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.: MDPX21M1517P69-D53
版 本 号 VERSION.: V1.2

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 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	2021.11.09	初稿 Constitute	梁启新
1.1	2023.09.01	更新电性参数典型值及特性曲线 Update the Typical Values and Characteristic Curve	付迎华
1.2	2025.09.16	更新最小包装数量 4K→3K Update the Packaging quantities 4K→3K	付迎华

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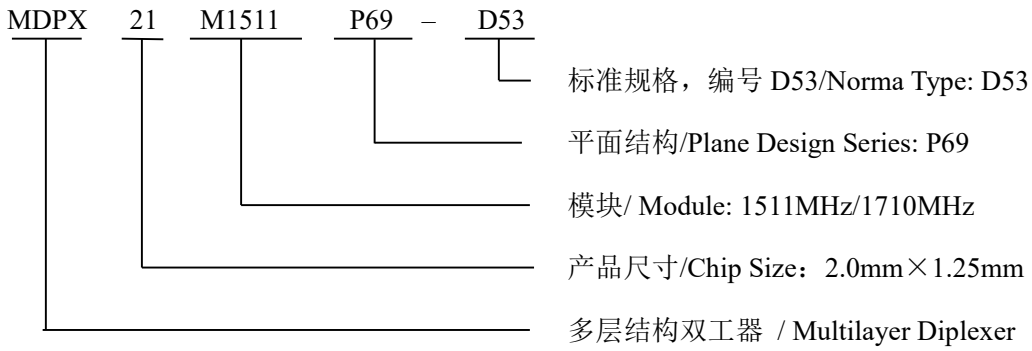
1 适用范围 Scope

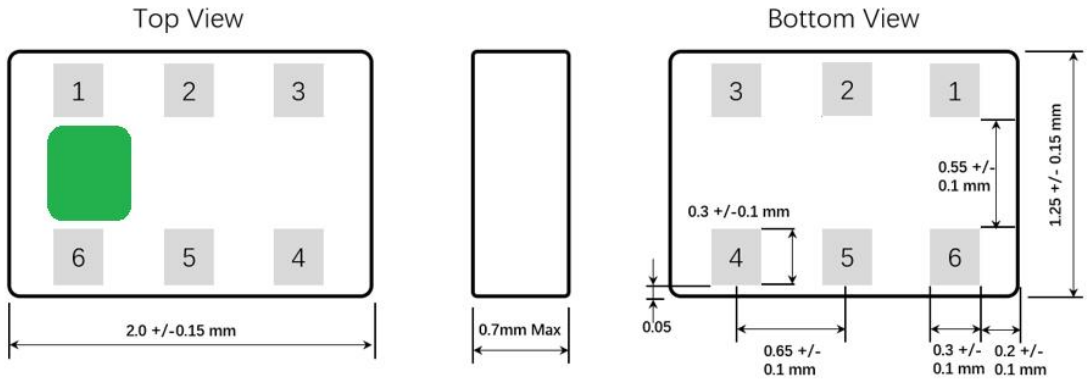
麦捷 Diplexer（MDPX 系列）产品设计用于 5G、LTE、WIFI、Bluetooth、PDA 和无绳电话机中，具有低的插入损耗、高的衰减和小体积 SMD 片式设计，能减少复杂的调校工作，可以简化电路设计。

"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



Terminal functions

（1）	（2）	（3）	（4）	（5）	（6）
Low Band	GND	High Band	GND	Common	GND

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 ~+85℃

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

湿度敏感等级 Moisture Sensitivity levels: MSL1

静电防护能力 Human Body Model （HBM）:1000V @25±5℃

Charged Device Model （CDM）:250V @25±5℃

LB port

Parameter		Symbol	Spec.			Note
			Min.	Typ.	Max.	
Frequency range		MHz	617		1511	
Max insertion loss	617-960MHz	dB	/	/	1.1	-40~85°C
Max insertion loss	617-960MHz	dB	/	0.54	0.9	25±5℃
Max insertion loss	1452-1496MHz	dB	/	/	1.6	-40~85°C
Max insertion loss	1452-1496MHz	dB	/	1.05	1.5	25±5℃
Max insertion loss	1496-1511MHz	dB	/	/	2.0	-40~85°C
Max insertion loss	1496-1511MHz	dB	/	1.53	1.8	25±5℃
Max insertion loss	1511-1517MHz	dB	/	/	2.1	-40~85°C
Max insertion loss	1511-1517MHz	dB	/	1.64	1.9	25±5℃
VSWR @low band port	617-1517MHz	/	/	1.18	2.0	
VSWR @common port	617-1517MHz	/	/	1.21	2.0	
Absolute attenuation	1710-1785MHz	dB	10	21.3	/	
	1805-1880MHz	dB	12	19.6	/	
	1920-1980MHz	dB	12	16.2	/	
	2110-2170MHz	dB	12	16.2	/	
	1880-2200MHz	dB	12	16.1	/	
	2300-2400MHz	dB	15	17.6	/	
	2496-2690MHz	dB	15	20.0	/	
Power Capacity		W	3.0 Max.			

HB port

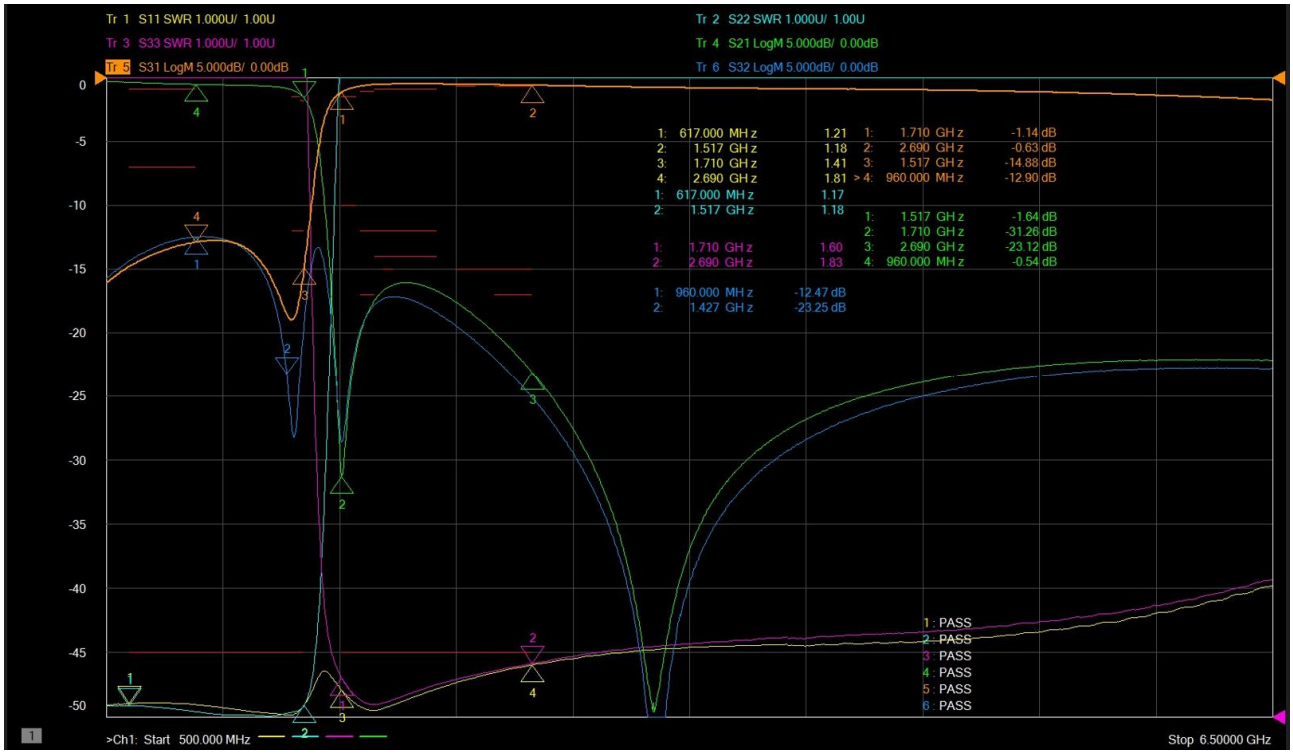
Parameter		Symbol	Spec.			Notes
			Min.	Typ.	Max.	
Frequency range		MHz	1710	/	2690	
Max insertion loss	1710-1785MHz	dB	/	/	1.6	-40~85°C
Max insertion loss	1710-1785MHz	dB	/	1.13	1.5	25±5℃
Max insertion loss	1805-1880MHz	dB	/	/	1.2	-40~85°C
Max insertion loss	1805-1880MHz	dB	/	0.68	1.1	25±5℃
Max insertion loss	1880-2200MHz	dB	/	/	1.0	-40~85°C
Max insertion loss	1880-2200MHz	dB	/	0.57	0.9	25±5℃
Max insertion loss	2300-2400MHz	dB	/	/	0.8	-40~85°C

Max insertion loss	2300-2400MHz	dB	/	0.55	0.7	25±5℃
Max insertion loss	2496-2690MHz	dB	/	/	0.8	-40~85°C
Max insertion loss	2496-2690MHz	dB	/	0.62	0.7	25±5℃
VSWR @high band port	1710-2690MHz	/	/	1.81	2.0	
VSWR @common port	1710-2690MHz	/	/	1.83	2.0	
Absolute attenuation	617-960MHz	dB	7	12.9	/	
	1452-1496MHz	dB	12	17.1	/	
	1496-1511MHz	dB	12	15.6	/	
	1511-1517MHz	dB	12	14.9	/	
Power Capacity		W	3.0 Max.			

LB-HB port

Parameter		**Symbol**	**Spec Requirement**[1)2)]			Note
			Min.	Typ.	Max.	
Isolation	617-960MHz	dB	7	12.4	/	
	1452-1496MHz	dB	12	23.0	/	
	1496-1511MHz	dB	12	20.2	/	
	1511-1517MHz	dB	12	19.2	/	
	1710-1785MHz	dB	10	20.9	/	
	1805-1880MHz	dB	17	17.7	/	
	1920-1980MHz	dB	15	17.2	/	
	2110-2170MHz	dB	14	17.7	/	
	1880-2200MHz	dB	14	17.2	/	
	2300-2400MHz	dB	15	19.5	/	
	2496-2690MHz	dB	17	22.0	/	

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).

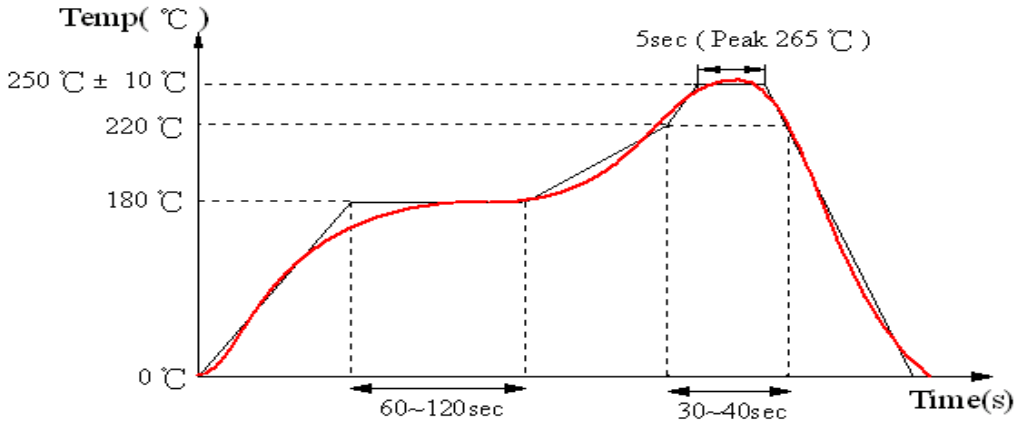
② 使用纯锡焊料 Use Sn solder.

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



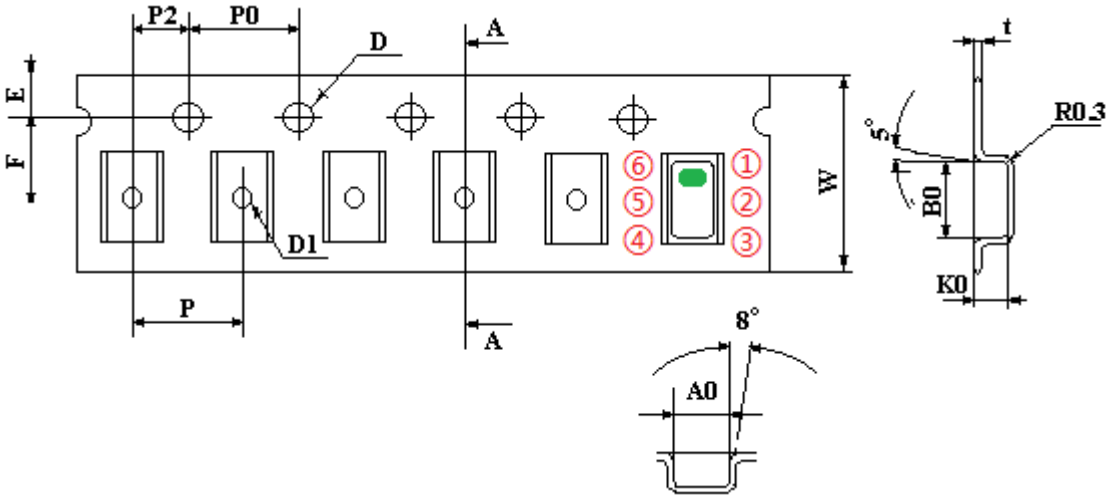
3、手工返工 Reworking with soldering iron

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

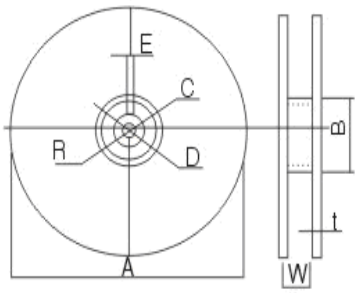
①编带尺寸 Dimensions of Tape:



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



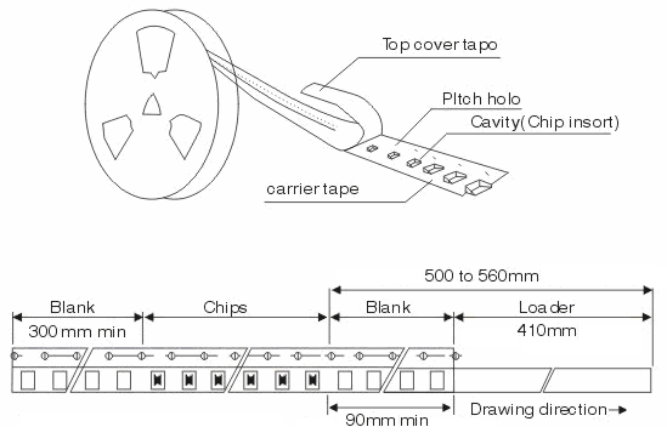
Reel material: PS (Polystyrene)

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:

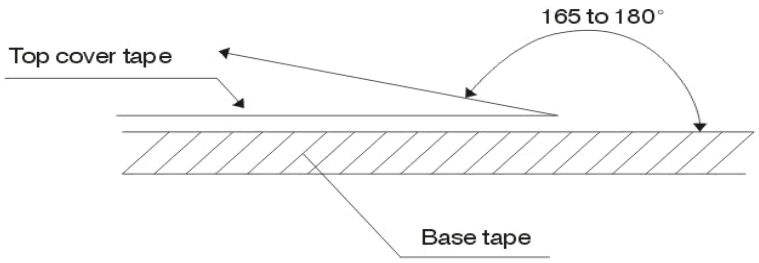
载带 Carrier tape	10N or more (1kgf or more)
上盖带 Cover tape	5N or more (1kgf or more)

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