

BAL-0012SSG

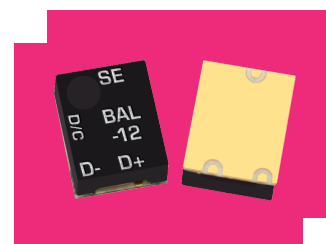
Surface-Mount Broadband Balun

DEVICE OVERVIEW

General Description

The BAL-0012SSG is a broadband surface mount balun, hand-tuned for optimal phase and amplitude balance over a 10 MHz to 12 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](#)



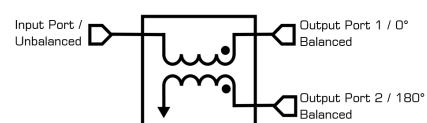
Features

- 10 MHz to 12 GHz 1:2 Balun (Balanced to Unbalanced Transformer)
- Transforms 50 Ω Input to 100 Ω Differential (50 Ohm Single) Output
- Tuned for Optimal Phase/Amplitude Balance

Applications

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

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
BAL-0012SSG	Surface-Mount Broadband Balun	SSG	REACH RoHS	Released	EAR99
<u>EVAL-BAL-0012</u>	Evaluation Board, 0.01 - 12 GHz Broadband Balun	EVAL	REACH RoHS	Released	EAR99

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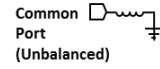
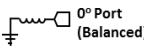
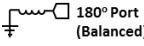
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Revision History

Revision Code	Revision Date	Comment
-	2020-06-01	Initial Datasheet Release

Port Configuration and Functions

Port Functions

Port	Function	Description	Equivalent Circuit for Package
Common Port / In (Unbalanced)	RF Input	The common port is DC short to ground.	 Common Port (Unbalanced)
Out 1 / 0° Port (Balanced)	0° Port	The 0° port is DC short to ground.	 0° Port (Balanced)
Out 2 / 180° Port (Balanced)	180° Port	The 180° port is DC short to ground.	 180° Port (Balanced)

Specifications

Absolute Maximum Ratings

Parameter	Maximum Rating	Unit
Maximum Operating Temperature	100	°C
Maximum Storage Temperature	125	°C
Minimum Operating Temperature	-55	°C
Minimum Storage Temperature	-65	°C
RF Power Handling	30	dBm

Package Information

Parameter	Details	Rating
ESD	250 to < 500 Volts	HBM Class 1A
Dimensions	-	4.83 x 6.10 mm

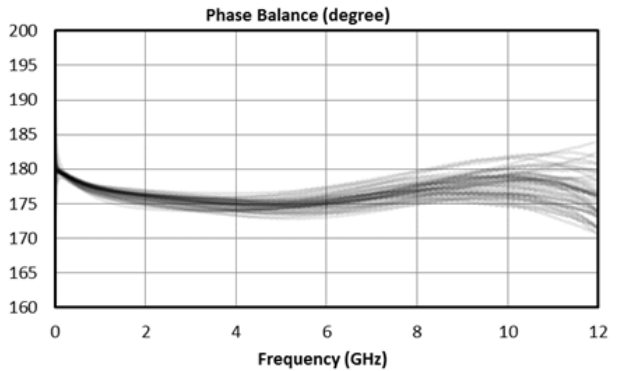
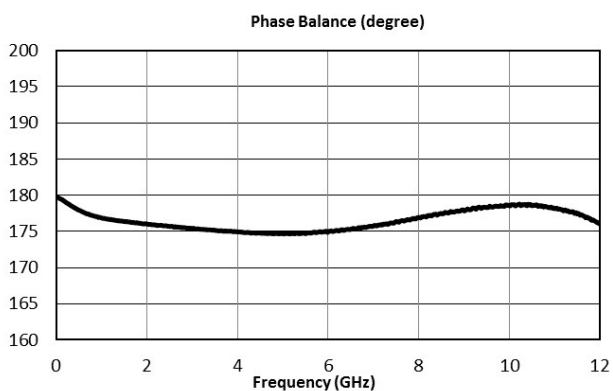
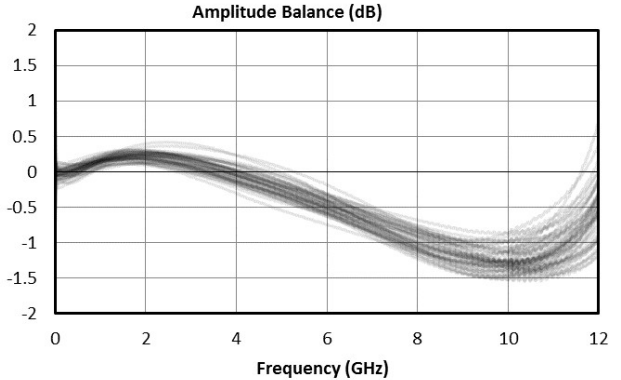
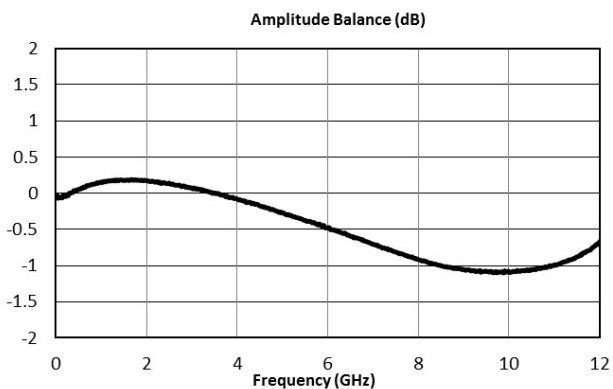
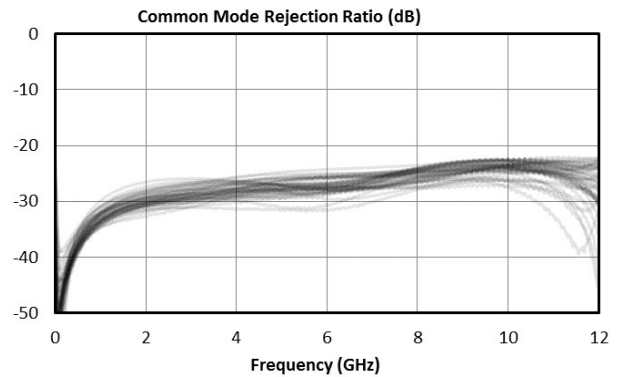
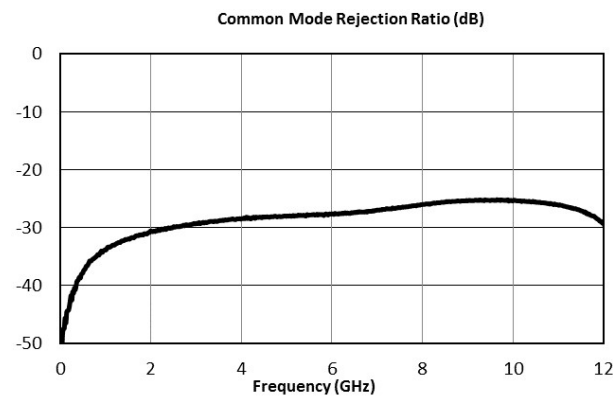
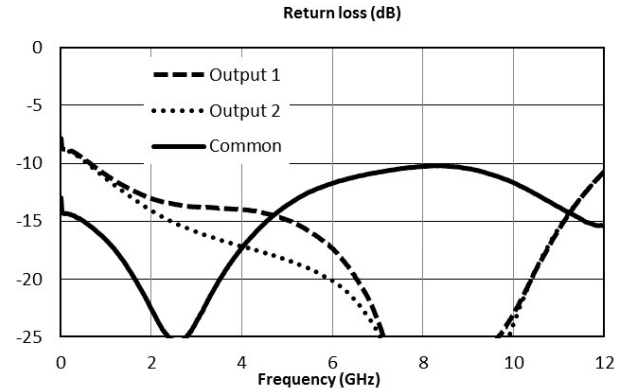
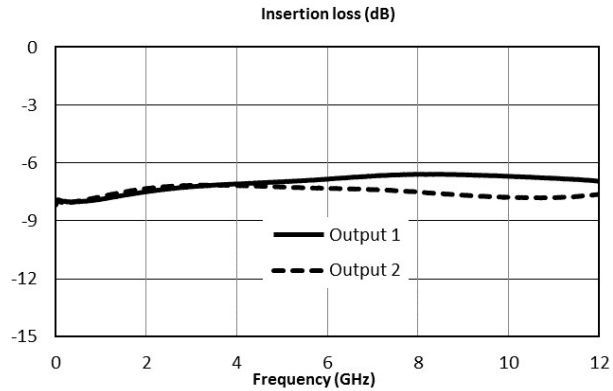
Electrical Specifications

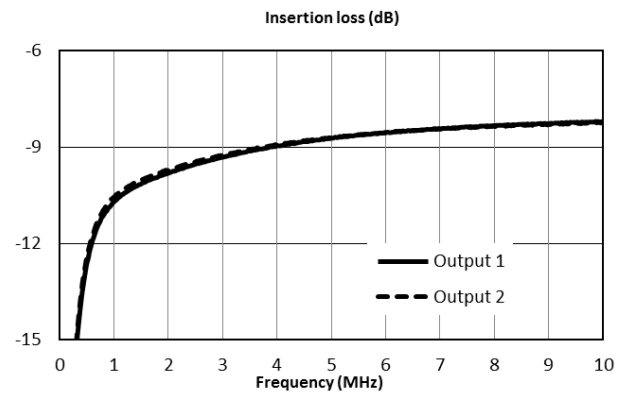
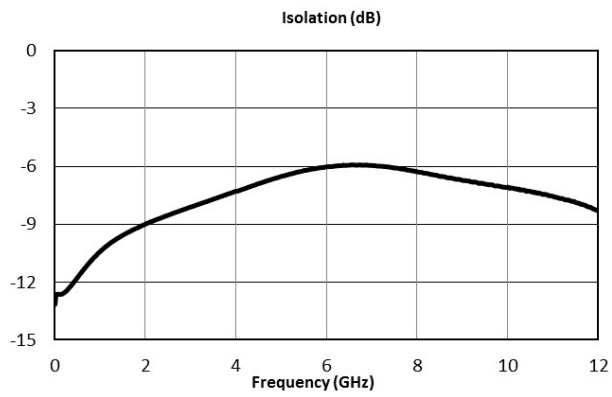
Specifications guaranteed from -55 to +100°C, measured in a 50Ω system.

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Insertion Loss as a Mode Converter	-	0.01	12	-	5	6.5	dB
Nominal Phase Shift	-	0.01	12	-	180	-	°
Amplitude Balance	-	0.01	12	-	0.6	1.8	dB
Phase Balance	-	0.01	12	-	5	12	°
Common Mode Rejection	-	0.01	12	18	26	-	dB
Isolation	-	0.01	12	-	8	-	dB
VSWR	-	0.01	12	-	1.6	-	-
Total Input Power	-	0.01	12	-	-	1	W

Typical Performance Scattering Parameter

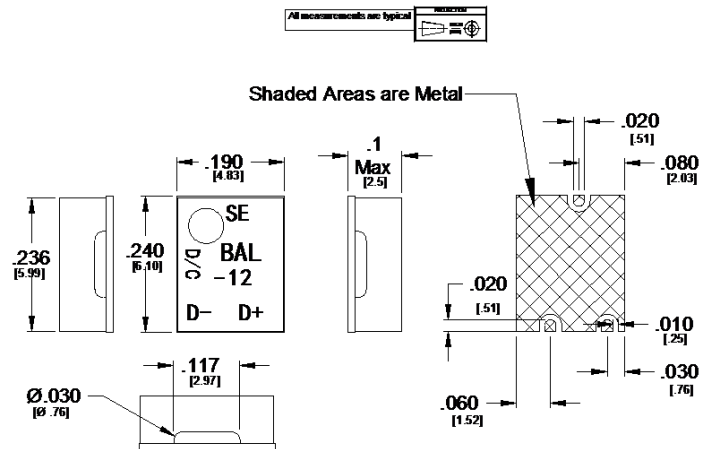
Three port scattering parameters measured as three single-ended 50Ω ports showing relationship between any two ports.



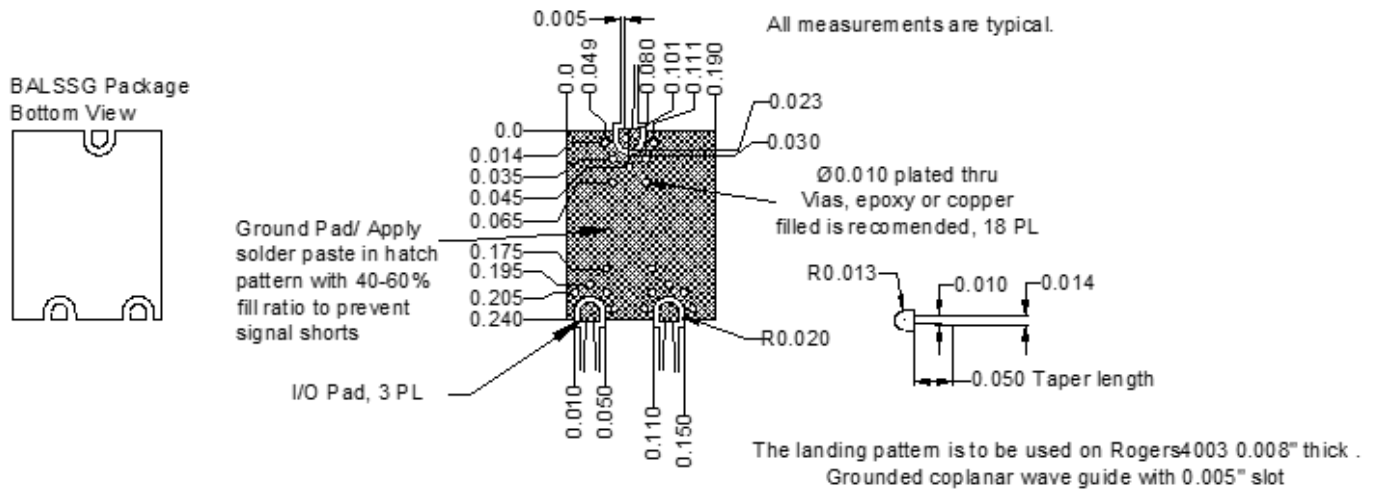


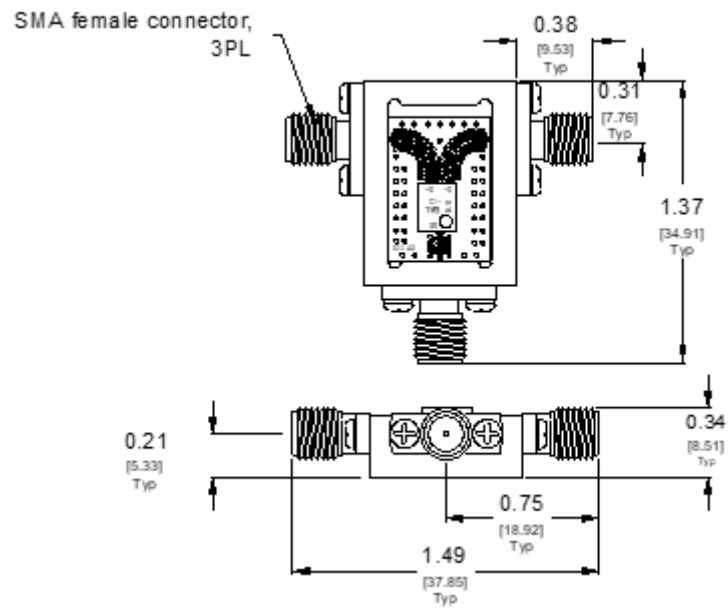
Mechanical Data

Outline Drawing



Footprint Image





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