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With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China









March 2017

# Multilayer Diplexer

For 824-960MHz / 1710-2170MHz

# DPX202170DT-4049A1

2.0x1.25mm [EIA 0805]\*

\* Dimensions Code JIS[EIA]



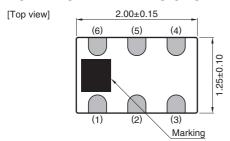
## **Multilayer Diplexer**

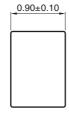
For 824-960MHz / 1710-2170MHz

#### Conformity to RoHS Directive

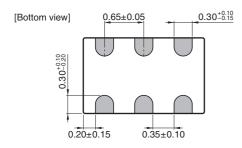
# DPX202170DT-4049A1

#### SHAPES AND DIMENSIONS





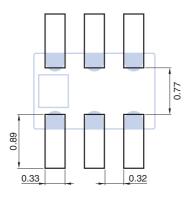




| Te | rminal functions |
|----|------------------|
| 1  | GND              |
| 2  | Common           |
| 3  | GND              |
| 4  | High-band        |
| 5  | GND              |
| 6  | Low-band         |

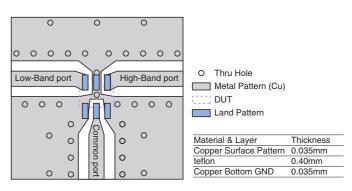
Dimensions in mm

#### ■ RECOMMENDED LAND PATTERN



Dimensions in mm

#### EVALUATION BOARD



Line width should be designed to match  $50\Omega$  characteristic impedance depending on PCB material and thickness.

OROHS Directive Compliant Product: See the following for more details.https://product.tdk.com/info/en/environment/rohs/index.html

<sup>•</sup> All specifications are subject to change without notice.

<sup>•</sup> Before using these products, be sure to request the delivery specifications.



#### **ELECTRICAL CHARACTERISTICS**

#### □LOW-BAND

| Item                         | Frequency Range<br>(MHz) | Min.         | Тур. | Max. |
|------------------------------|--------------------------|--------------|------|------|
| Insertion Loss (dB)          | 824 to 960               | _            | 0.24 | 0.30 |
| Return Loss (dB)             | 824 to 960               | 13.98        | 19.7 | _    |
| Attenuation (dB)             | 1710 to 2170             | 15           | 17.7 | _    |
| Characteristic Impedance (Ω) |                          | 50 (Nominal) |      |      |

<sup>·</sup> Ta: +25±5°C

#### ☐HIGH-BAND

| Item                                | Frequency Range<br>(MHz) | Min.  | Тур.         | Max. |
|-------------------------------------|--------------------------|-------|--------------|------|
| Insertion Loss (dB)                 | 1710 to 2170             | _     | 0.38         | 0.50 |
| Return Loss (dB)                    | 1710 to 2170             | 11.73 | 13.8         | _    |
| Attenuation (dB)                    | 824 to 960               | 20    | 22.8         | _    |
| Characteristic Impedance $(\Omega)$ |                          |       | 50 (Nominal) |      |

<sup>·</sup> Ta: +25±5°C

#### **□COMMON**

| Item                         | Frequency Range<br>(MHz) | Min.  | Тур.         | Мах. |
|------------------------------|--------------------------|-------|--------------|------|
| Deturn Loop (dP)             | 824 to 960               | 13.98 | 19.4         | _    |
| Return Loss (dB)             | 1710 to 2170             | 11.73 | 13.6         | _    |
| Power Handling (W)           |                          | _     | _            | 3    |
| Characteristic Impedance (Ω) |                          |       | 50 (Nominal) |      |

<sup>·</sup> Ta: +25±5°C

#### **TEMPERATURE RANGE**

| Operating temperature | Storage temperature |
|-----------------------|---------------------|
| (°C)                  | (°C)                |
| -40 to +85            | -40 to +85          |

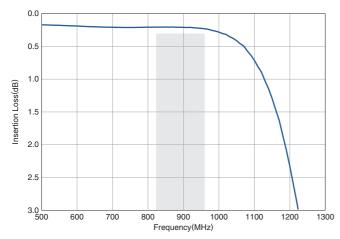
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#### **■ FREQUENCY CHARACTERISTICS**

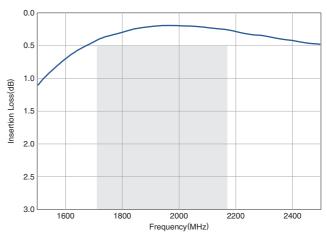
#### □LOW-BAND

#### Insertion Loss

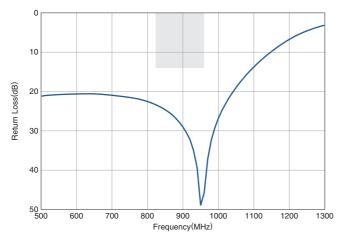


#### ☐HIGH-BAND

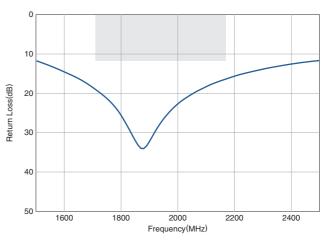
#### Insertion Loss



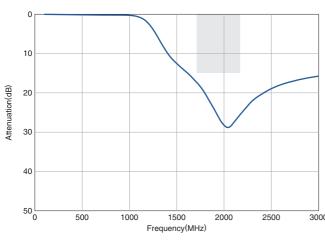
#### **Return Loss**



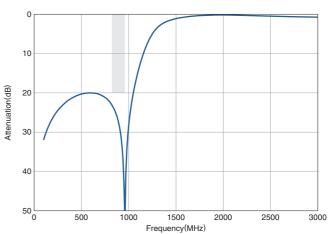
#### **Return Loss**



#### Attenuation



#### **Attenuation**



<sup>•</sup> All specifications are subject to change without notice.

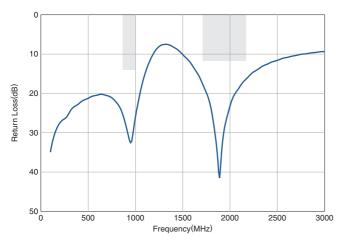
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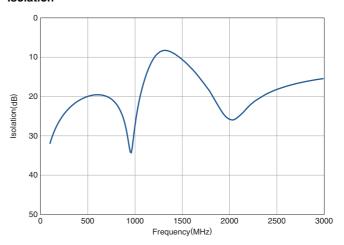
#### **■ FREQUENCY CHARACTERISTICS**

#### □COMMON

#### **Return Loss**



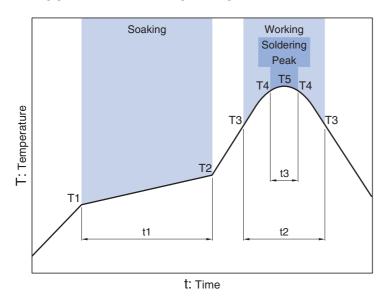
#### Isolation



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#### ■ RECOMMENDED REFLOW PROFILE



| Soaking |       |            | Working |               | Soldering Peak |            |            |
|---------|-------|------------|---------|---------------|----------------|------------|------------|
| Temp.   |       | Time       | Temp.   | Time          | Temp.          | Time       | Temp.      |
| T1      | T2    | t1         | Т3      | t2            | T4             | t3         | T5         |
| 150°C   | 180°C | 60 to 120s | 230°C   | more than 30s | 247 to 253°C   | within 10s | 260°C max. |

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#### REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

#### SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

#### **⚠** REMINDERS

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this catalog.

- (1) Aerospace/Aviation equipment
- (2) Transportation equipment (cars, electric trains, ships, etc.)
- (3) Medical equipment
- (4) Power-generation control equipment
- (5) Atomic energy-related equipment
- (6) Seabed equipment
- (7) Transportation control equipment

- (8) Public information-processing equipment
- (9) Military equipment
- (10) Electric heating apparatus, burning equipment
- (11) Disaster prevention/crime prevention equipment
- (12) Safety equipment
- (13) Other applications that are not considered general-purpose applications

When using this product in general-purpose applications, you are kindly requested to take into consideration securing protection circuit/ equipment or providing backup circuits, etc., to ensure higher safety.

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