

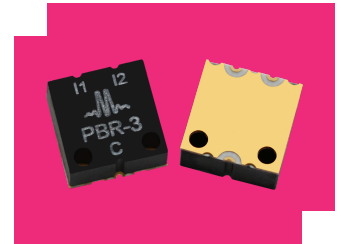
PBR-0003SMG

High Isolation Power Combiner

DEVICE OVERVIEW

General Description

The PBR-0003SMG is a 10 MHz to 3 GHz surface mount high isolation power combiner. This power combiner features a unique hand tuned construction that enables 40 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.



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Features

- 10 MHz to 3 GHz Power Combiner/Divider
- 40 dB Typ Isolation

Applications

- High Isolation Power Combining for Test Equipment

Functional Block Diagram

N/A

Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
PBR-0003SMG	High Isolation Power Combiner	SMG	REACH RoHS	Released	EAR99
<u>EVAL-PBR-0003</u>	Evaluation Board, 10 MHz to 3 GHz High Isolation Power Combiner	EVAL	REACH RoHS	Released	EAR99

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Revision History

Revision Code	Revision Date	Comment
-	2013-11-01	Datasheet Initial Release
A	2019-03-01	Evaluation board outline added

Port Configuration and Functions

Port Functions

Port	Function	Description	DC Equivalent Circuit
C	Common	Combined output port	-
I1	Input 1	RF input 1 of the combiner.	-
I2	Input 2	FR input 2 of the combiner	-

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, Average	1	W

Package Information

Parameter	Details	Rating
Weight	Package name: SMG	0.24g
Dimensions	-	8.13 x 8.13 mm
Moisture Sensitivity Level	-	MSL 1

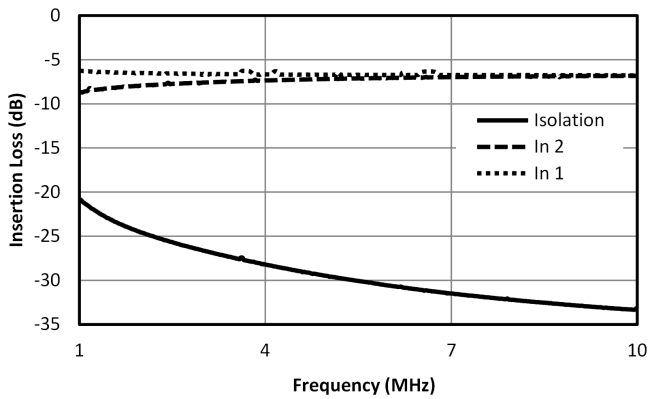
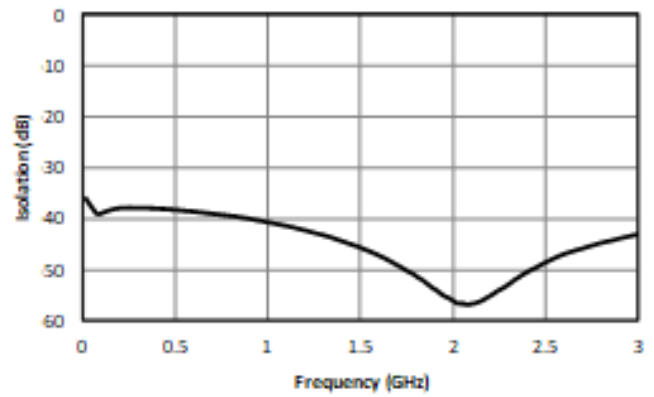
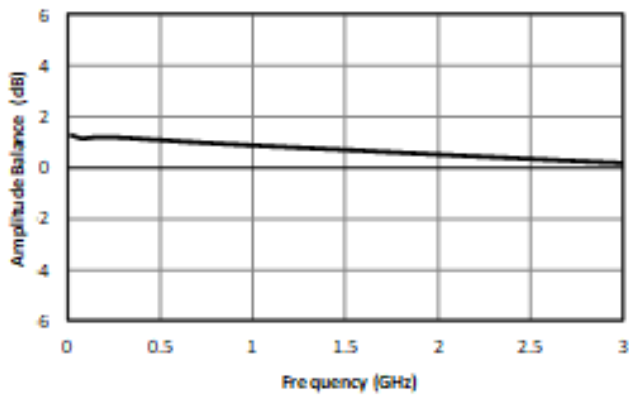
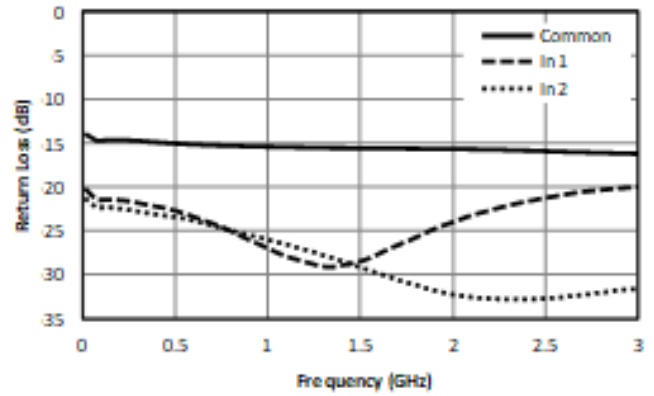
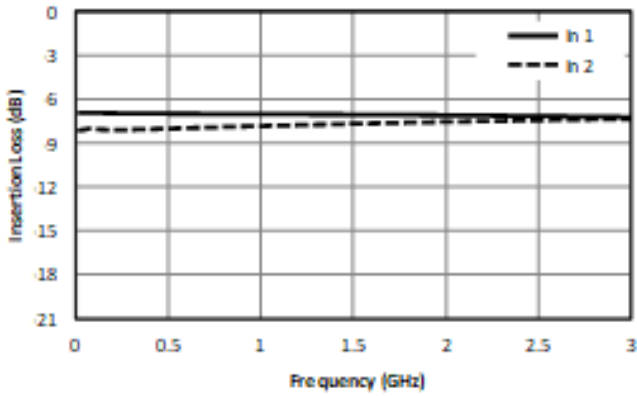
Electrical Specifications

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	-	0.01	3	-	0.8	1.6	dB
Common Port VSWR	-	0.01	3	-	1.4	-	
Input Port VSWR	-	0.01	3	-	1.2	-	
Insertion Loss ¹	-	0.01	3	-	1.5	3	dB
Isolation	-	0.01	3	28	40	-	dB
Nominal Power Splitting (dB)	-	0.01	3	-	6	-	dB

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

Typical Performance Plots



Application Information

IP3 measurement using high isolation power combiner

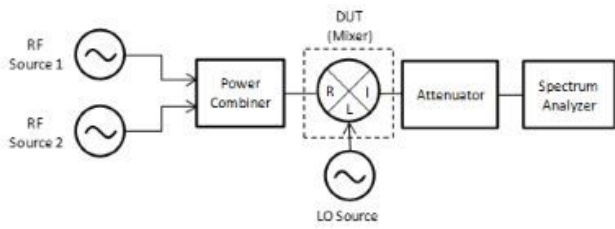


Fig. 1. Mixer IP3 measurement

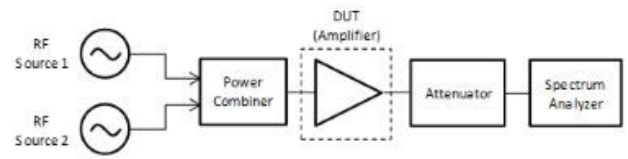
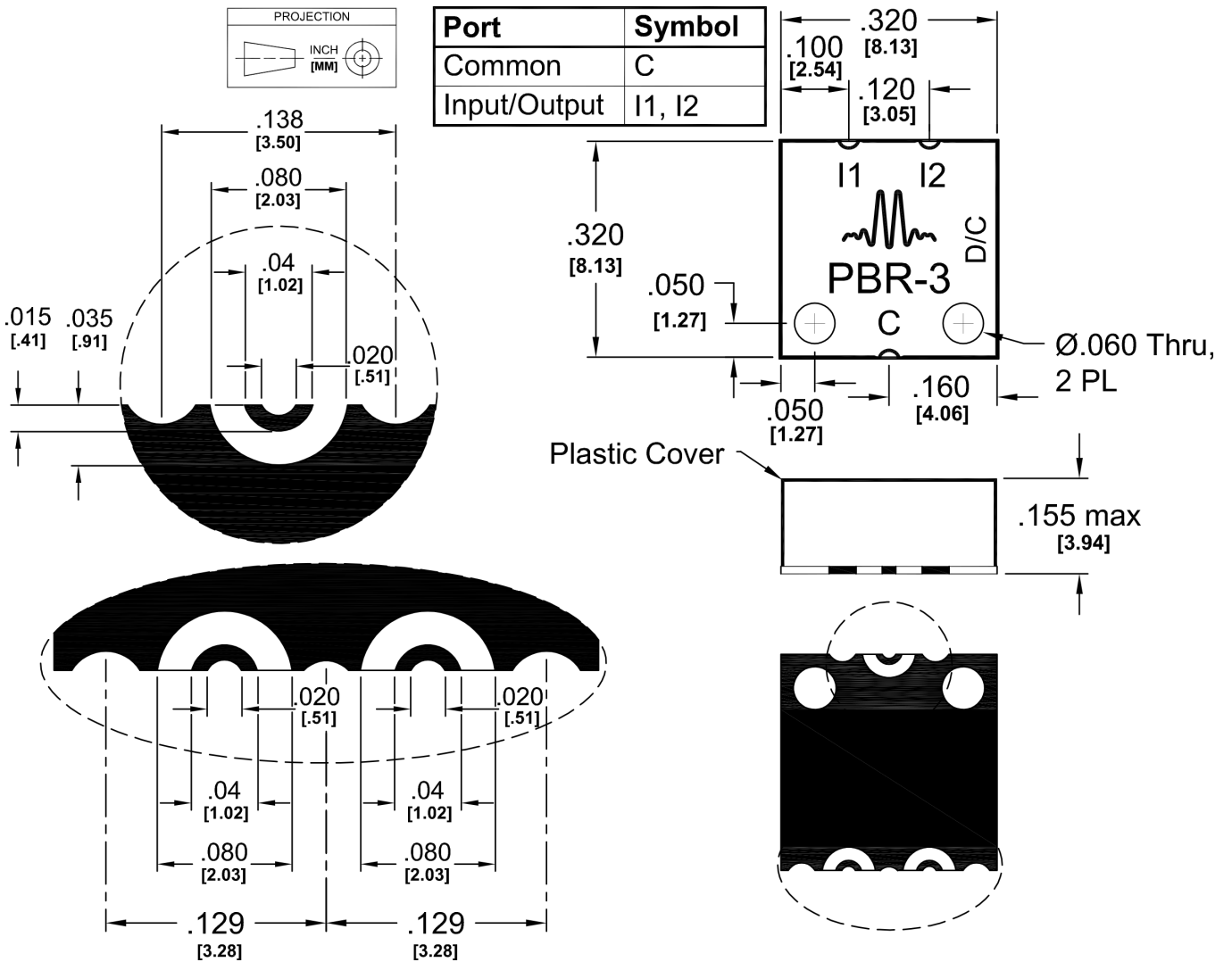


Fig. 2. Amplifier IP3 measurement

Mechanical Data

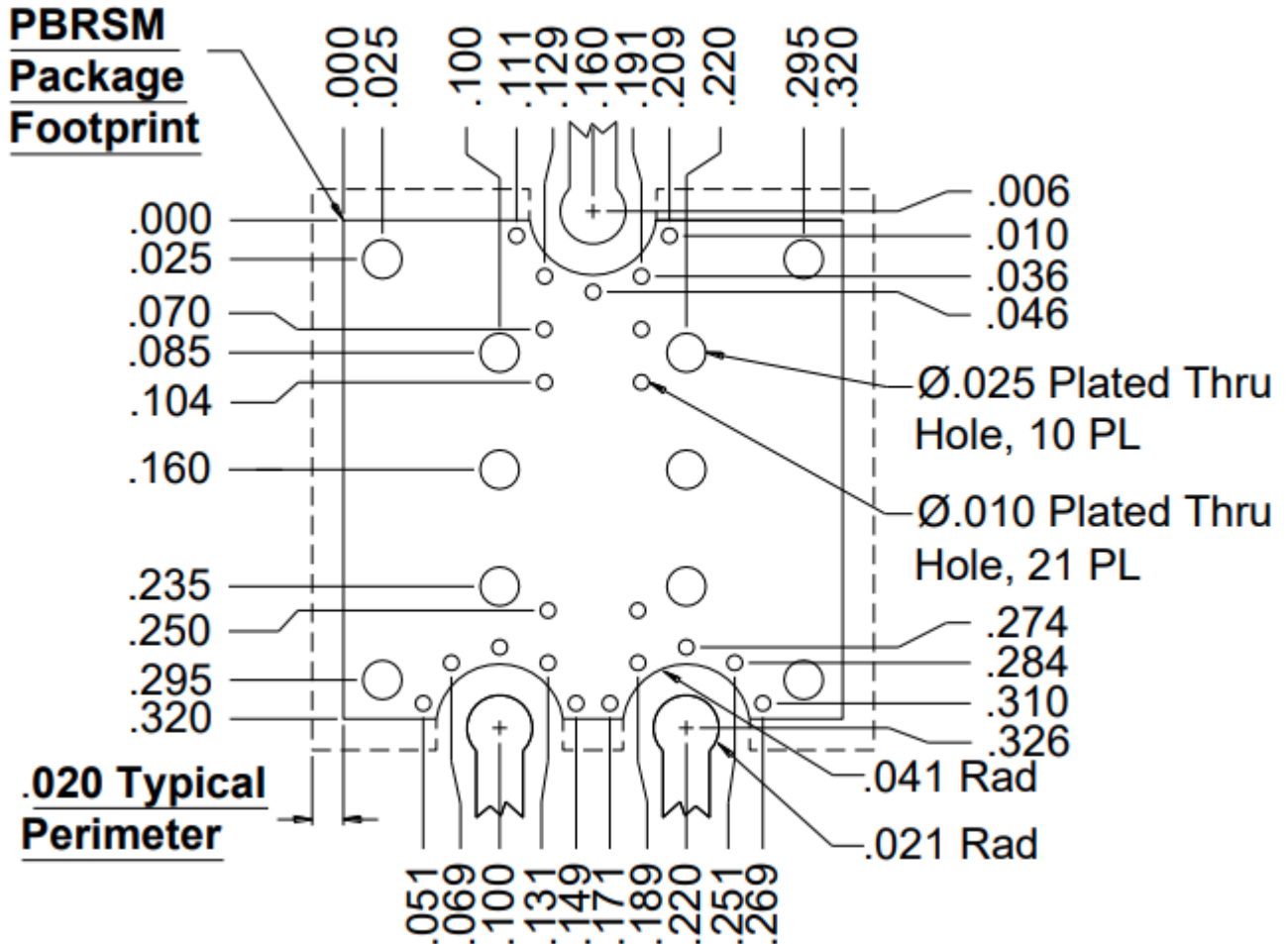
Outline Drawing

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




Footprint Image

Download: [Footprint Drawing](#)



Evaluation Board - Outline Drawing

 Outline Drawing

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