

DPX-3-1 Diplexer

DEVICE OVERVIEW

General Description

Available in either a connectorized or miniature surface mount package (0.240 inch x 0.150 inch), the DPX-3 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 1.2 dB with rejection typically exceeding 25 dB. Besides being ideal for transmitter/receiver applications, the DPX-3 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).



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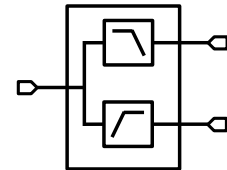
Features

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

Applications

- Reflectionless Filter Applications
- RF Transceivers

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
DPX-3-2	Diplexer	DPX	RoHS REACH	Released	EAR99
DPX-3-1	Diplexer	DPX	RoHS REACH	Released	EAR99

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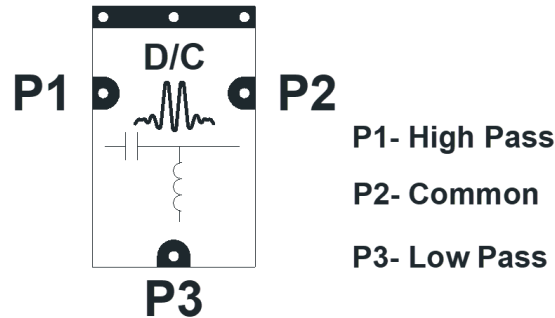
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Revision History

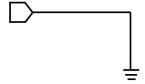
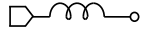


Revision Code	Revision Date	Comment
-	2012-11-29	Datasheet Initial Release

Port Configuration and Functions

Port Diagram



Port Functions

Port	Function	Description	Equivalent Circuit for Package
GND	Ground	DPX package ground is provided through the substrate and ground bond pads.	
Pin 1	High Pass Filter	Pin 1 is DC open to Pin 2 and Pin 3.	
Pin 2	Common/Input	Pin 2 is DC open to Pin 1 and short to Pin 3.	
Pin 3	Low Pass Filter	Pin 3 is DC open to Pin 1 and short to Pin 2.	

Specifications

Package Information

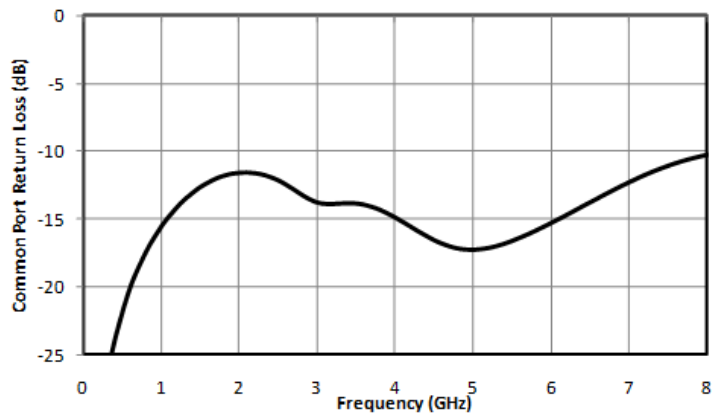
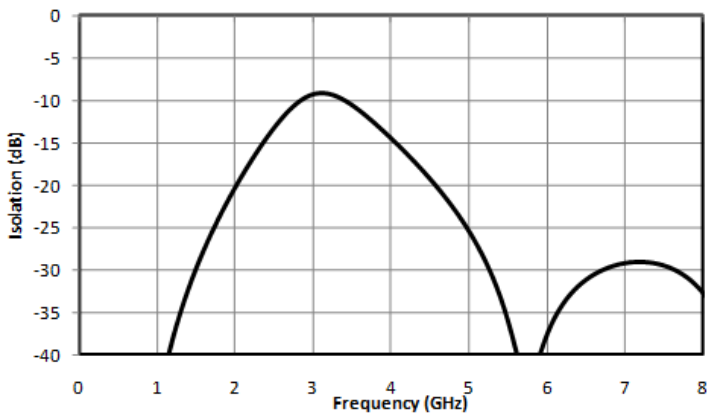
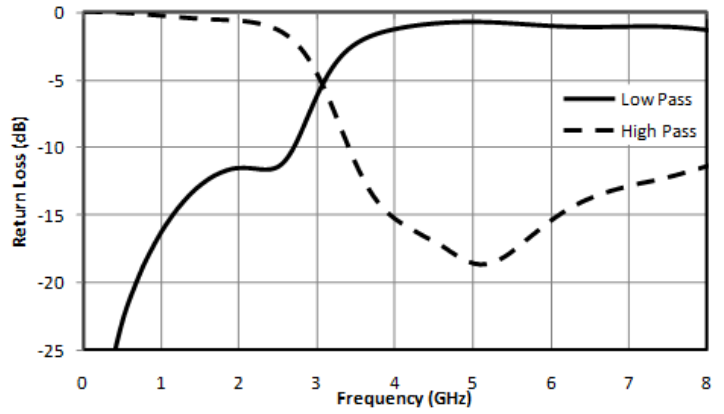
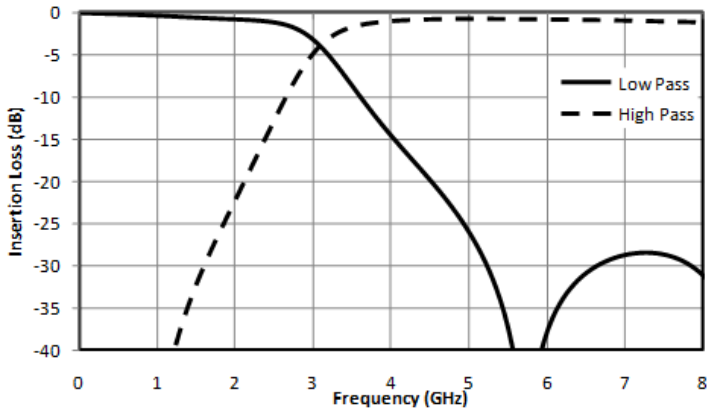
Parameter	Details	Rating
Dimensions	-	3.81 x 6.10 mm
Moisture Sensitivity Level	-	MSL 3

Electrical Specifications

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

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
30 dBc Low Pass Rejection Point	<1.5GHz	-	1.5	25	30	-	dB
30 dBc Low Pass Rejection Point	<2.3 GHz	-	2.3	-	15	-	dB
Common Port Return Loss	<2.3GHz	-	2.3	-	15	-	dB
Common Port Return Loss	4.2-8 GHz	4.2	8	-	15	-	dB
Cross Over Frequency	3.1GHz	3.1	3.1	-	5	-	%
High Pass Filter, Pass Band Insertion Loss	4.2-8 GHz	4.2	8	-	0.7	1.4	dB
High Pass Filter, Pass Band Return Loss	4.2-8 GHz	4.2	8	-	15	-	dB
Isolation	<2.2GHz	-	2.2	14	25	-	dB
Isolation	4.4-8 GHz	4.4	8	14	25	-	dB
Low Pass Filter, Pass Band Insertion Loss	DC-2.3 GHz	0	2.3	-	0.7	1.4	dB
Low Pass Filter, Pass Band Return Loss	<2.3GHz	-	2.3	-	15	-	dB
Low Pass Filter, Stop Band Rejection	4.2-4.8 GHz	4.2	4.8	-	15	-	dB
Low Pass Filter, Stop Band Rejection	4.8-8 GHz	4.8	8	15	20	-	dB
RF Power	-	-	-	-	-	1	W
High Frequency Passband	-	-	-	4.2	-	8	GHz
Low Frequency Passband	-	-	-	0	-	2.3	GHz

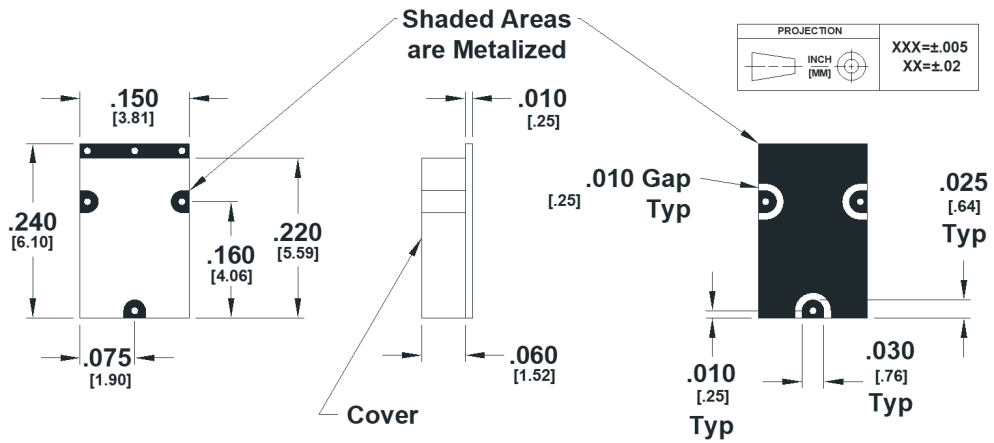
Typical Performance Plots



Mechanical Data

Outline Drawing

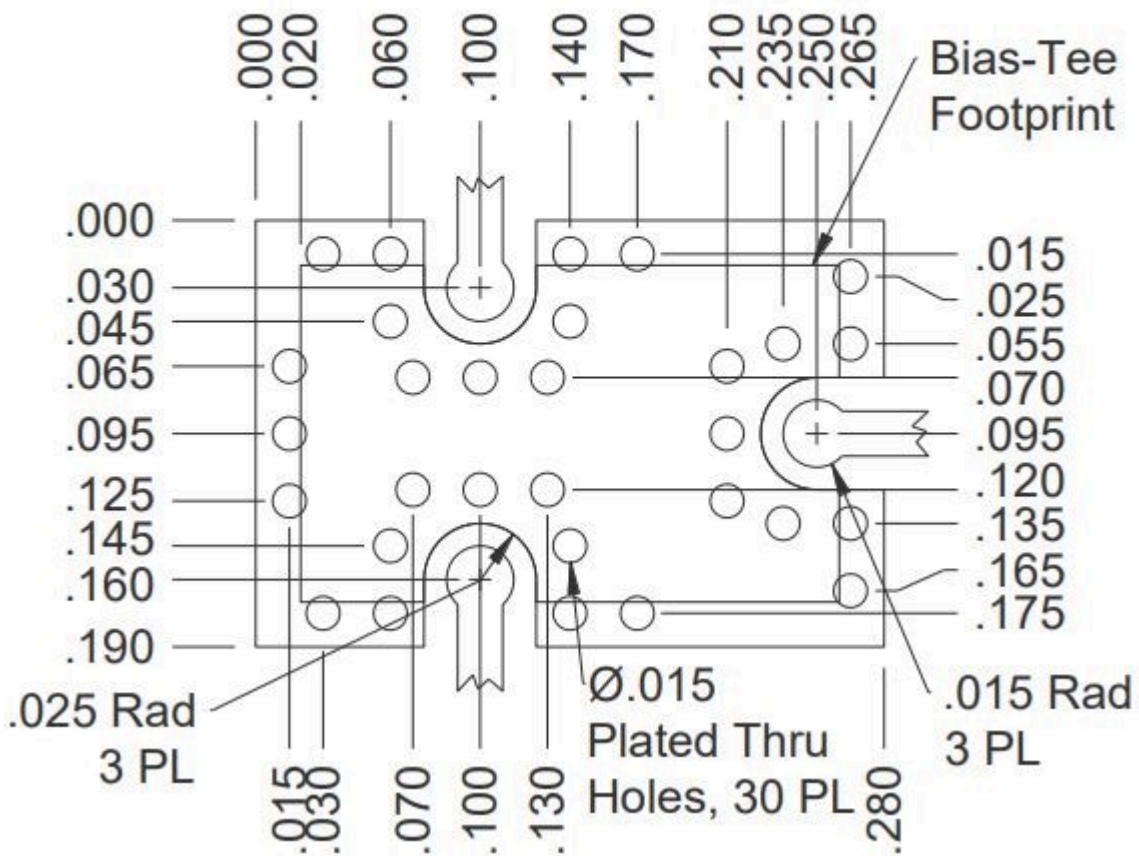
Download : [Outline 2D Drawing](#) | [Outline 3D Drawing](#) | [Outline 3D STP](#)



Footprint Image

Download : [Footprint Drawing](#)

BTSM/PDSM Surface-Mount System Circuit Footprint



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