

PBR-0003

High Isolation Power Combiner

DEVICE OVERVIEW

General Description

The PBR-0003 is a 300 kHz to 3 GHz high isolation power combiner. This power combiner features a unique hand tuned construction based on a bridge coupler that enables 45 dB typical isolation across the operational bandwidth. High isolation power combiners are ideal for power combining uncorrelated signals, such as when performing intermodulation distortion (IMD) tests like IP2 and IP3. Their higher insertion loss and uncontrolled phase balance makes them unsuitable for power dividing applications.



Features

- 300kHz to 3 GHz Power Combiner
- 45 dB Typ Isolation
- Applications: IP3 Measurement and High Isolation Test Set-ups

Applications

N/A

Functional Block Diagram

N/A

Part Ordering Options

Part Number	Description	Connectors	Green Status	Product Lifecycle	Export Classification
PBR-0003	High Isolation Power Combiner	<u>Standard</u>	REACH RoHS	Released	EAR99

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Revision History

Revision Code	Revision Date	Comment
-	2015-07-01	Initial Date Released

Port Configuration and Functions

Port Functions

Port	Function	Connector Type	Description	Equivalent Circuit for Package
C	Common	SMAF	Combined output port	-
IN 1	Input 1	SMAF	RF input 1 of the combiner.	-
IN 2	Input 2	SMAF	RF input 2 of the combiner.	-

Specifications

Absolute Maximum Ratings

Parameter	Maximum Rating	Unit
RF Power Handling, Average	1	W

Package Information

Parameter	Details	Rating
Weight	-	38g
Dimensions	-	66.04 x 16.76 mm

Electrical Specifications

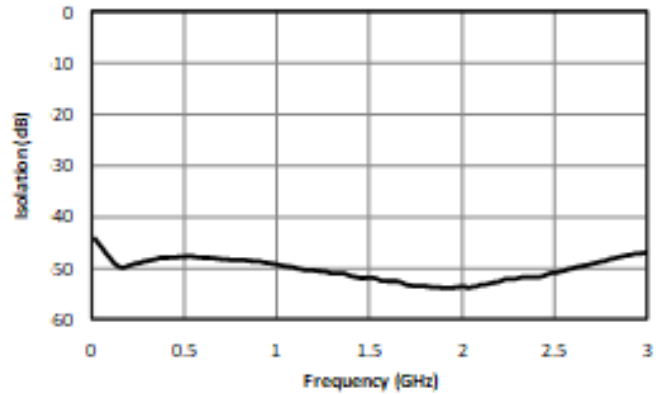
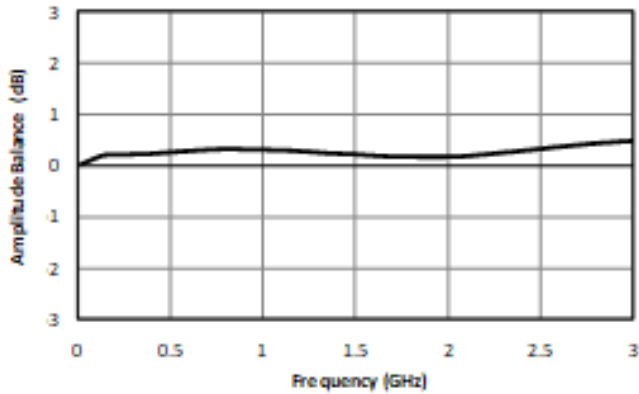
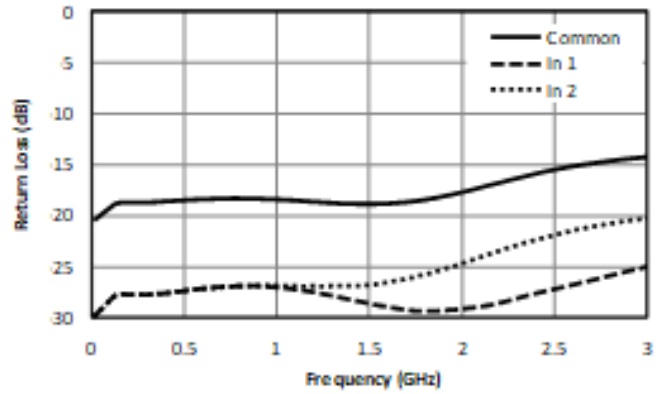
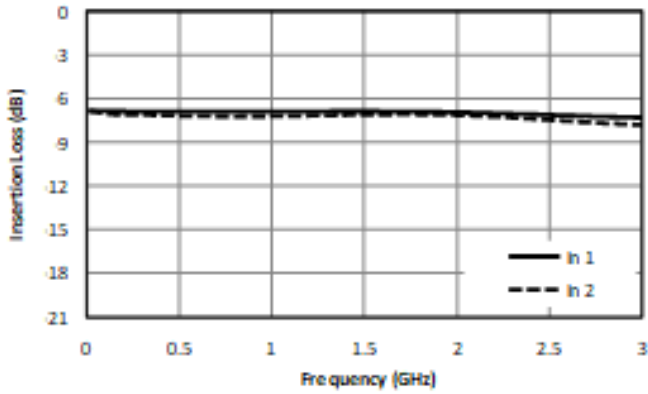
Specifications guaranteed from -55 to +100°C, measured in a 50Ω system.

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Amplitude Balance	-	0.0003	3	-	0.5	1	dB
Common Port VSWR	-	0.0003	3	-	1.3	1.7	
Input Port VSWR	-	0.0003	-	-	1.15	1.45	
Insertion Loss ¹	-	0.0003	3	-	1.25	2.5	dB
Isolation	-	0.01	3	37	45	-	dB
Isolation	-	0.0003	0.01	15	30	-	dB
Nominal Power Splitting (dB)	-	0.0003	3	-	6	-	dB

^[1] Excess Insertion Loss = (Input Port to Common Port Insertion Loss) – 6 dB.

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

Typical Performance Plots



Application Information

IP3 measurement using high isolation power combiner

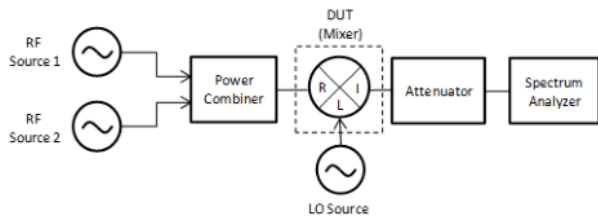


Fig. 1. Mixer IP3 measurement

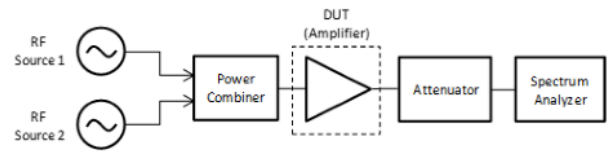
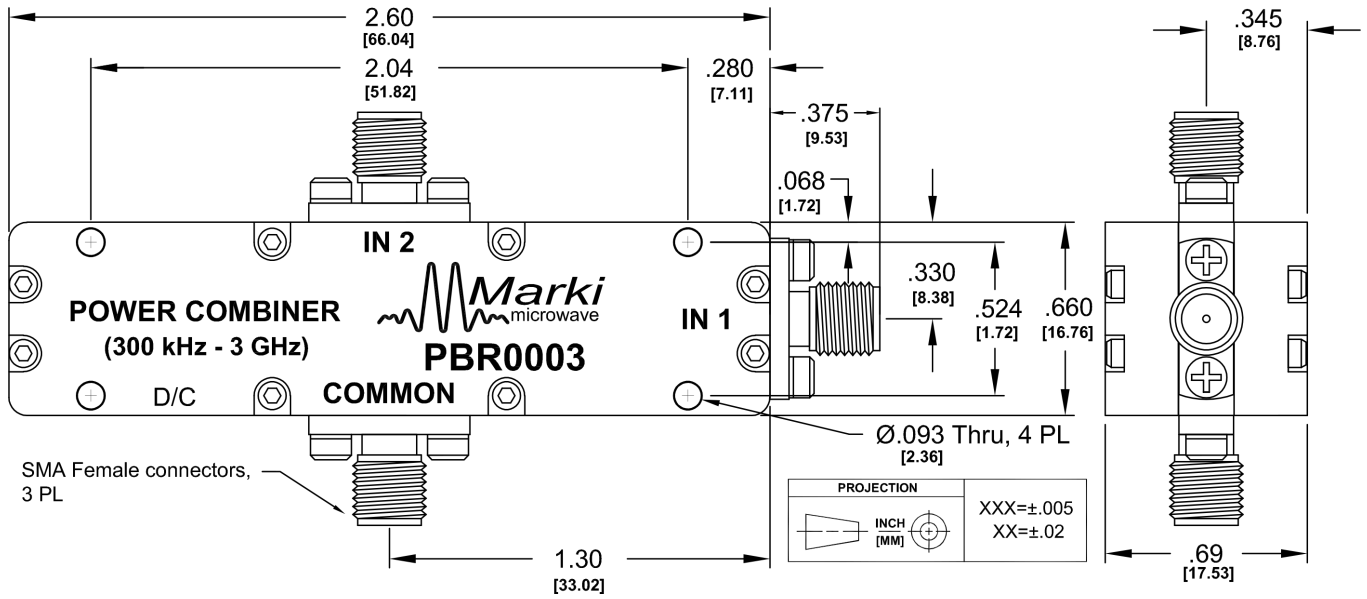


Fig. 2. Amplifier IP3 measurement

Mechanical Data

Outline Drawing

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



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