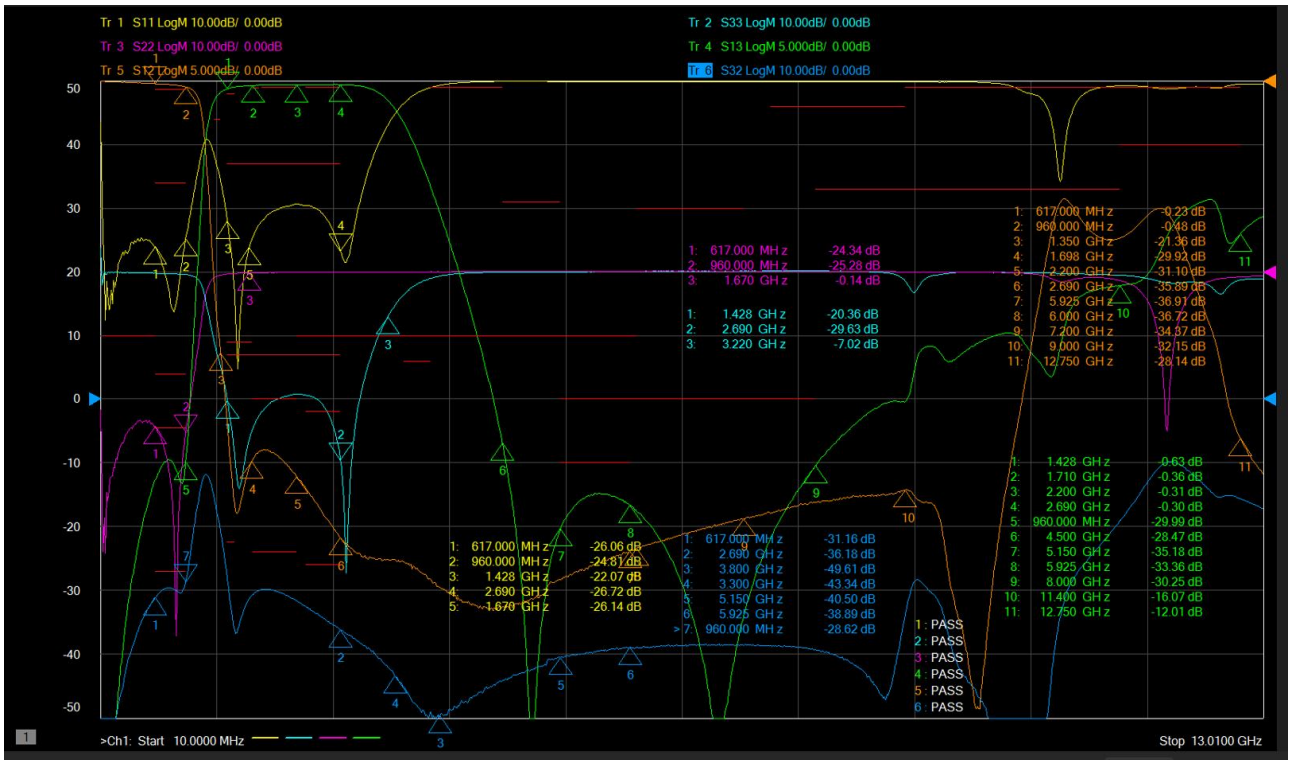
Parameter		Symbol	Spec Requirement			Notes
			Min.	Typ.	Max.	
Frequency range		MHz	1427.9		2690	
Insertion loss	1427.9~1510.9 MHz	dB		0.63	1.00	@25℃
		dB			1.10	@-40~+85℃
	1710~1785MHz	dB		0.36	0.57	@25℃
		dB			0.67	@-40~+85℃
	1805~2200MHz	dB		0.33	0.50	@25℃
		dB			0.60	@-40~+85℃
	2300~2690MHz	dB		0.29	0.50	@25℃
		dB			0.60	@-40~+85℃
Return Loss	1427.9~2690MHz	dB	13.0	19.2		
Absolute attenuation	40~617 MHz	dB	20.0	31.4		
	617~960MHz	dB	27.3	29.8		

	3700~4500 MHz	dB	0.5	8.3		
	4500~5150 MHz	dB	9.5	28.4		
	5150~5925 MHz	dB	30.0	32.4		
	5925~8000MHz	dB	25.0	30.1		
	8000~11400MHz	dB	8.5	16.0		
	11400~12750MHz	dB	5.0	9.3		

5. 3 LB-MHB Spec requirement

Parameter		**Symbol**	**Spec Requirement**			**Notes**
			Min.	Typ.	Max.	
Isolation LB to MHB	617~960 MHz	dB	27.0	29.5		
	1427.9~1510.9MHz	dB	22.5	28.3		
	1710~2200MHz	dB	24.0	29.8		
	2300~2690MHz	dB	26.0	32.5		

6 特性曲线 Characteristic Curve



7 焊接条件 Recommended Soldering Conditions

1、焊剂 Flux, Solder

① 使用松香助焊剂，禁止使用卤化物含量起过 0.2wt%的强酸性助焊剂。

Use rosin-based flux. Don't use highly acidic flux with halide content exceeding 0.2wt% (chlorine conversion value).

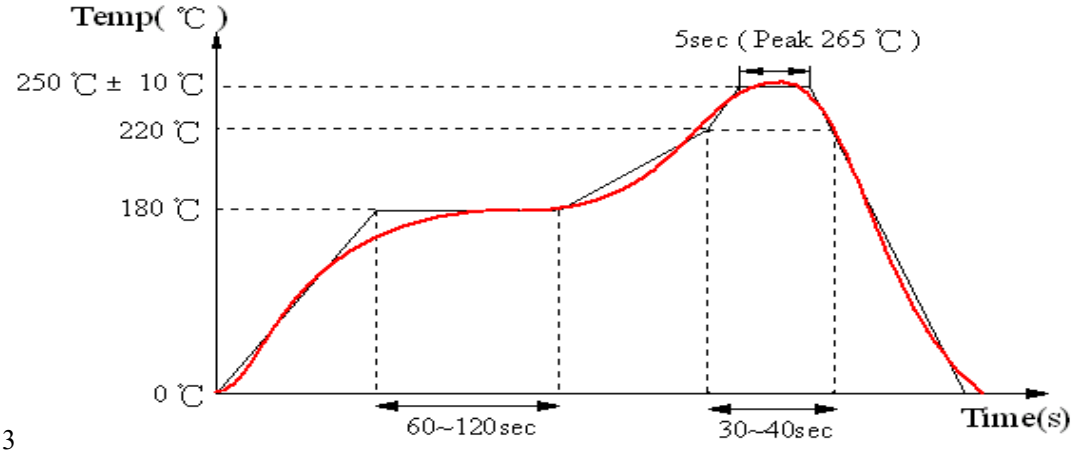
② 使用纯锡焊料 Use Sn solder.

2、回流焊条件 Reflow soldering conditions

●预热时，产品表温与焊料温度的温差最大不允许超出 150℃，焊接完后冷却时，产品表温与溶剂温度之间的温差最大不允许超出 100℃。预热不足有可能引发产品表面裂纹，导致产品品质下降。

Pre-heating should be in such a way that the temperature difference between solder and product surface is limited to 150℃ max. Cooling into solvent after soldering also should be in such a way that temperature difference is limited to 100℃ max. Unwrought pre-heating may cause cracks on the product, resulting in the deterioration of products quality.

●标准回流焊曲线 Standard soldering profile.



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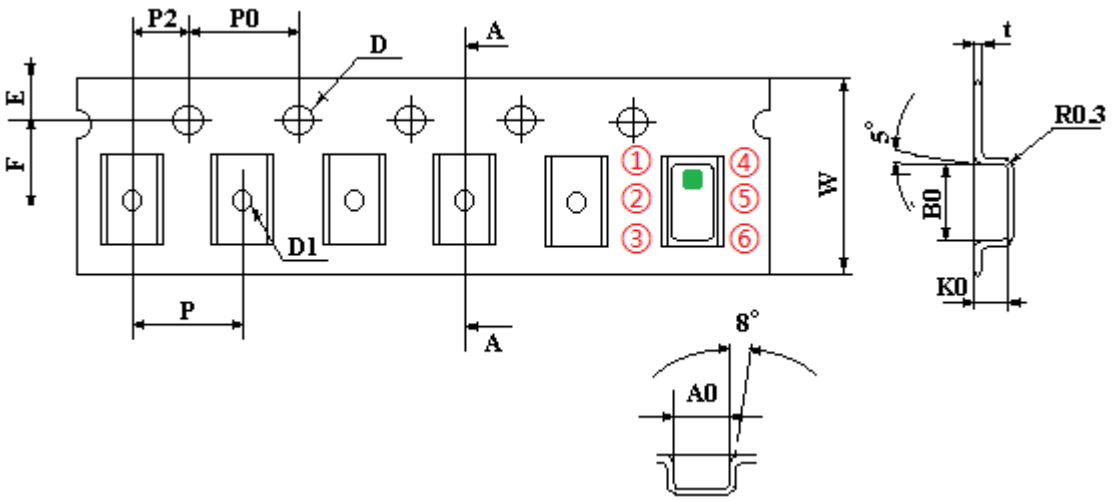
当使用电烙铁进行手工焊接时，以下条件必须严格遵守 The following conditions must be strictly followed when using a soldering iron.

预热 Pre-heating	150℃, 1 minute
尖端温度 Tip temperature	350℃ max
输出功率 Soldering iron output	80w max
电烙铁头尖端尺寸 End of soldering iron	φ3mm max
焊接时间 Soldering time	3 seconds max

8 包装 Packaging

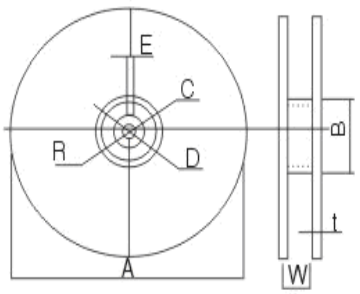
①编带尺寸 Dimensions of Tape:



W	P	E	F	P2	D	D1
8.00+0.30/-0.10	4.00±0.10	1.75±0.10	3.50±0.05	2.00±0.05	1.50+0.10/-0.00	1.00+0.25/-0.10
P0	10P0	A0	B0	K0	t	Tape Material
4.00±0.10	40.00±0.20	1.45±0.10	2.35±0.10	1.15±0.10	0.22±0.05	塑带 plastic carrier tape

② 带轮尺寸 Dimensions of Reel

Unit: mm



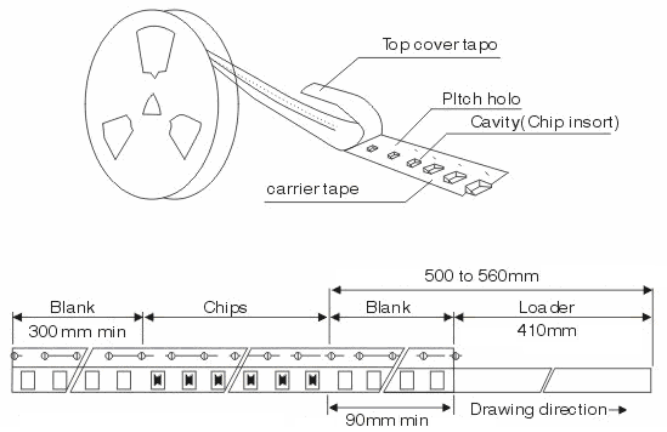
Reel material: PS (Polystyrene)

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 编带抗拉强度 Pulling strength of tapes:

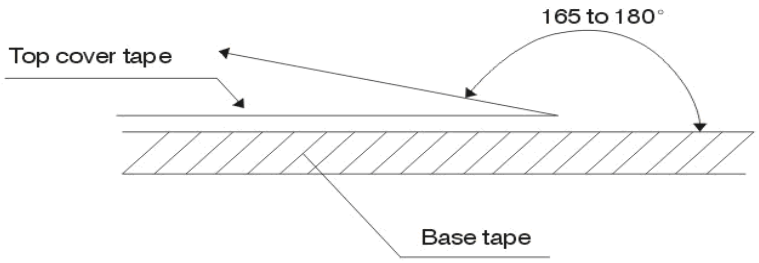
载带 Carrier tape	10N or more (1kgf or more)
上盖带 Cover tape	5N or more (1kgf or more)

④ 编带简图及拉伸方向 Taping figure and drawing direction:



⑤ 盖带的剥离强度 Peeling strength of cover tape:

盖带 Cover tape	0.2~0.6N (20gf~60gf)



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%.

⑥ 包装数量 Packaging quantities: 3000 PCS / Reel