

DP 2520 Series

Multilayer Chip Diplexers

Features

- ❖ Monolithic structure including one low-pass and one high-pass filters with loss pole at adjacent passband.
- ❖ RoHS compliant.

Applications

- ❖ Dual-band / dual-mode LTE mobile communication.



Target Specifications

| Part Number | Passband (MHz) | Insertion Loss (dB) | Return Loss (dB) | Attenuation (dB) | Isolation (dB) |
|-----------------------|----------------|-----------------------|-------------------|---|---|
| DP2520-A1425KT | 699-960 | 0.6 max. / 0.44 typ. | 10 min. / 11 typ. | 5 min. / 11 typ. @ 2300 ~ 2350MHz 10 min. / 18 typ. @ 2350 ~ 2500MHz 10 min. / 15 typ. @ 2500 ~ 2690MHz | 15 min. / 18 typ. @ 699-960MHz 15 min. / 16 typ. @ 960-1427MHz 12 min. / 15 typ. @ 1427-1710MHz 8 min. / 18 typ. @ 1710-1990MHz |
| | 960-1427 | 0.75 max. / 0.54 typ. | | | |
| | 1427-1710 | 0.85 max. / 0.62 typ. | | | |
| | 1710-1990 | 1.0 max. / 0.79 typ. | | | |
| | 1990-2110 | 1.5 max. / 1.3 typ. | | | |
| | 2110-2170 | 2.5 max. / 2.0 typ. | | | |
| | 2300-2350 | 2.65 max. / 2.1 typ. | 10 min. / 11 typ. | 15 min. / 17 typ. @ 699 ~ 960MHz 15 min. / 17 typ. @ 960 ~ 1427MHz 12 min. / 17 typ. @ 1427 ~ 1710MHz 8 min. / 20 typ. @ 1710 ~ 1990MHz 8 min. / 11 typ. @ 1990 ~ 2110MHz 5 min. / 8 typ. @ 2110 ~ 2170MHz | 8 min. / 12 typ. @ 1990-2110MHz 5 min. 9 typ. @ 2110-2170MHz 5 min. / 13 typ. @ 2300-2350MHz 10 min. / 17 typ. @ 2350-2500MHz 10 min. / 16 typ. @ 2500-2690MHz |
| | 2350-2500 | 1.5 max. / 1.3 typ. | | | |
| | 2500-2690 | 0.85 max. / 0.7 typ. | | | |
| | | | | | |

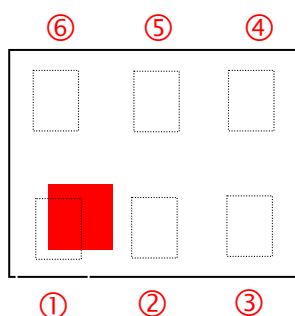
Q'ty/Reel (pcs) : 3,000
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Power Capacity : 3W max.

Part Number

DP 2520 - A 1425 KT □ /LF
 ① ② ③ ④ ⑤ ⑥ ⑦

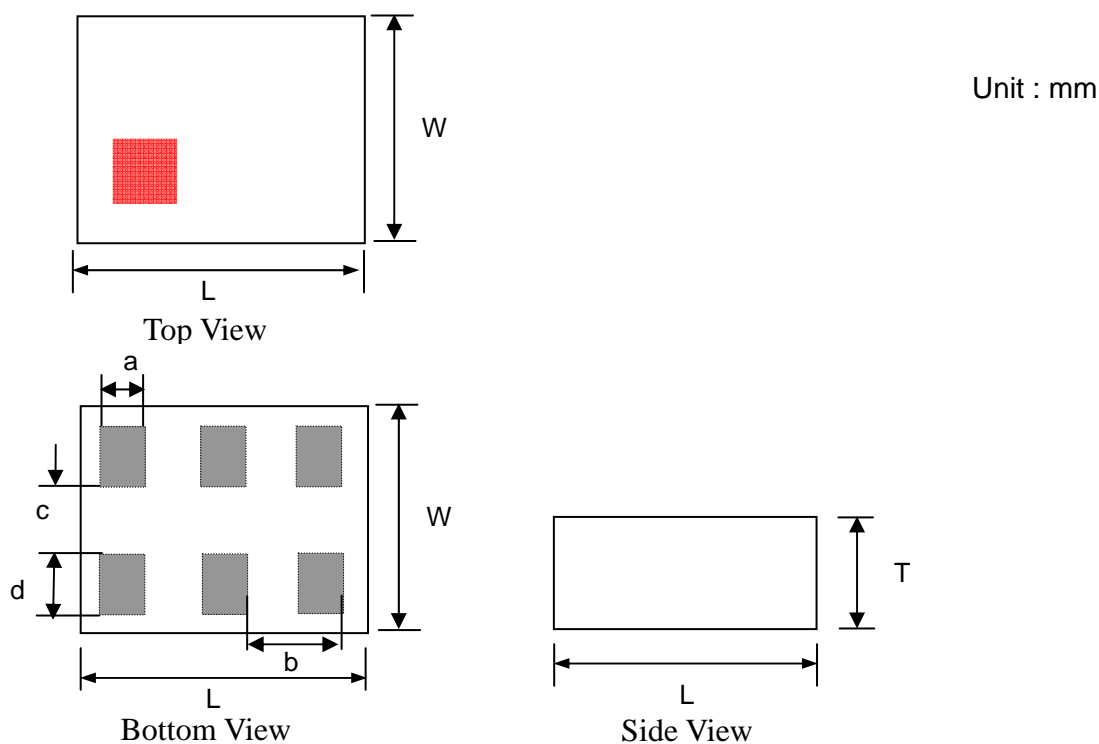
| | | | |
|----------------------|---------------|------------------------|---------------------------|
| ① Type | DP : Diplexer | ② Dimensions (L x W) | 2.5 x 2.0 mm |
| ③ Material Code | A | ④ Frequency Range | 1425=1400MHz /2500MHz |
| ⑤ Specification Code | KT | ⑥ Packaging | T: Tape & Reel B: Bulk |
| ⑦ Soldering | /LF=lead-free | | |

Terminal Configuration

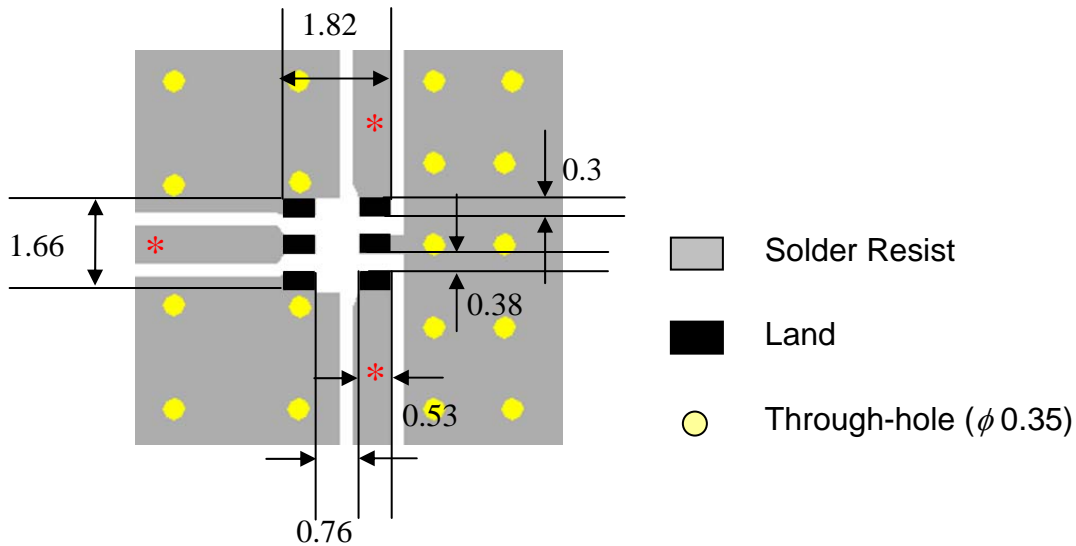


| No. | Terminal Name | No. | Terminal Name |
|-----|-------------------|-----|---------------|
| ① | Higher Freq. Port | ④ | GND |
| ② | GND | ⑤ | Common Port |
| ③ | Lower Freq. Port | ⑥ | GND |

Dimensions and Recommended PC Board Pattern

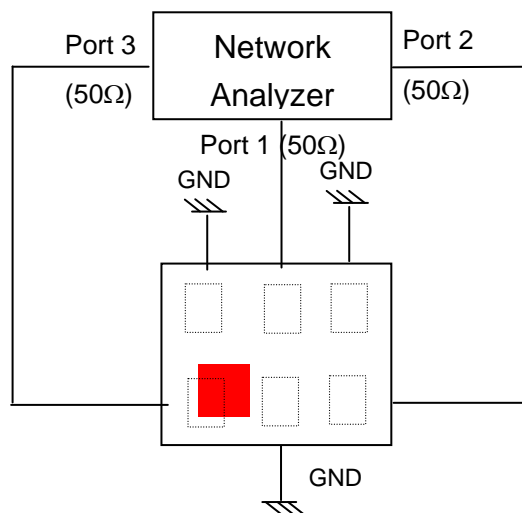


| Mark | L | W | T | a | b | c | d |
|------------|--------------|--------------|--------------|--------------|---------------|---------------|----------------|
| Dimensions | 2.5 ± 0.1 | 2.0 ± 0.1 | 0.8 ± 0.1 | 0.3 ± 0.1 | 0.65 ± 0.1 | 0.75 ± 0.1 | 0.525 ± 0.1 |



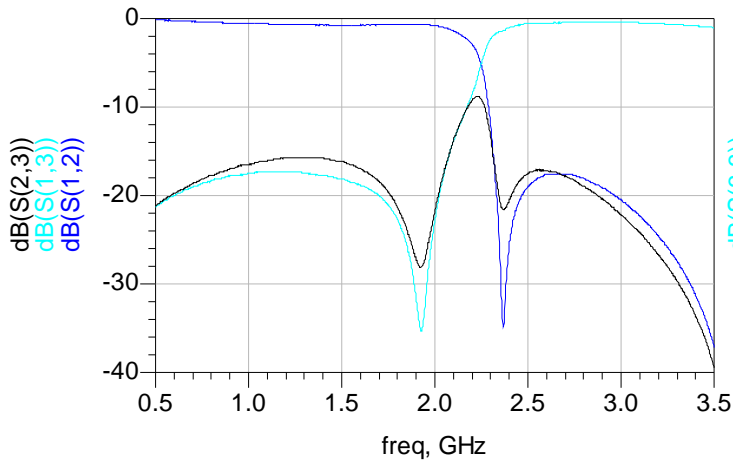
* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram

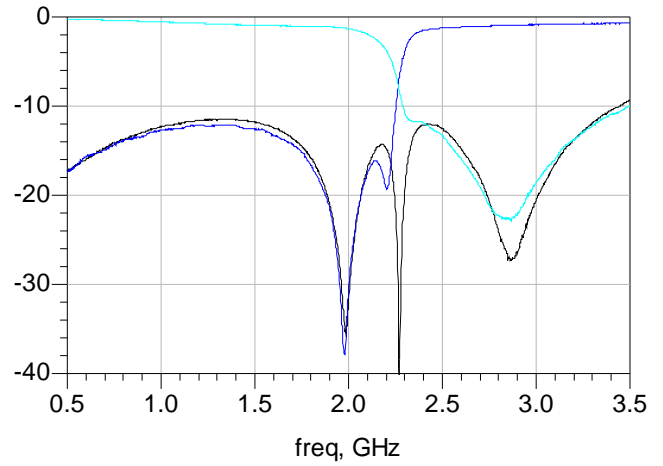


Typical Electrical Characteristics (T=25°C)

Attenuation/Isolation



Return Loss

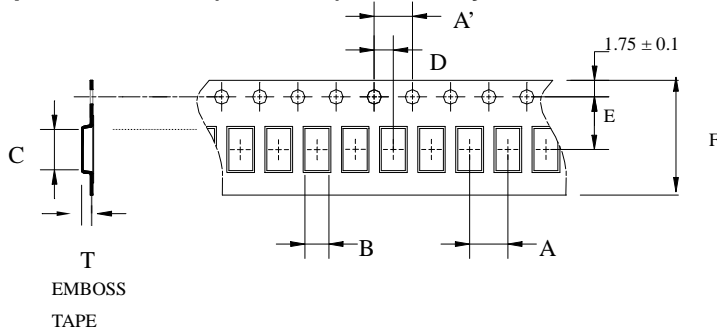


Notes

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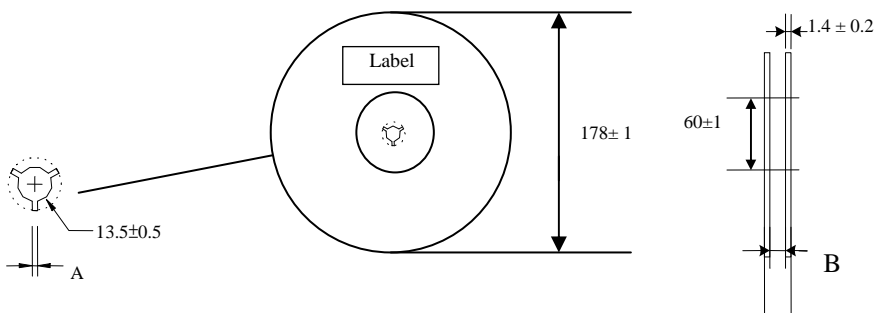
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



| Type | A | A' | B | C | D | E | F | T | Quantity/reel | Tape material |
|------|------|------|-------|-------|------|------|------|-------|---------------|-----------------------|
| 2520 | 4.0± | 4.0± | 2.35± | 2.80± | 2.0± | 3.5± | 8.0± | 1.15± | 3,000pcs | Plastic (Embossed) |
| | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.10 | | |

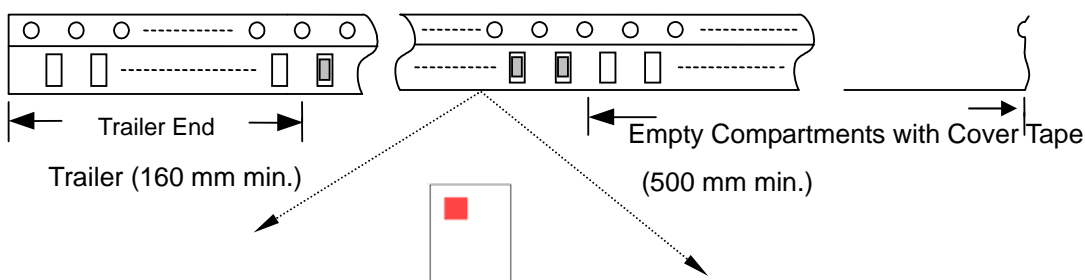
❖Reel Dimensions (Unit: mm)



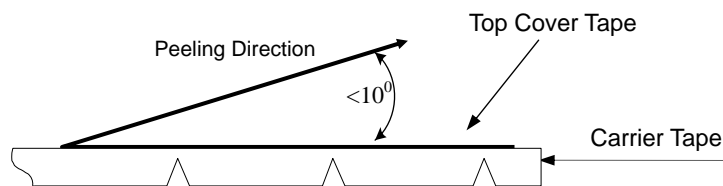
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

| Type | A | B |
|------|---------|---------|
| 2520 | 2.3±0.5 | 9.0±0.3 |

❖Leader and Trailer Tape



❖ **Peel-off Force**



Peel-off force should be in the range of 0.1 – 0.6 N at a peel-off speed of 300 ± 10 mm/min .

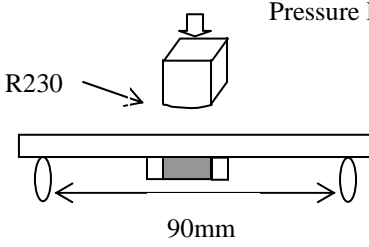
❖ **Storage Conditions**

- (1) Temperature: $+5 \sim 35^{\circ}\text{C}$, relative humidity (RH): 45~75%.
- (2) Non-corrosive environment.

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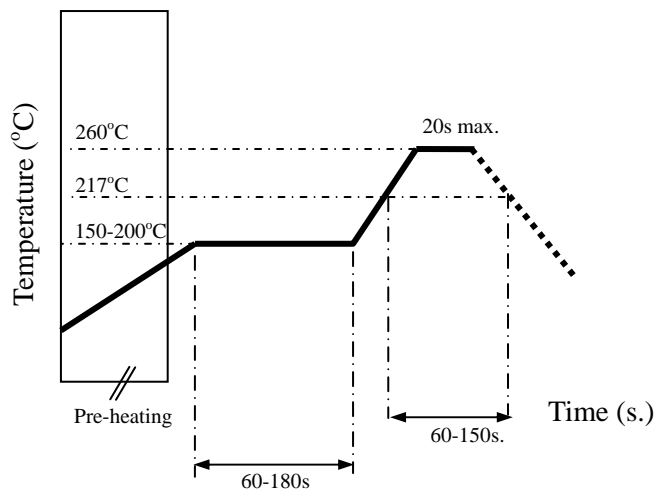
Mechanical & Environmental Characteristics

| Item | Requirements | Procedure |
|--|--|--|
| Solderability | <ol style="list-style-type: none"> No apparent damage More than 95% of the terminal electrode shall be covered with new solder | <ol style="list-style-type: none"> Preheat: $120 \pm 5^{\circ}\text{C}$ Solder: $245 \pm 5^{\circ}\text{C}$ for 5 ± 1 sec |
| Soldering strength (Termination Adhesion) | <ol style="list-style-type: none"> 1kg minimum | <ol style="list-style-type: none"> Solder specimen onto test jig. Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction. |
| Deflection (Substrate Bending) | <ol style="list-style-type: none"> No apparent damage | <ol style="list-style-type: none"> Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile. Apply a bending force of 2mm deflection  |
| Heat/Humidity Resistance | <ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test | <ol style="list-style-type: none"> Temperature: $85 \pm 2^{\circ}\text{C}$ Humidity: 90% ~ 95% RH Duration: 1000 ± 48hrs Recovery: 1-2hrs |
| Thermal shock (Temperature Cycle) | <ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test | <ol style="list-style-type: none"> One cycle/step 1 : $125 \pm 5^{\circ}\text{C}$ for 30 min step 2 : $-40 \pm 5^{\circ}\text{C}$ for 30 min No of cycles : 100 Recovery: 1-2 hrs |
| Low Temperature Resistance | <ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test | <ol style="list-style-type: none"> Temperature: $-40 \pm 5^{\circ}\text{C}$ Duration: 500 ± 24hrs Recovery: 1-2hrs |

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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Advanced Ceramic X Corp.

16 Tzu Chiang Road, Hsinchu Industrial District Hsinchu Hsien 303, Taiwan

TEL:886-3-5987008 FAX:886-3-5987001

E-mail: acx@acxc.com.tw

<http://www.acxc.com.tw>