

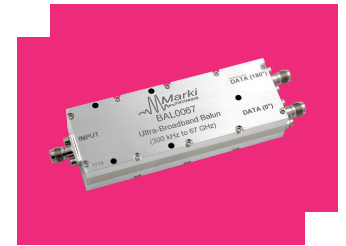
BAL-0067

Broadband Isolation Balun (300KHz to 67GHz)

DEVICE OVERVIEW

General Description

The BAL-0067 is a broadband balun, featuring high isolation and is hand-tuned for optimal phase and amplitude balance over a 300 kHz to 67 GHz bandwidth. It serves as an excellent choice for analog to digital converters, balanced receivers, baseband digital modulations, and signal integrity enhancement.



[Download s-parameters here](#)

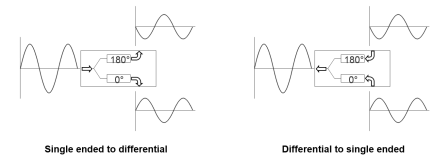
Features

- 2:1 Impedance Ratio
- 300 kHz to 67 GHz Balun (Balanced to Unbalanced Transformer)
- Termination insensitive: Particularly suited to testing poorly matched or non 50 Ω devices or for extending 2 port VNAs for differential testing

Applications

- Analog to Digital Converters
- Balanced Receivers
- Baseband Digital Modulation
- Signal Integrity

Functional Block Diagram



Part Ordering Options

Part Number	Description	Connectors	Green Status	Product Lifecycle	Export Classification
BAL-0067	Broadband Isolation Balun (300KHz to 67GHz)	<u>Standard</u>	REACH RoHS	Released	EAR99

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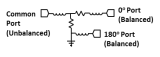
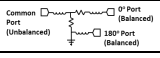
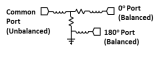
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Revision History

Revision Code	Revision Date	Comment
-	2014-01-01	Datasheet initial Release
A	2016-01-01	Typical Performance Plots Updated
B	2019-10-01	Mixed Mode Scattering Parameters added
C	2019-11-01	RoHS Compliant assembly
D	2020-07-01	Specs Table Update
E	2020-10-01	Specs Table Update

Port Configuration and Functions

Port Functions

Port	Function	Connector Type	Description	DC Equivalent Circuit
0° Port (Balanced)	0° Port	1.85F	The 0° port is DC connected to the common port through a resistor and to ground through a resistor.	
180° Port (Balanced)	180° Port	1.85F	The 180° port is DC shorted to ground.	
Common (Unbalanced Port)	RF Input	1.85F	The common port is DC connected to the 0° port through a resistor and to ground through a resistor.	

Specifications

Absolute Maximum Ratings

Parameter	Maximum Rating	Unit
RF Power Handling	1	W

Package Information

Parameter	Details	Rating
Weight	-	125g
Dimensions	-	91.44 x 27.94 mm

Electrical Specifications

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

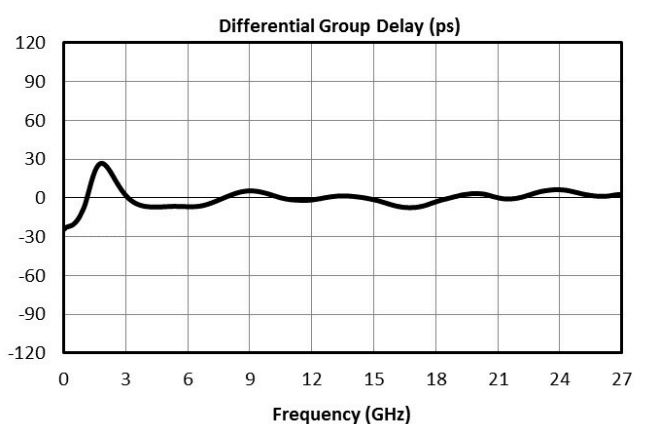
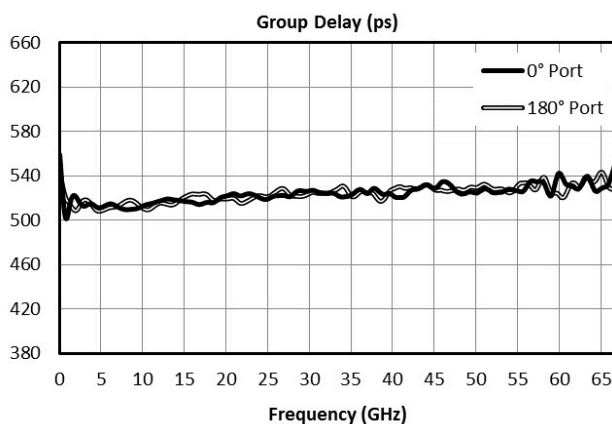
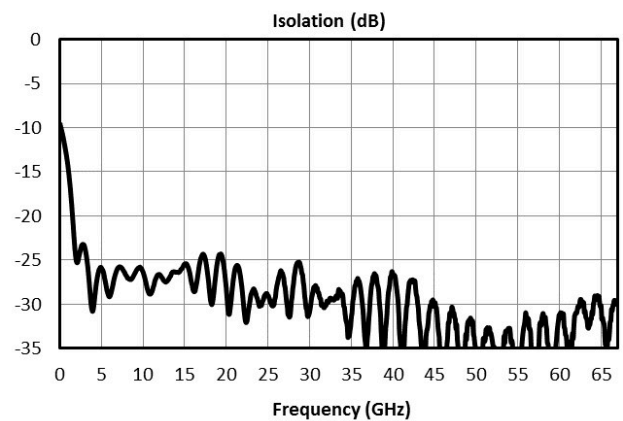
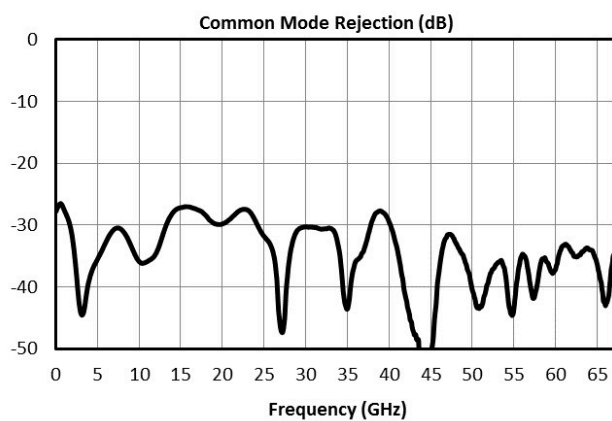
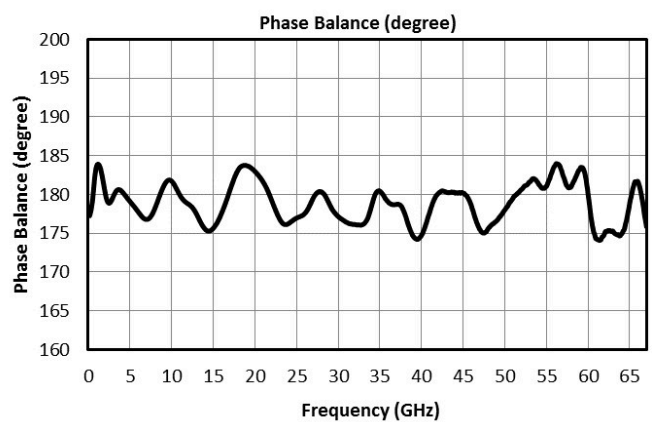
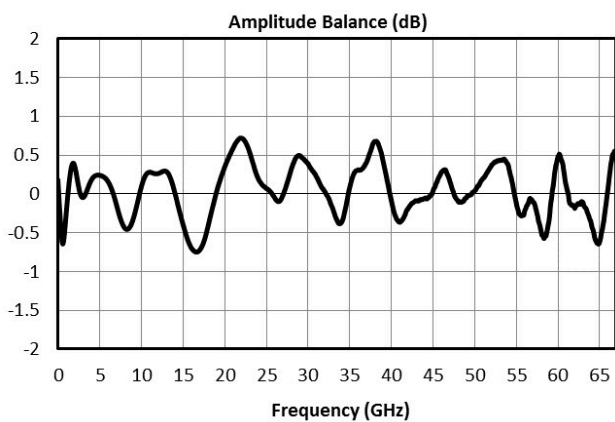
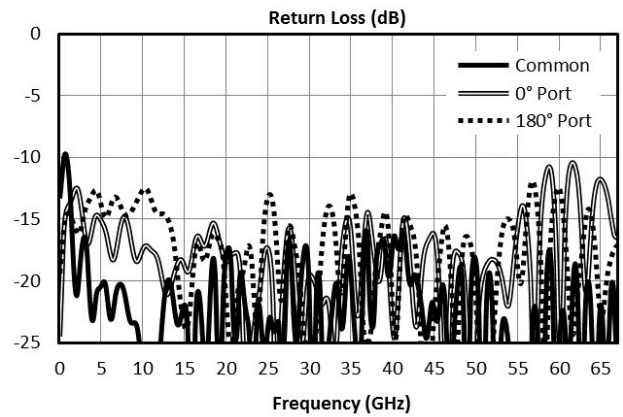
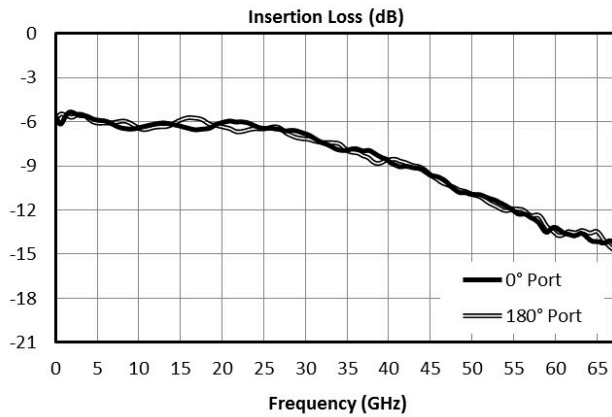
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Amplitude Balance	-	0.0003	67	-	0.7	2.1	dB
Common Mode Rejection	-	0.0003	67	20	27	-	dB
Group Delay	-	0.0003	67	-	520	-	ps
Insertion Loss as a Mode Converter	-	0.0003	35	-	3	6	dB
Insertion Loss as a Mode Converter	-	35	67	-	8.5	-	dB
Isolation	-	1	67	-	25	-	dB
Nominal Phase Shift	-	0.0003	67	-	180	-	°
Phase Balance	-	0.0003	67	-	4	12	°
Risetime/Falltime ¹	-	0.0003	67	-	2	-	ps
RMS Group Delay Ripple	-	0.0003	67	-	7	-	ps
VSWR (Input)	-	0.0003	67	-	1.5	-	
VSWR (Output)	-	0.0003	67	-	1.6	-	
Impedance Ratio	-	-	-	-	2:1	-	

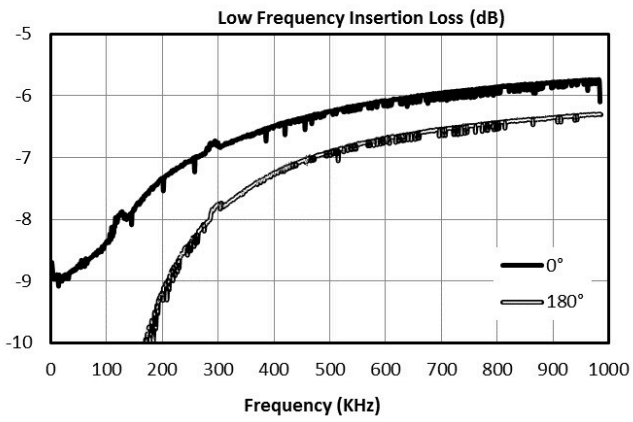
^[1] Specified as 80%/20%. Calculated from $\tau_{balun2} = (\tau_{out2} - \tau_{in2})$

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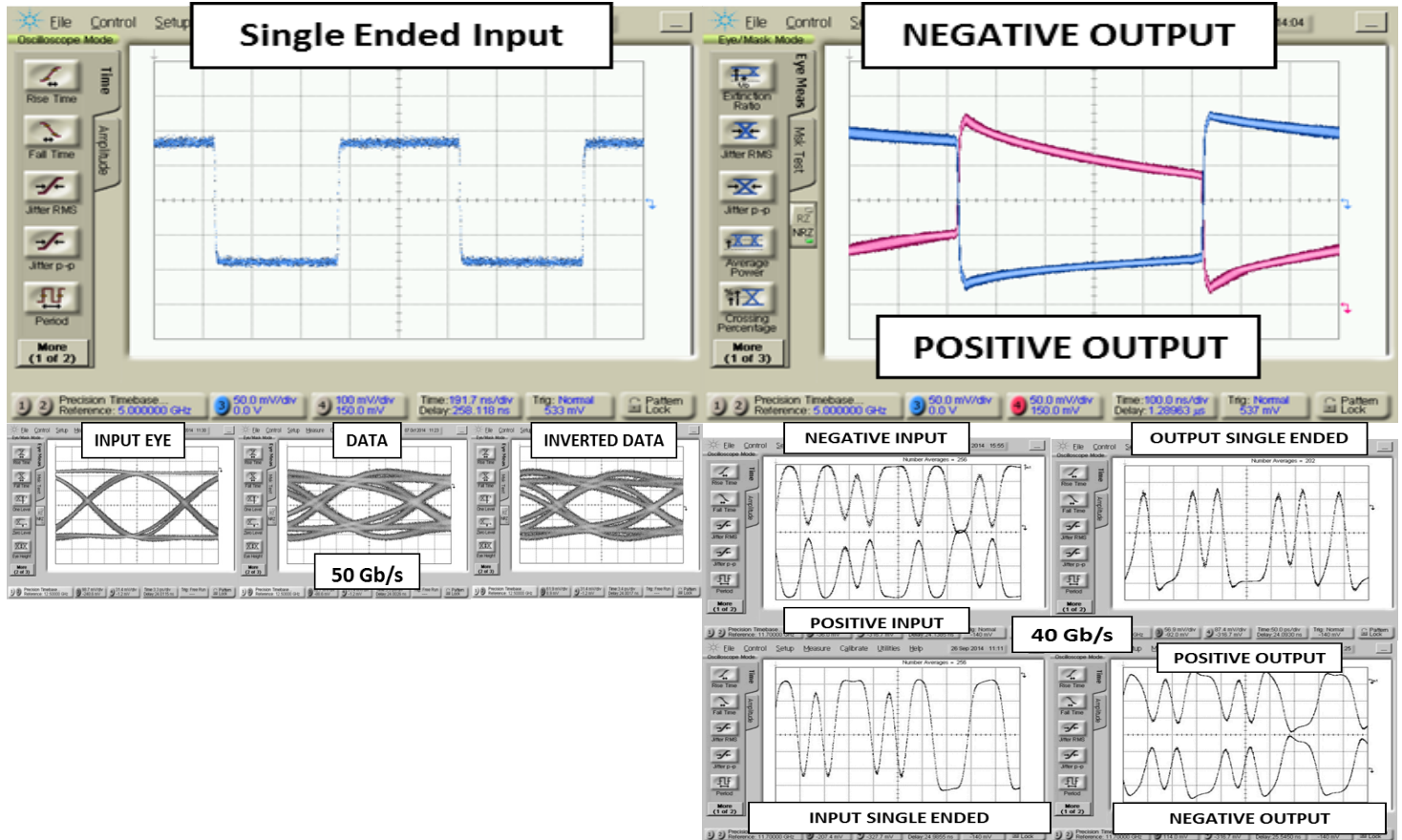
Broadband Isolation Balun (300KHz to 67GHz)

Typical Performance



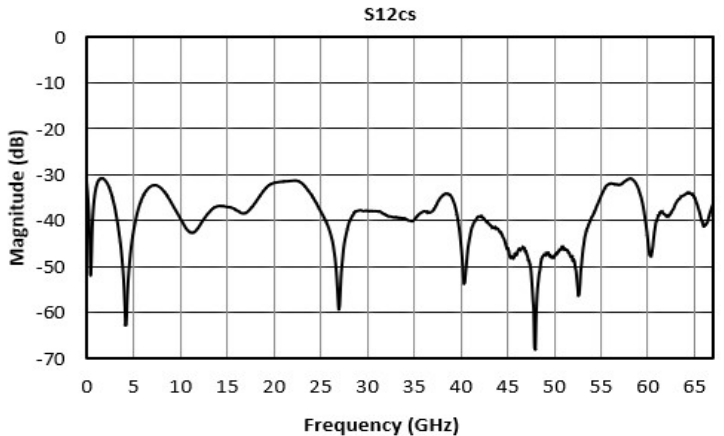
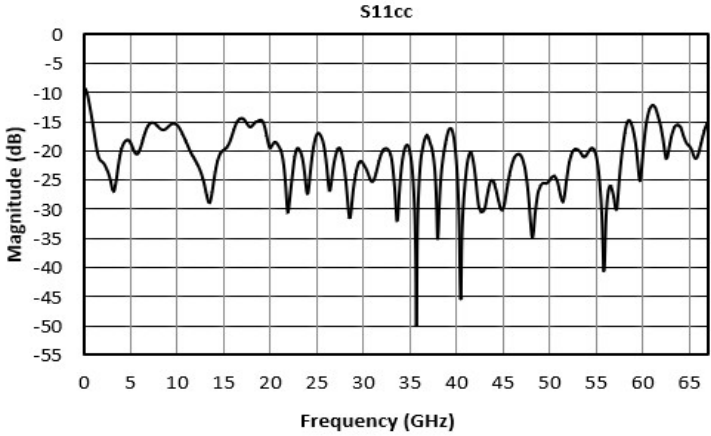
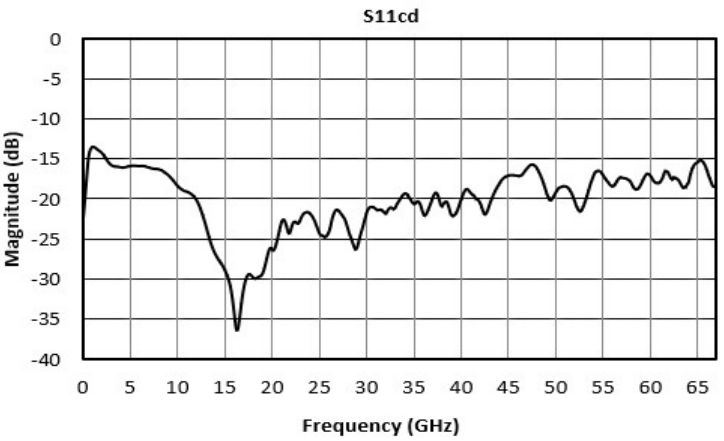
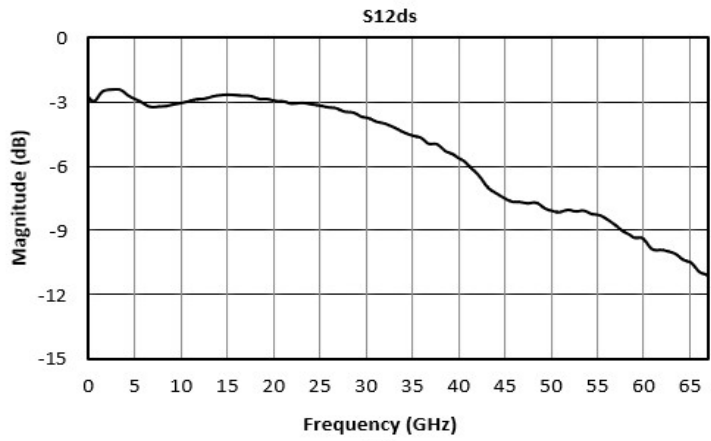
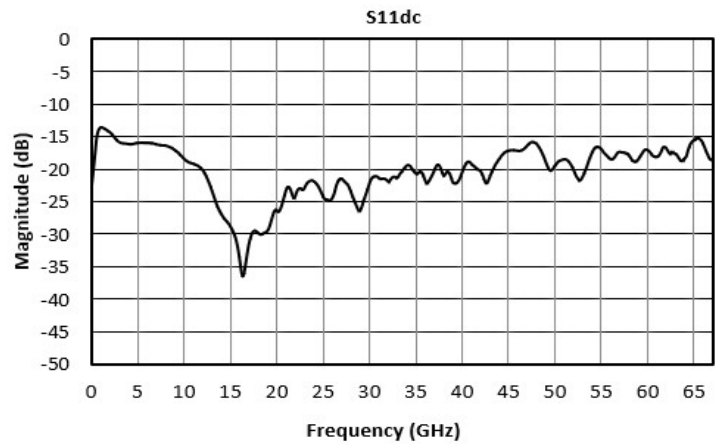
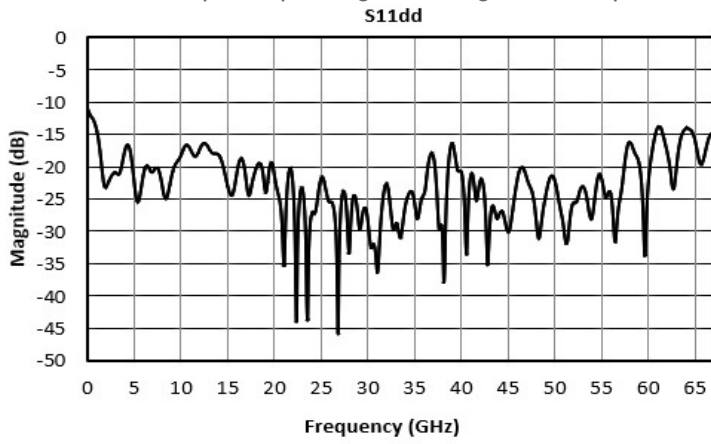


Time Domain Performance Plots



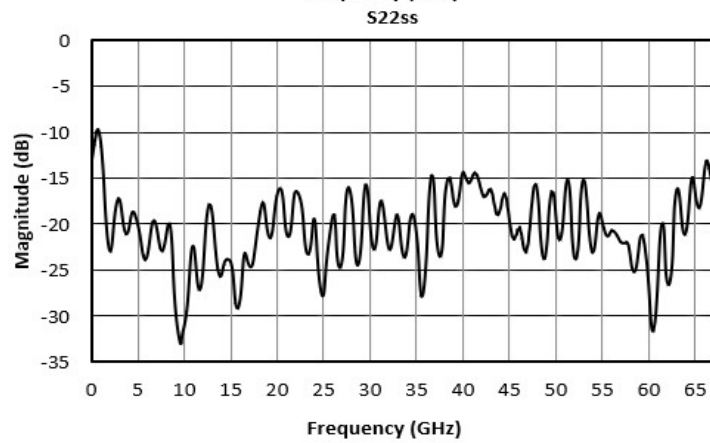
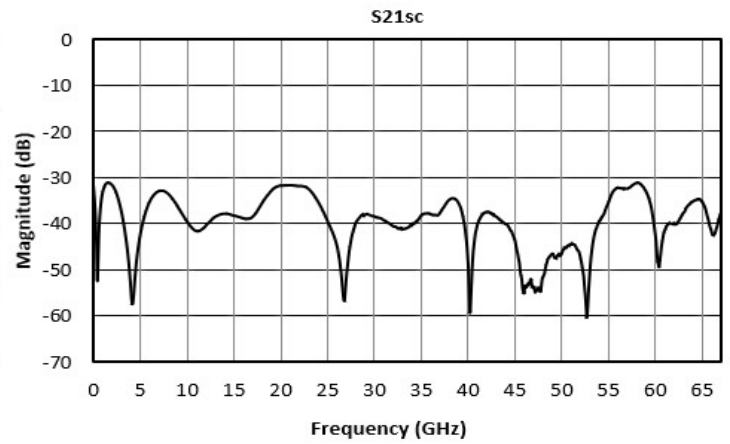
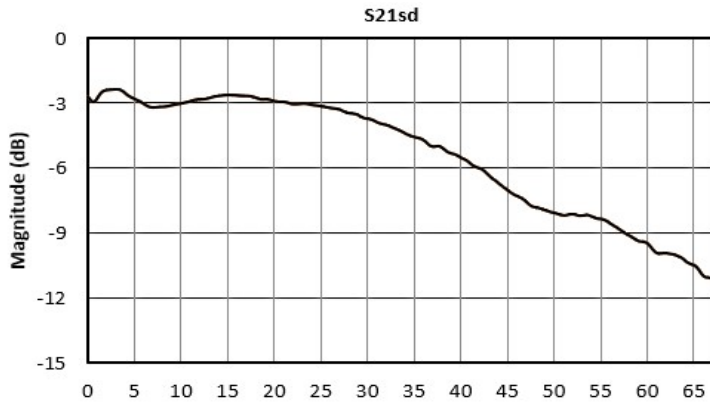
Mixed Mode Scattering Parameters

Mixed mode scattering parameters are used to characterize differential circuits. For baluns, this means that the 0° and 180° ports become a single 100Ω differential port and the common port remains the same 50Ω common port. The two-port s-parameters of the balun are then characterized based on differential (d), common mode (c), or single-ended (s) signals. For example: S12ds is the differential output response given a single ended input.



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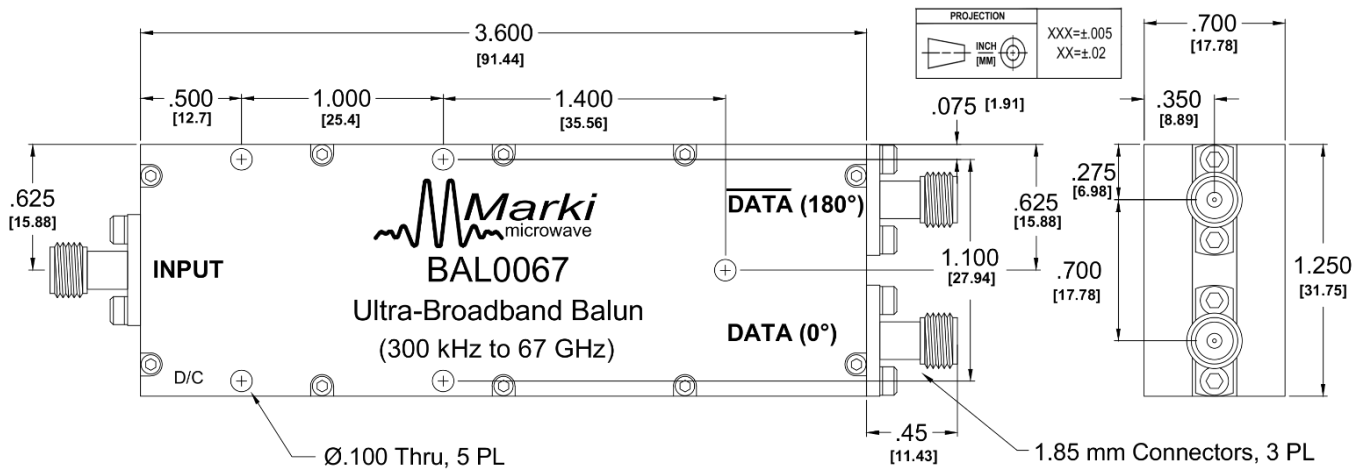
Broadband Isolation Balun (300KHz to 67GHz)



Mechanical Data

Outline Drawing

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



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