

# DPX-4-1 Diplexer

## DEVICE OVERVIEW

### General Description

Available in either a connectorized or miniature surface mount package (0.240 inch x 0.150 inch), the DPX-4 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 1.4 dB with rejection typically exceeding 25 dB. Besides being ideal for transmitter/receiver applications, the DPX-4 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).



[Download s-parameters here](#)

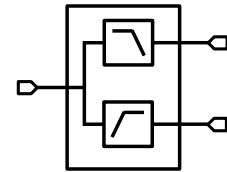
### Features

- 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
<a href="#">DPX-4-2</a>	Diplexer	DPX	RoHS REACH	Released	EAR99
DPX-4-1	Diplexer	DPX	RoHS REACH	Released	EAR99

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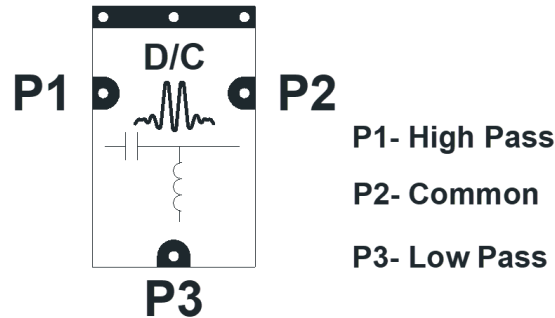
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## Revision History

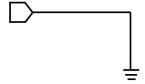
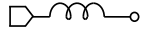


Revision Code	Revision Date	Comment
-	2012-10-18	Datasheet Initial Release

## 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

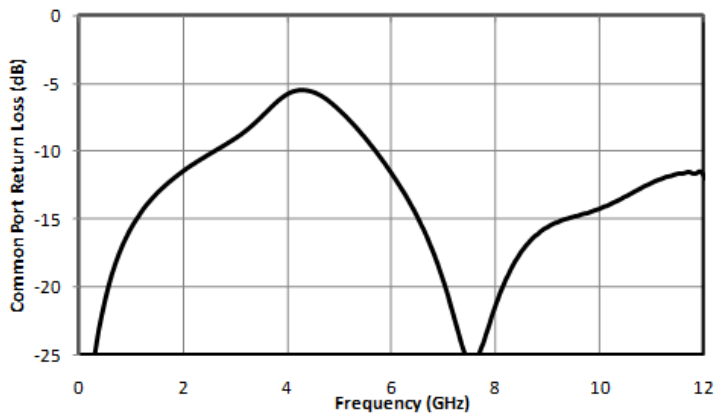
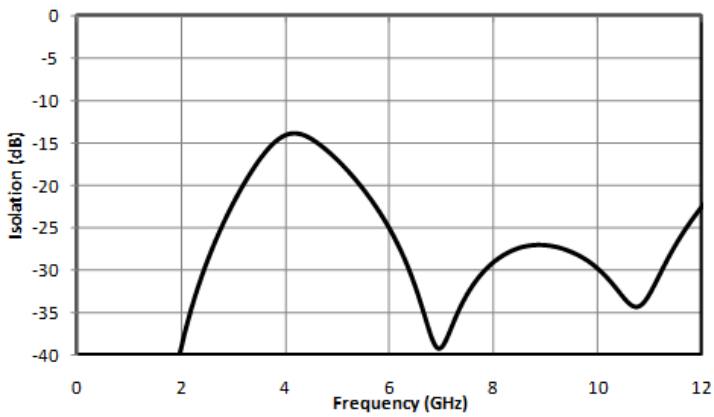
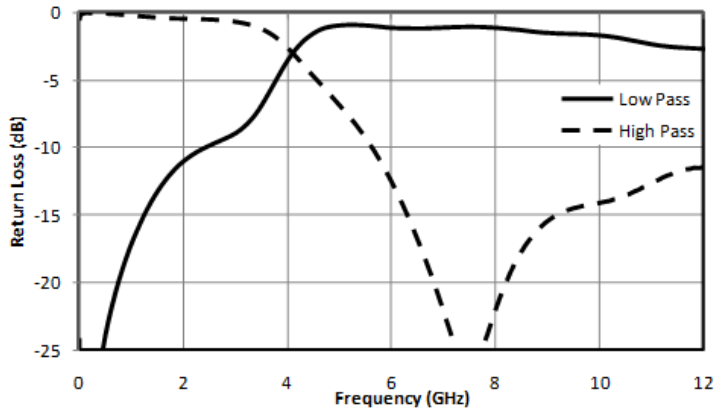
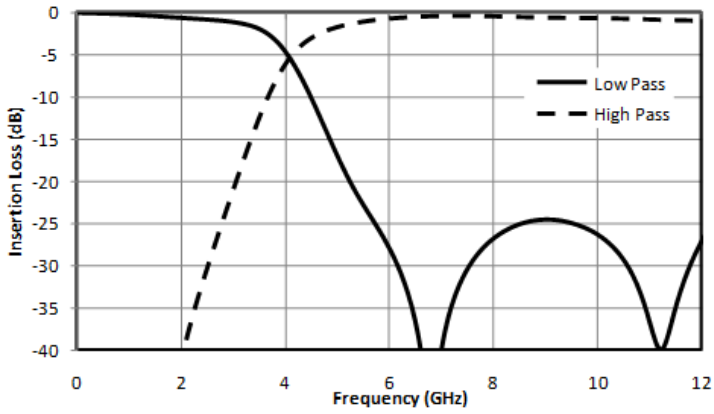
Parameter	Details	Rating
Weight	Package name: DPX	0.05g
Dimensions	-	3.81 x 6.10 mm
Moisture Sensitivity Level	-	MSL 3

## 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	<2.8 GHz	-	2.8	-	25	-	dB
30 dBc Low Pass Rejection Point	<2 GHz	-	2	30	40	-	dB
Common Port Return Loss	<2.8 GHz	-	2.8	-	12	-	dB
Common Port Return Loss	5.5-12 GHz	5.5	12	-	12	-	dB
Cross Over Frequency	4.1 GHz	4.1	4.1	-	5	-	%
High Pass Filter, Pass Band Insertion Loss	5.5-12 GHz	5.5	12	-	1.2	2.4	dB
High Pass Filter, Pass Band Return Loss	5.5-12 GHz	5.5	12	-	12	-	dB
Isolation	<2.8 GHz	-	2.8	20	30	-	dB
Isolation	5.5-12 GHz	5.5	12	15	25	-	dB
Low Pass Filter, Pass Band Insertion Loss	0-2.8 GHz	0	2.8	-	0.8	1.6	dB
Low Pass Filter, Pass Band Return Loss	<2.7 GHz	-	2.7	-	12	-	dB
Low Pass Filter, Stop Band Rejection	5.5-6 GHz	5.5	6	-	20	-	dB
Low Pass Filter, Stop Band Rejection	6-12 GHz	6	12	15	25	-	dB
RF Power	-	-	-	-	-	1	W
High Frequency Passband	-	-	-	5.5	-	12	GHz
Low Frequency Passband	-	-	-	0	-	2.8	GHz

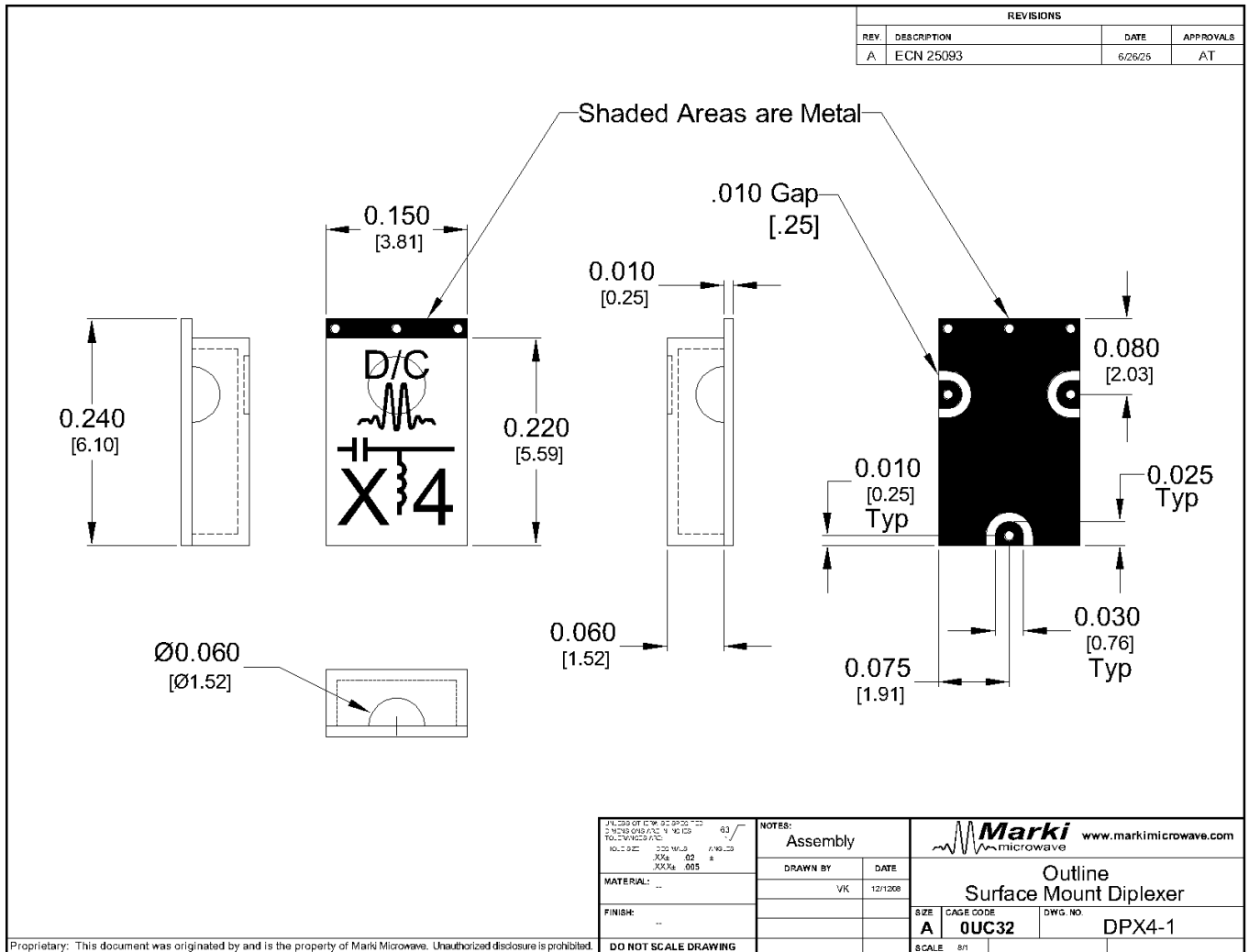
**Typical Performance Plots**



**Mechanical Data**

**Outline Drawing**

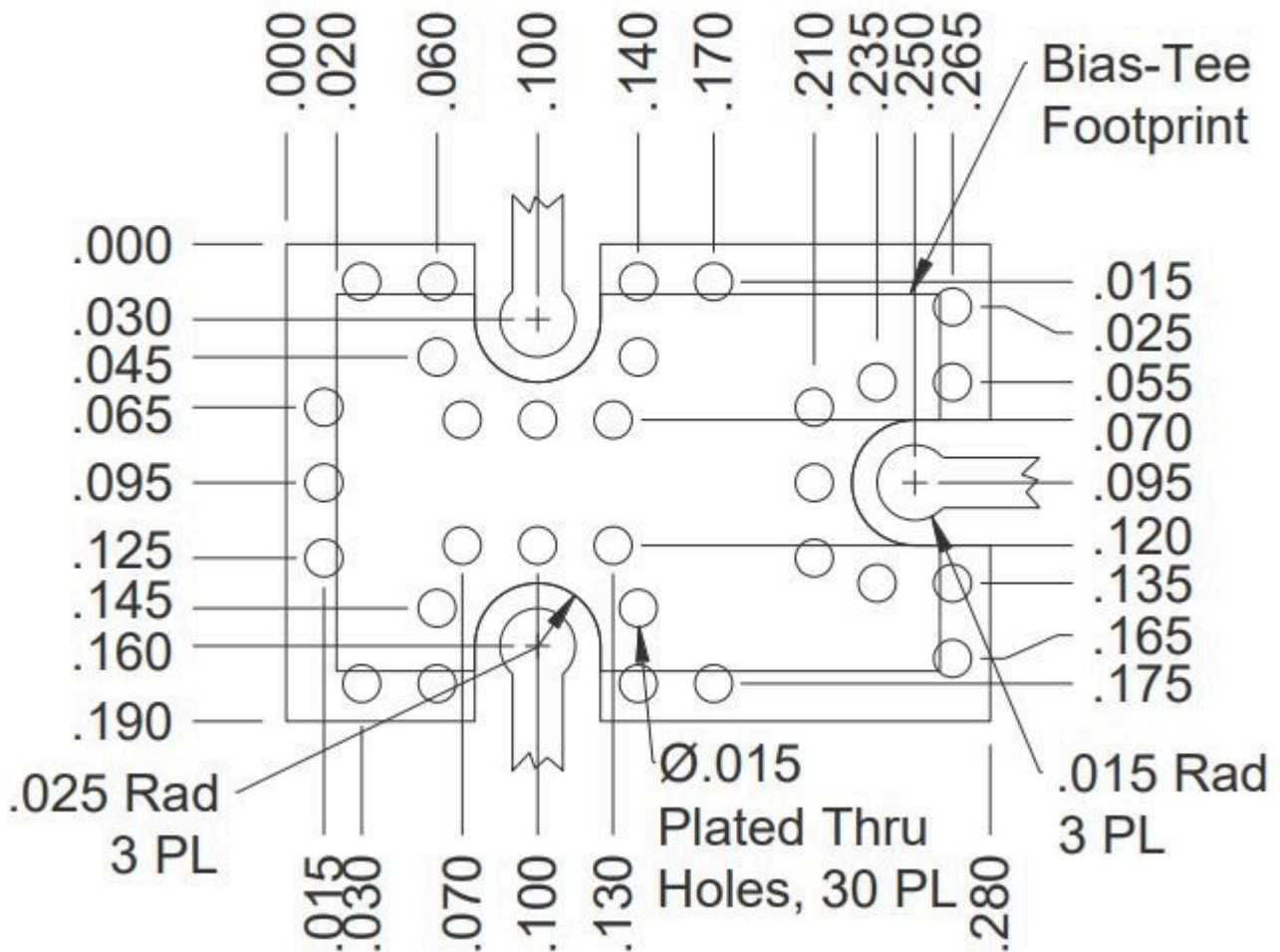
Download : [Outline 2D Drawing](#) | [Outline 3D Drawing](#) | [Outline 3D STP](#)



**Footprint Image**

Download : [Footprint Drawing](#)

**BTSM/PDSM Surface-Mount System Circuit Footprint**



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