

## DIPLEXER

## DPX-1

Available in either a connectorized or miniature surface mount package (0.240 inch x 0.150 inch), the DPX-1 is a low cost, high performance diplexer. The unique design offers high pass/low pass signal routing/multiplexing with excellent isolation. Passband insertion loss is less than 1 dB with rejection typically exceeding 25 dB. Besides being ideal for transmitter/receiver applications, the DPX-1 can also be used as an excellent non-reflective low pass (or high pass) filter for systems requiring broadband 50Ω impedance match (such as mixers).



### Features

- Low Insertion Loss
- Superior Repeatability
- Low Profile Miniaturized, Reflow Solderable Package Option
- User defined cross over frequencies available

**Electrical Specifications** – Specifications guaranteed from -55 to +100°C, measured in a 50Ω system.

| Parameter                     | Frequency Range (GHz) | Min | Typ  | Max |
|-------------------------------|-----------------------|-----|------|-----|
| Cross Over Frequency          | 1.1                   |     | ±5 % |     |
| <b>Low Pass Filter</b>        |                       |     |      |     |
| Pass Band Insertion Loss (dB) | DC to 0.85            |     | 0.5  | 1   |
| Stop Band Rejection (dB)      | 1.4 to 3.3            |     | 18   |     |
|                               | 3.3 to 5              | 18  | 22   |     |
| Pass Band Return Loss (dB)    | <0.85                 |     | 20   |     |
| <b>High Pass Filter</b>       |                       |     |      |     |
| Pass Band Insertion Loss (dB) | 1.4 to 5              |     | 0.6  | 1.2 |
| Stop Band Rejection (dB)      | <0.6                  | 24  | 30   |     |
|                               | <0.85                 |     | 18   |     |
| Pass Band Return Loss (dB)    | 1.4 to 5              |     | 15   |     |
| Common Port Return Loss (dB)  | <0.85                 |     | 20   |     |
|                               | 1.4 to 5              |     | 15   |     |
| Isolation (dB)                | <0.75                 | 14  | 24   |     |
|                               | 1.5 to 5              | 14  | 24   |     |
| RF Power (W)                  |                       |     |      | 1   |

### Part Number Options

| Package Style(s) <sup>1</sup>        | Example | S-Parameters <sup>2</sup> | Green Status |
|--------------------------------------|---------|---------------------------|--------------|
| <a href="#">DPX</a> (Surface Mount)  | DPX-1-1 | <a href="#">DPX-1.S3P</a> | RoHS         |
| <a href="#">DPXN</a> (Connectorized) | DPXN-1  |                           |              |

<sup>1</sup>For surface mount package, specify port configuration by adding -1 or -2 suffix to model number. Default is -2 configuration when not specified.

<sup>2</sup>S-Parameters include test fixture.

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Page 2

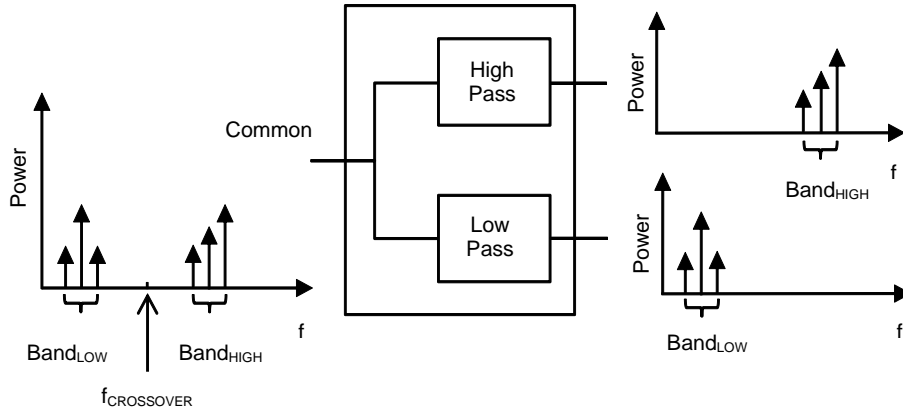


Fig. 1. Schematic Diagram

## Typical Performance

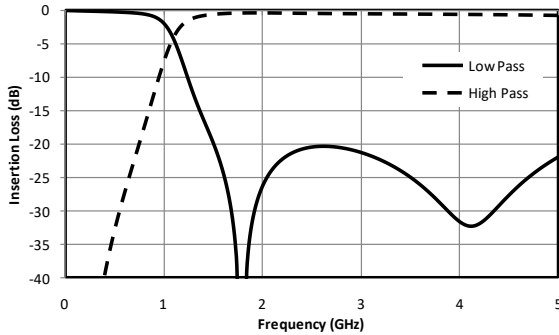


Fig. 2. Insertion loss.

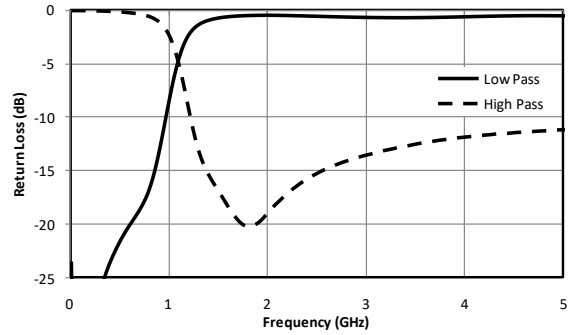


Fig. 3. Return loss.

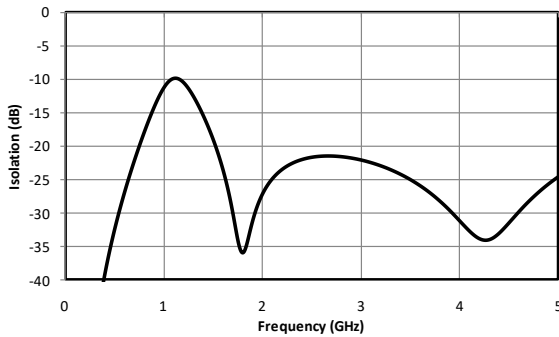


Fig. 4. Isolation.

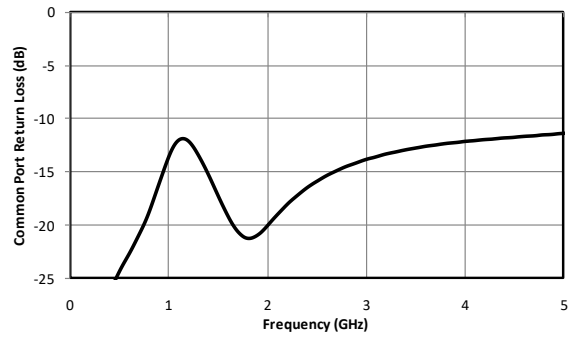


Fig. 5. Common port return loss.

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