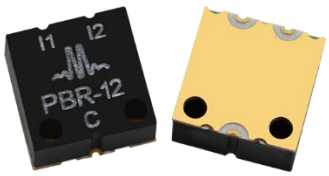
LEAD-FREE / RoHS-COMPLIANT

HIGH ISOLATION POWER COMBINER PBR-0012SMG

Features

- 10 MHz to 12 GHz Power Combiner/Divider
- 30 dB Typ Isolation
- Applications:
  - High Isolation Power Combining for Test Equipment
  - Transceiver duplexing
- Microwave Power Dividers & Couplers App Note



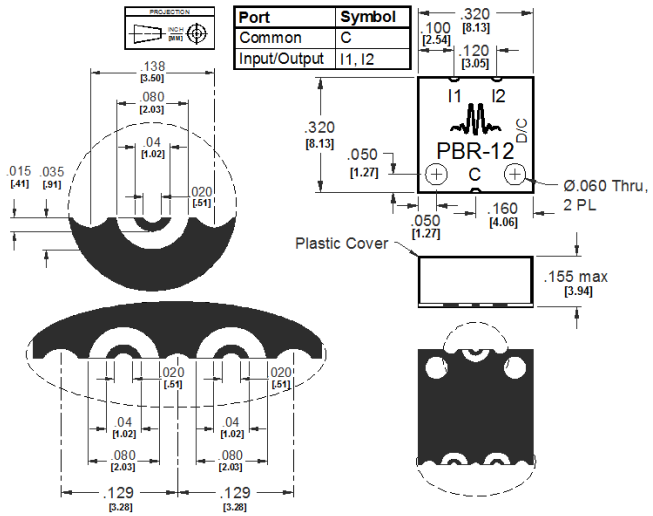
Electrical Specifications - Specifications guaranteed from -55 to +100°C, measured in a 50Ω system.

Parameter	Frequency Range (GHz)	Min	Typ	Max
Nominal Power Splitting (dB)	0.01-12		6	
Amplitude Balance (dB)			±1	
Excess Insertion Loss (dB)[1]			1.7	3.5
Split Port VSWR (Return Loss dB)			1.9 (10)	
Common Port VSWR (Return Loss dB)			1.4 (15)	1.9 (10)
Isolation (dB)	0.01-8	22	30	
	8-12	20	25	
Power (W)				1

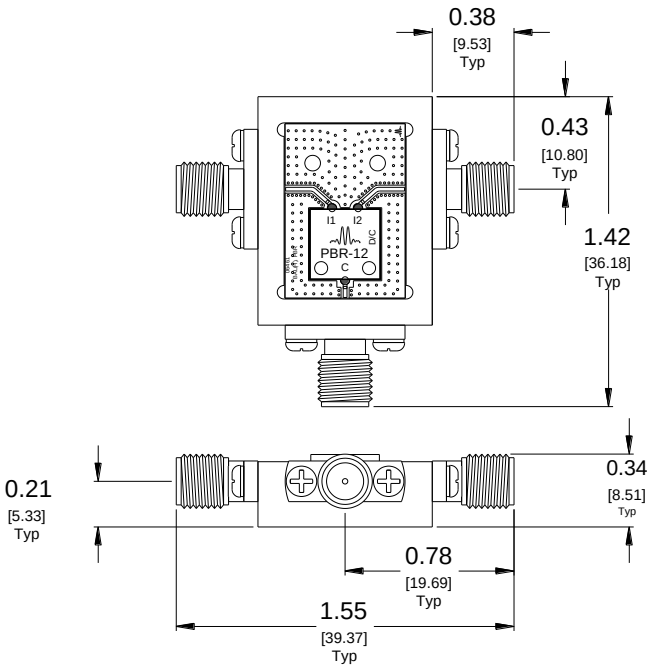
[1]Excess Insertion Loss = (Input Port to Common Port Insertion Loss) – 6 dB.

Model Number	Description
PBR-0012SMG	10 MHz to 12 GHz Power Combiner, Surface Mount, LEAD-FREE/RoHS COMPLIANT
EVAL-PBR-0012	Connectorized Evaluation Fixture, LEAD-FREE/RoHS COMPLIANT

215 Vineyard Court, Morgan Hill, CA 95037 | Ph: 408.778.4200 | Fax 408.778.4300 | info@markimicrowave.com



Substrate material is 8-mil thick Rogers 4003, 1 Oz Electrodeposited Cu. I/O Pads & Ground Plane Finish is Gold Flash, 5 to 10 µ-inches, over Electroplated Nickel, 100-200 µ-inches, over Cu. See PBRSMG-PCB for suggested PCB layout. Drying bake required after aqueous wash.



Evaluation Board outline

IP3 measurement using high isolation power combiner

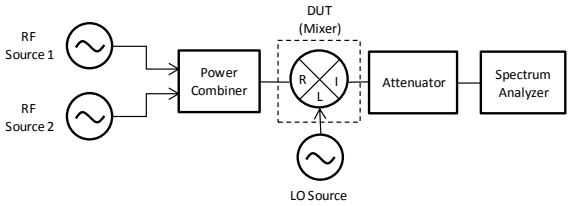


Fig. 1. Mixer IP3 measurement

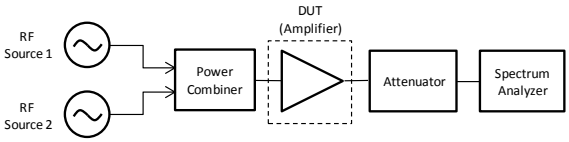


Fig. 2. Amplifier IP3 measurement

Typical Performance

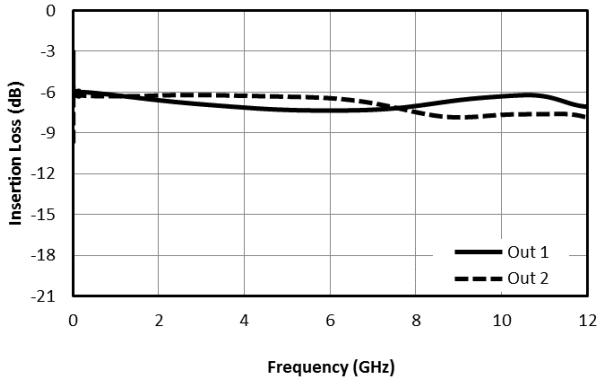


Fig. 3. Input port to common port insertion loss.

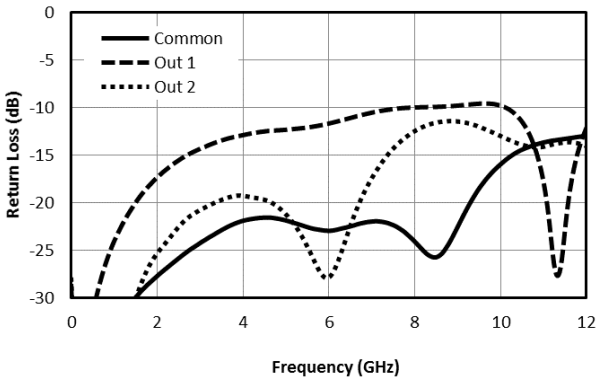


Fig. 4. Return loss for input and common ports.

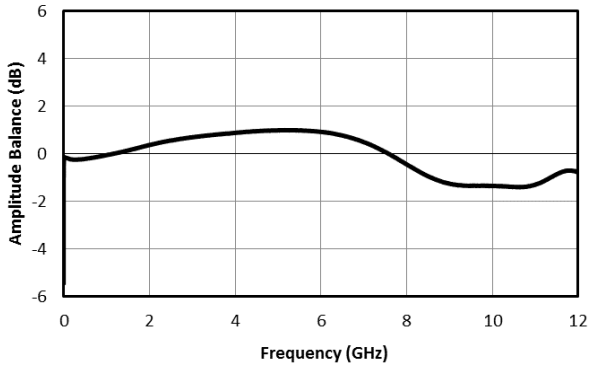


Fig. 5. Amplitude balance between input ports.

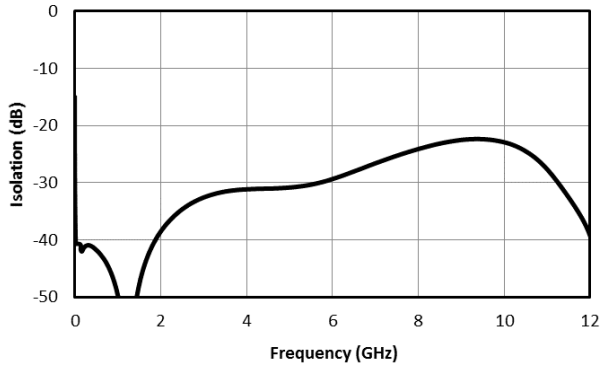


Fig. 6. Isolation between input ports.

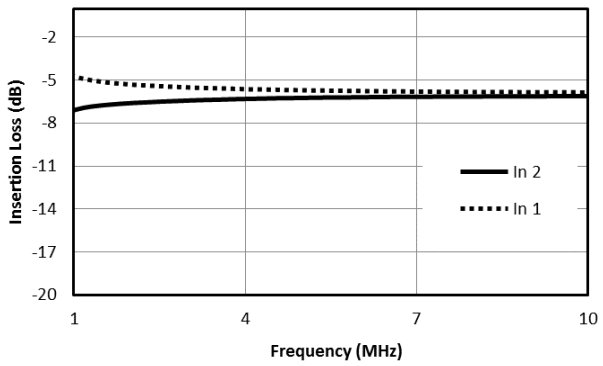


Fig. 7. Low Frequency Input port to common port insertion loss.

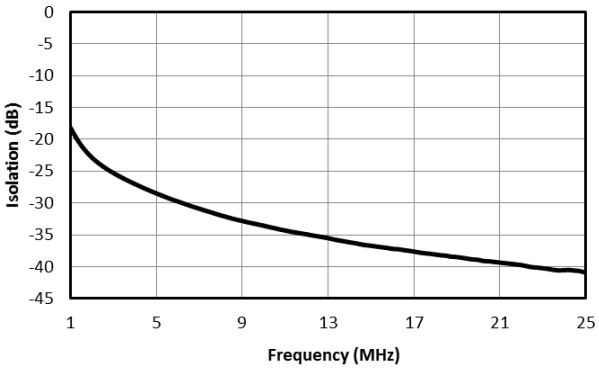


Fig. 8. Low Frequency Isolation between input ports.

Revision History

Revision code	Revision Date	Comment
-	September 2019	Datasheet initial Release