客户 CUSTOMER: 日期 DATE:

# 规格书
# SPECIFICATION

产 品 名 称 PRODUCT NAME: 叠层片式双工器

Multilayer Chip Diplexer

| | |
|---|---|
| 贵 司 料 号 YOUR PART NO.: | |
| 敝 司 料 号 OUR PART NO.: | MDPX15M2455P69-D16 |
| 版 本 号 VERSION.: | V2.2 |

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

本规格书共 9 页

MANUFACTURING NAME

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.<br>批准 | CHKD.<br>审核 | DSGD.<br>担当 |
|---|---|---|
| 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 | 2019.06.23 | 初稿 Constitute | 梁启新 |
| 1.1 | 2019.08.26 | 更新焊盘封装规格 Modify the Appearance of Electrode | 梁启新 |
| 2.0 | 2020.12.09 | 更新低频电性参数，并增加包装信息<br>Modify LB Electrical Characteristics and Add Packaging | 付迎华 |
| 2.1 | 2021.04.30 | 更新 Mark 形状和颜色 Update the mark | 付迎华 |
| 2.2 | 2022.07.09 | 添加电性曲线和更新包装<br>Add the Characteristics Curve and modify the Packaging | 付迎华 |
| | | | |

# 目录 Catalog

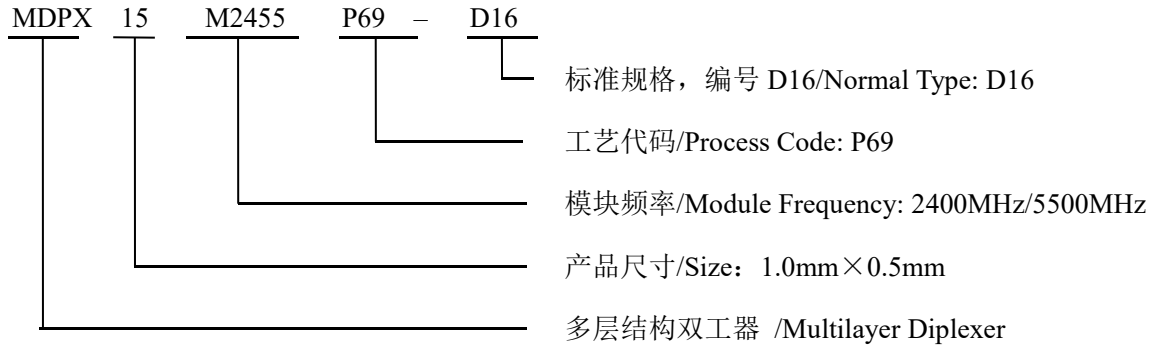
1 适用范围 Scope ..... 4
2 品名构成 Product Identification ..... 4
3 形状、尺寸和材料 Appearance, Dimensions and Material ..... 4
4 测试条件 Testing Conditions ..... 5
5 电气性能 Electrical Characteristics ..... 5
6 特性曲线 Characteristic Curve ..... 6
7 焊接条件 Recommended Soldering Conditions ..... 7
8 包装 Packaging ..... 8

## 1 适用范围 Scope

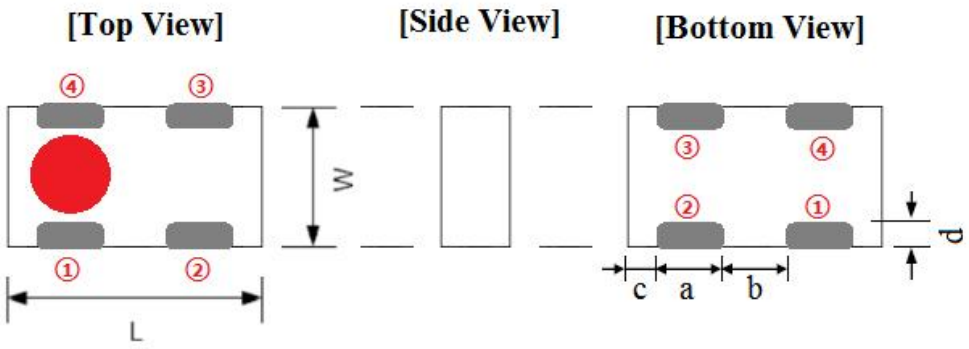
“麦捷”叠层片式双工器系列产品设计用于 5G、LTE、WIFI、Bluetooth、PDA 和无绳电话机等，具有低的插入损耗、高的隔离度和小体积 SMD 片式设计，能减少复杂的调校工作，可以简化电路设计。

“Microgate” Multilayer Chip Diplexer series are designed to be used in 5G、LTE、WIFI、Bluetooth、PDA & cordless phones with low insertion loss and high isolation 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




[Front View]




PIN Configuration

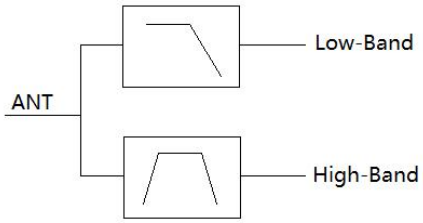
| ① | ② | ③ | ④ |
|---|---|---|---|
| Common Port | GND | High-Band | Low-Band |

Unit：mm

Dimension

| L | W | T | a | b | c | d |
|---|---|---|---|---|---|---|
| 1.0±0.1 | 0.5±0.1 | 0.40 Max | 0.3±0.1 | 0.2±0.1 | 0.10±0.1 | 0.15±0.05 |

Circuit Diagram




## 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

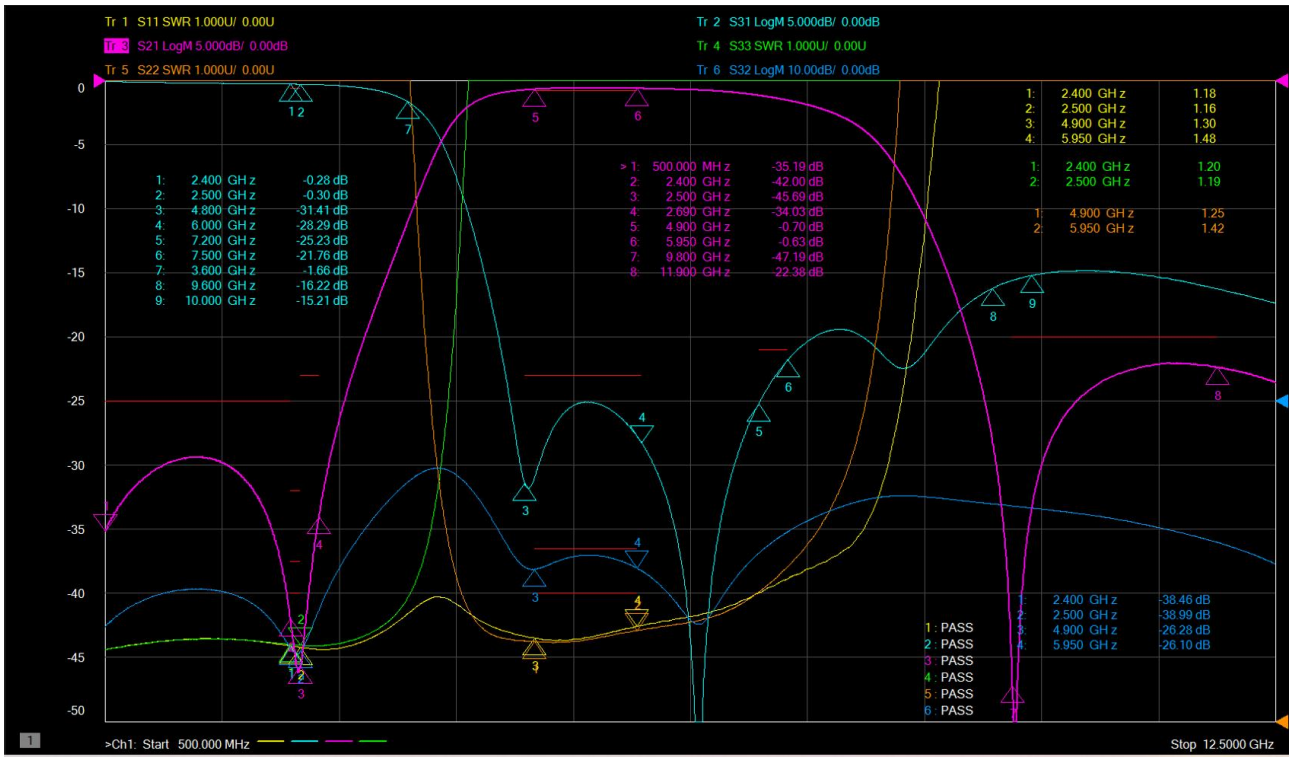
## 5 电气性能 Electrical Characteristics

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

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

| No. | Item （项目） | | Specifications （特性） |
|---|---|---|---|
| 5.1 | Frequency Range 频率范围 f1 | | 2400~2500 MHz |
| | Frequency Range 频率范围 f2 | | 4900~5950 MHz |
| 5.2 | Insertion Loss （in f1） 插入衰耗 | | ≤0.6dB@ +25℃ |
| | | | ≤0.7dB@-40 to +85℃ |
| 5.3 | Insertion Loss （in f2） 插入衰耗 | | ≤0.8dB@ +25℃ |
| | | | ≤1.0dB@-40 to +85℃ |
| 5.4 | V.S.W.R (in BW) 驻波比（in f1 & f2） | | ≤2.0 |
| 5.5 | Attenuation 阻带衰耗 （in f1） | | ≥23dB （4800～6000MHz）<br>≥21dB （7200～7500MHz） |
| 5.6 | Attenuation 阻带衰耗 （in f2） | | ≥25dB （30～2400MHz）<br>≥32dB （2400～2500MHz）<br>≥23dB （2500～2690MHz）<br>≥20dB （9800～11900MHz） |
| 5.7 | Isolation 隔离度 | HB to LB | ≥25dB (2400~2500MHz) |
| | | LB to HB | ≥23dB (4900~5950MHz) |
| 5.8 | In/Output Impedance 输入/输出阻抗 | | 50 Ω |
| 5.9 | Power Capacity | | 3W Max. |

## 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).

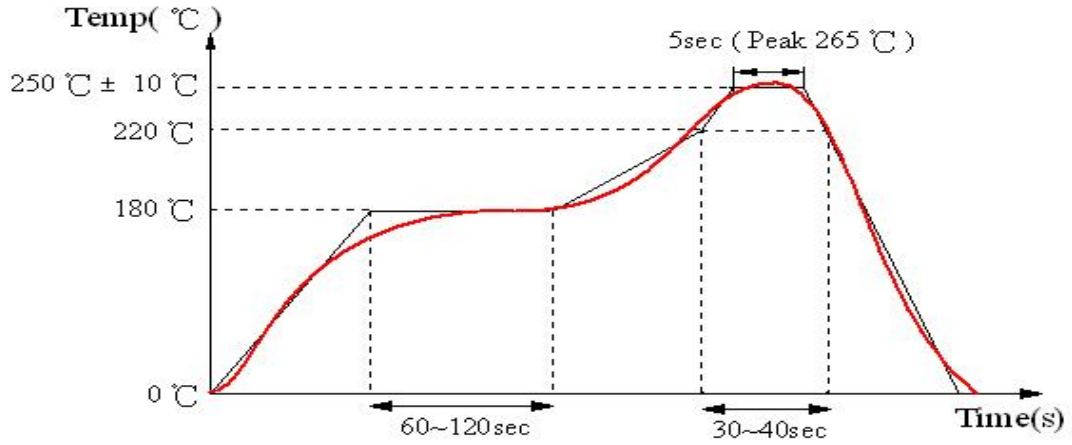
② 使用纯锡焊料 Use Sn solder.

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.



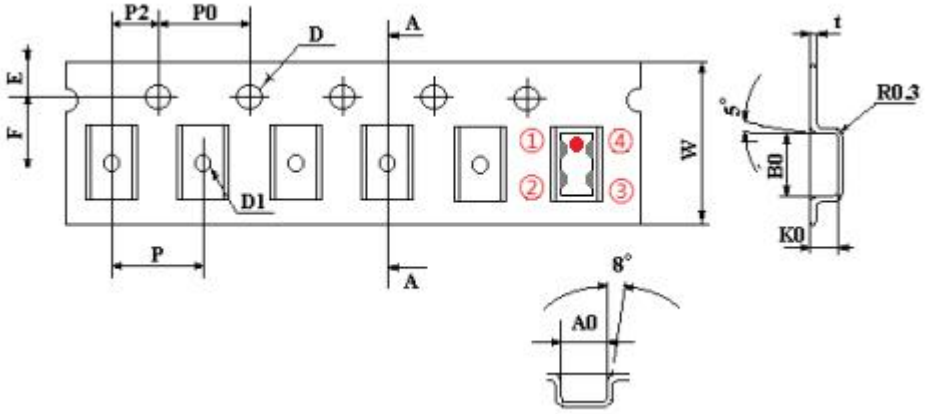

3、手工返工 Reworking with soldering iron

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

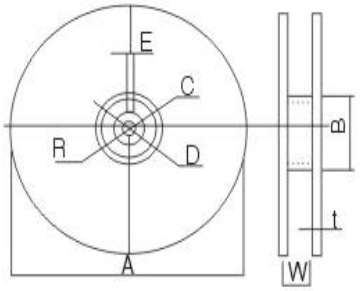
①编带尺寸 Dimensions of Tape:




| W | P | E | F | P2 | D | D1 |
|---|---|---|---|---|---|---|
| 8.00±0.10 | 4.00±0.10 | 1.75±0.10 | 3.50±0.10 | 2.00±0.10 | 1.60±0.10 | 0.40±0.10 |
| P0 | 10P0 | A0 | B0 | K0 | T | Tape Material |
| 4.00±0.10 | 40.00±0.20 | 0.64±0.10 | 1.12±0.10 | 0.48±0.10 | 0.20±0.02 | 塑带 plastic carrier tape |

②带轮尺寸 Dimensions of Reel

Unit: mm



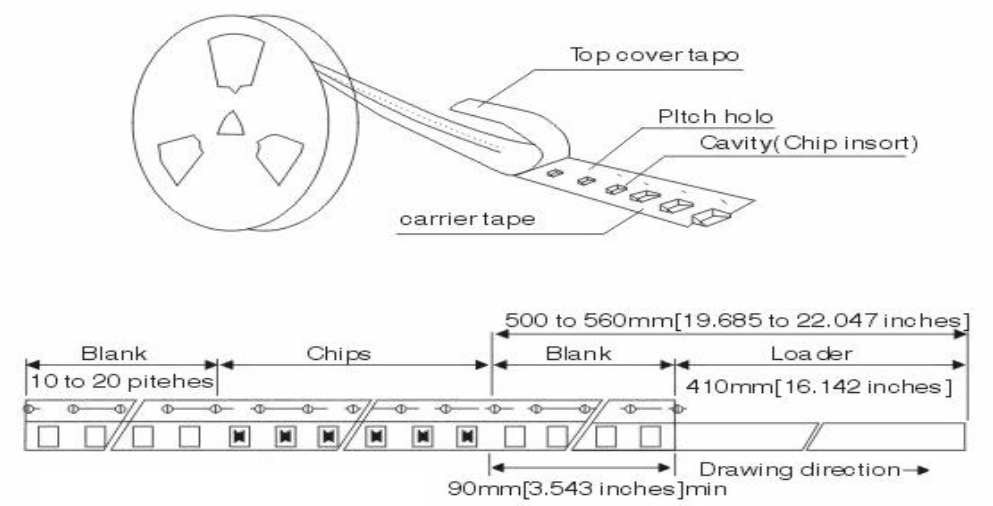

Reel material: PS (Polystyrene)

| | |
|---|---|
| **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:

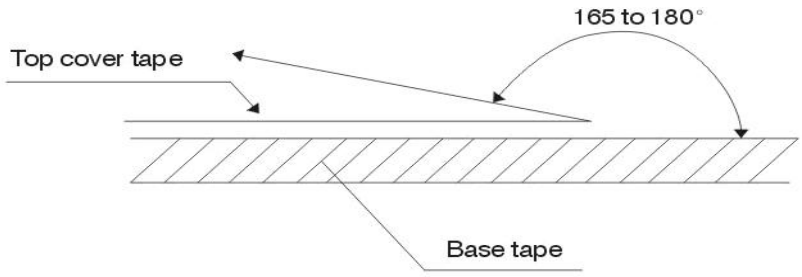
| | |
|---|---|
| 载带 Carrier tape | 10N or more (1kgf or more) |
| 上盖带 Cover tape | 5N or more (1kgf or more) |

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

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: 10000 PCS / Reel