

DPX-M50-1

Diplexer

DEVICE OVERVIEW

General Description

Available in either a connectorized or miniature surface mount package (0.240 inch x 0.150 inch), the DPX-M50 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-M50 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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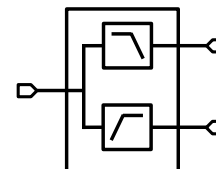
Features

- 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	Packing Size	Green Status	Product Lifecycle	Export Classification
DPX-M50-1	Diplexer	DPX	-	RoHS REACH	Released	EAR99
<u>DPX-M50-2</u>	Diplexer	DPX	-	RoHS REACH	Released	EAR99

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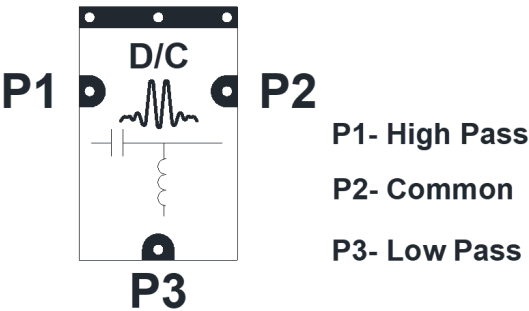
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Revision History

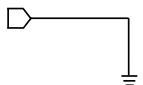
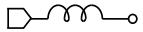
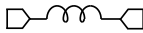
Revision Code	Revision Date	Comment
-	2013-01-01	Datasheet initial Release
A	2019-10-01	Maximum DC Voltage Rating Added

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

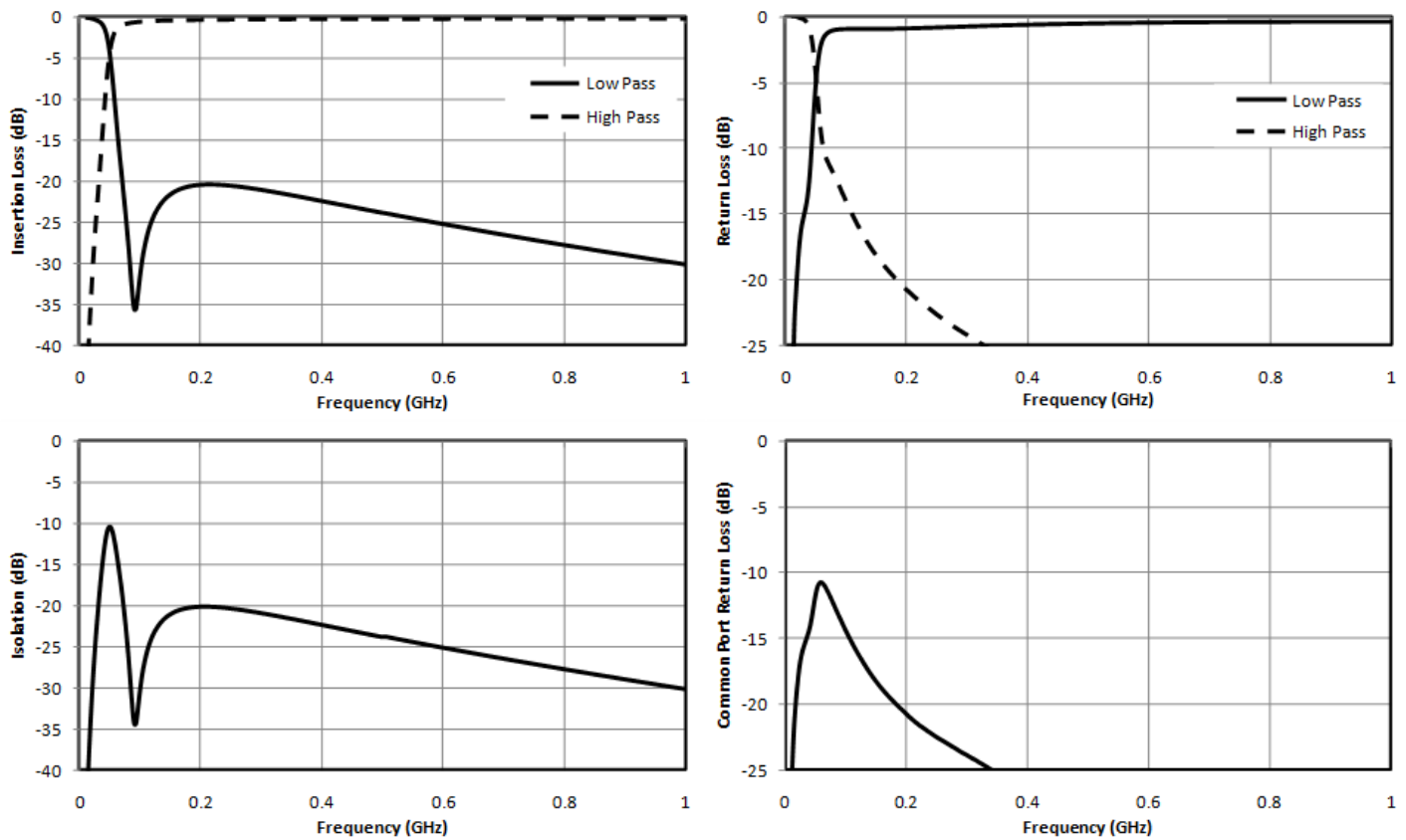
Parameter	Details	Rating
Dimensions	-	3.81 x 6.10 mm

Electrical Specifications

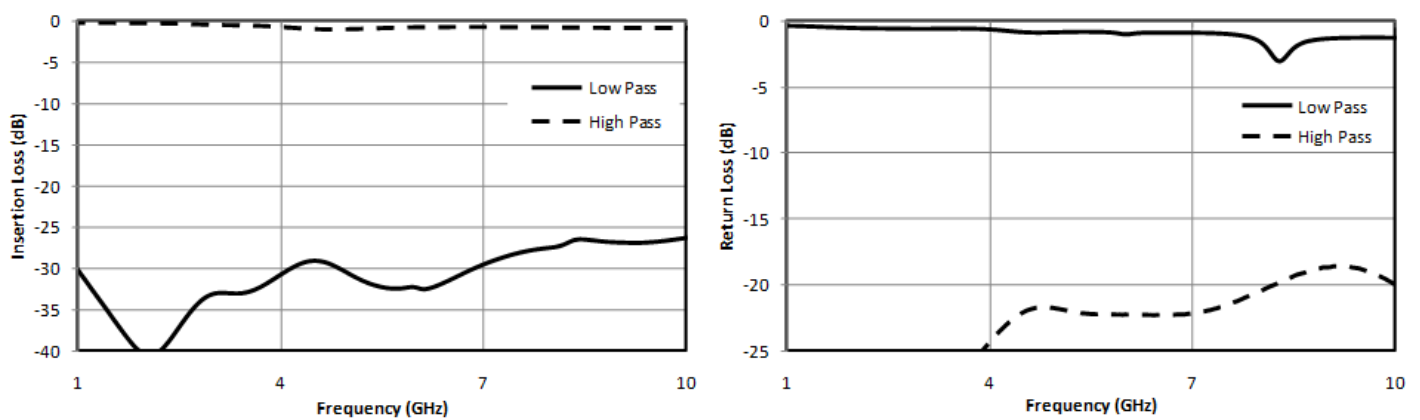
Specifications guaranteed from -55 to +100°C, measured in a 50Ω system.

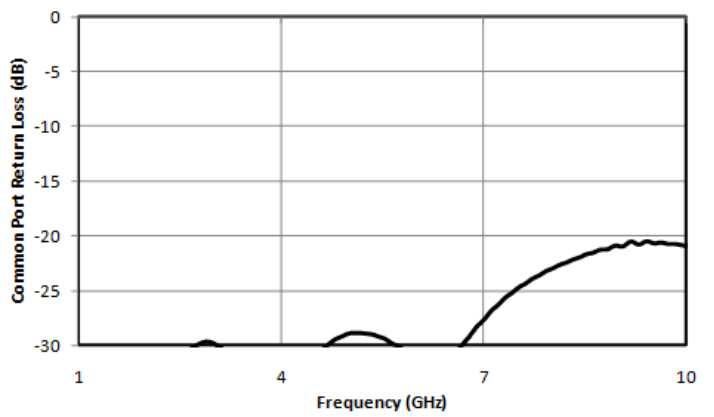
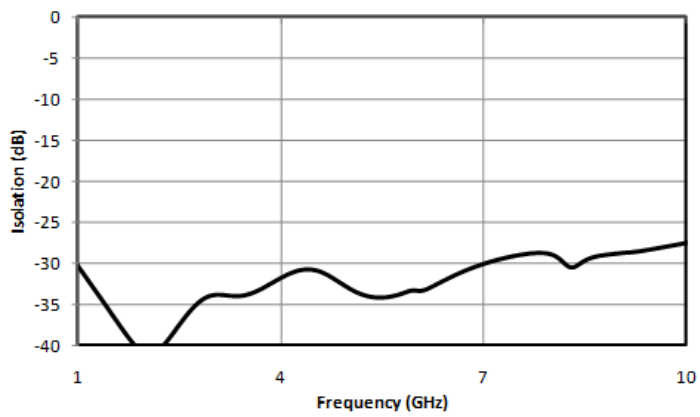
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Cross Over Frequency	0.05 GHz	0.05	0.05	-	5	-	%
Low Frequency Passband	-	-	-	0	-	0.035	GHz
High Frequency Passband	-	-	-	0.07	-	10	GHz
High Pass Filter, Pass Band Insertion Loss	0.07 - 10 GHz	0.07	10	-	0.7	1.4	dB
Common Port Return Loss	DC to 0.035 GHz	0	0.035	-	18	-	dB
Common Port Return Loss	0.07 to 10 GHz	0.07	10	-	18	-	dB
Isolation	<0.03 GHz	-	0.03	14	24	-	dB
Isolation	0.075 - 10 GHz	0.075	10	14	24	-	dB
DC Voltage	-	-	-	-	-	25	V
High Pass Filter, Stop Band Rejection	<0.015 GHz	-	0.015	25	35	-	dB
High Pass Filter, Stop Band Rejection	<0.035 GHz	-	0.035	-	20	-	dB
Low Pass Filter, Pass Band Insertion Loss	DC to 0.035 GHz	0	0.035	-	0.7	1.4	dB
Low Pass Filter, Pass Band Return Loss	DC to 0.035 GHz	0	0.035	-	18	-	dB
RF Power	-	-	-	-	-	1	W
High Pass Filter, Pass Band Return Loss	0.07 - 10 GHz	0.07	10	-	18	-	dB
Low Pass Filter, Stop Band Rejection	0.07 - 3 GHz	0.07	3	-	24	-	dB
Low Pass Filter, Stop Band Rejection	3 - 10 GHz	3	10	20	30	-	dB

Typical Performance Plots from DC - 1GHz



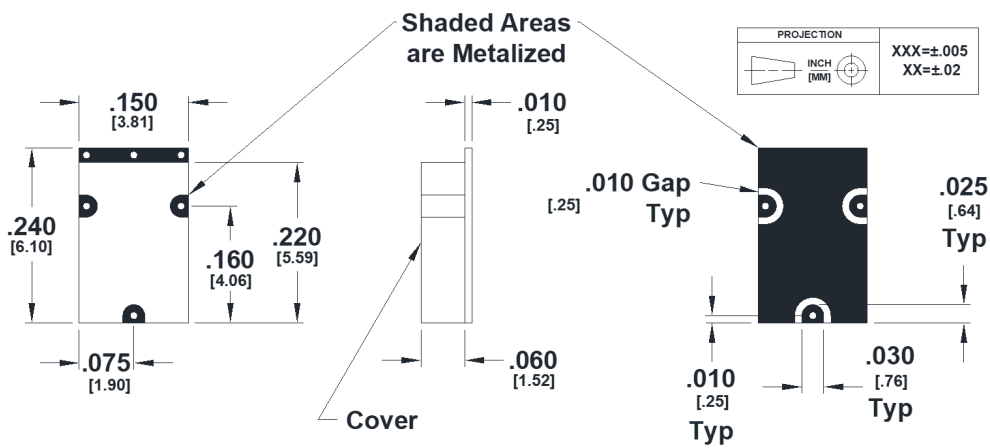
Typical Performance Plots from 1-10GHz



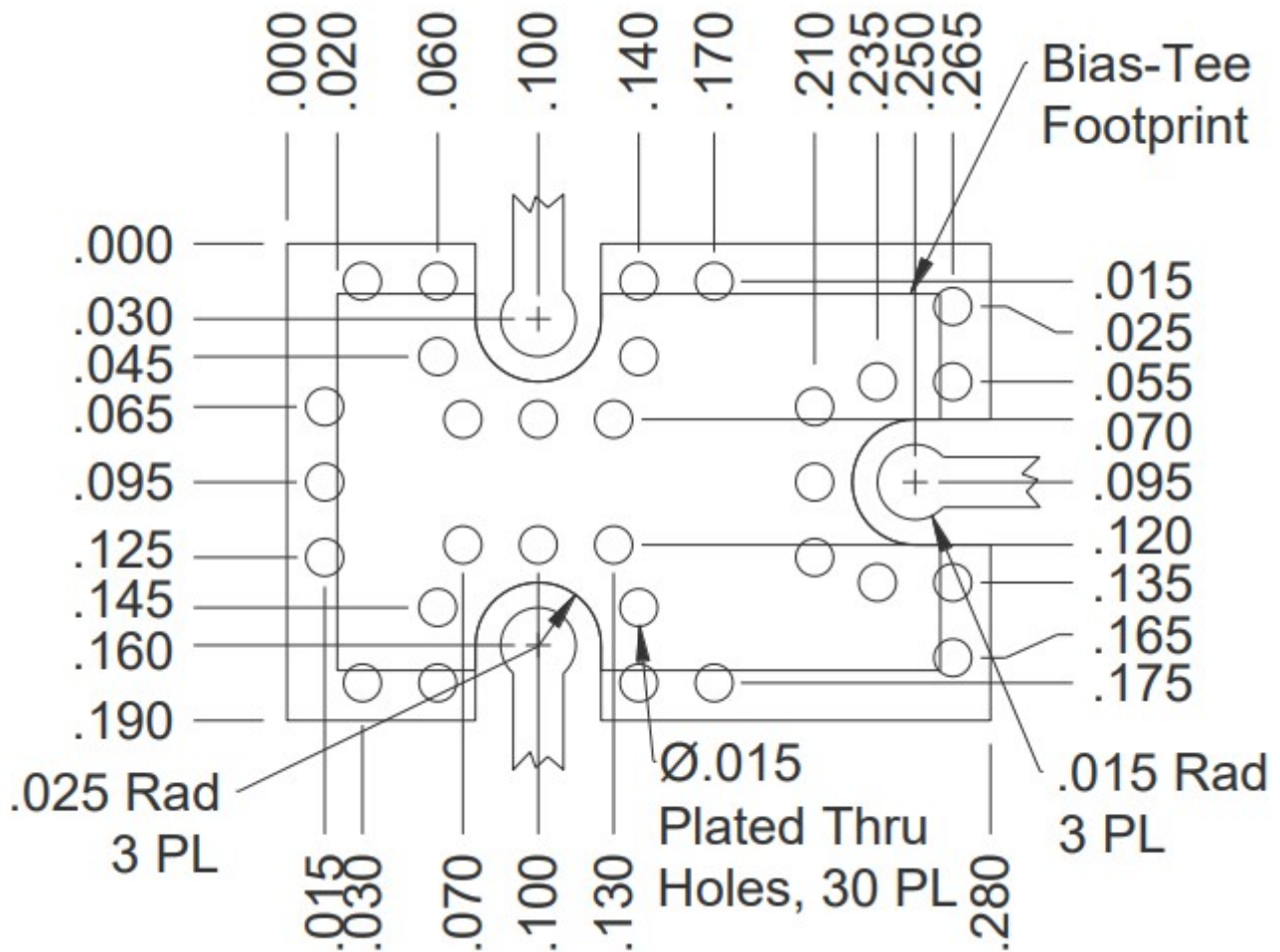


Mechanical Data

Outline Drawing



Footprint Image



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