

Low Cost Two-Way SMT Power Splitter/Combiner

1510 - 1660 MHz

DS52-0004

V4.00

Features

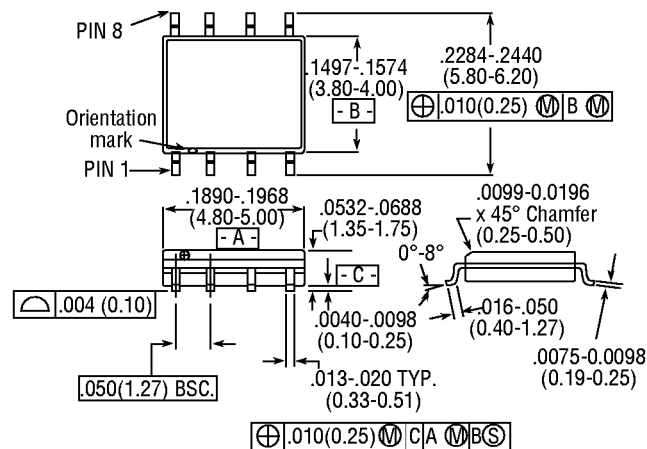
- Small Size, Low Profile and Low Cost
- Industry Standard SOIC-8 SMT Plastic Package
- Excellent Amplitude and Phase Balance
- Superior Repeatability
- Typical Insertion Loss: 0.4 dB
- Typical Isolation: 20 dB
- 1 Watt Power Handling
- Frequency Coverage for GPS and LEO Programs

Description

M/A-COM's DS52-0004 is an IC-based monolithic power splitter/combiner in a low cost SOIC-8 plastic package. This 2-way power splitter/combiner is ideally suited for applications where small size, low insertion loss, excellent phase/amplitude tracking and low cost are required. Typical applications include GPS receivers and LEO satellite programs, where size and PCB real estate are at a premium. Available in tape and reel.

The DS52-0004 is fabricated using a passive-integrated circuit process. The process features full chip passivation for increased performance and reliability.

SO-8



8-Lead SOP outline dimensions
Narrow body .150

(All dimensions per JEDEC No. MS-012-AA, Issue C)
Dimensions in () are in mm.

Unless Otherwise Noted: .xxx = ± 0.010 (.xx = ± 0.25)
.xx = ± 0.02 (.x = ± 0.5)

Ordering Information

Part Number	Package
DS52-0004	SOIC 8-Lead Plastic Package
DS52-0004-TR	Forward Tape and Reel*
DS52-0004-RTR	Reverse Tape and Reel*

* If specific reel size is required, consult factory for part number assignment.

Typical Electrical Specifications^{1,2} T_A = +25°C

Parameter	Units	Min.	Typ.	Max.
Insertion Loss Above 3.0 dB	dB		0.4	0.6
Isolation	dB	15	20	
VSWR			1.3:1	1.5:1
Amplitude Balance	dB		0.05	0.1
Phase Balance	°		1.0	3.0

1. All specifications apply with a 50-ohm source and load impedance.

2. This device operates at L2 GPS frequency (1228 MHz) with compatible performance as cited above, with the exception of isolation which is rated at 12 dB min.

Specifications Subject to Change Without Notice.

M/A-COM, Inc.

North America: Tel. (800) 366-2266
Fax (800) 618-8883

■ Asia/Pacific: Tel. +81 (03) 3226-1671
Fax +81 (03) 3226-1451

■ Europe: Tel. +44 (1344) 869 595
Fax +44 (1344) 300 020

Absolute Maximum Ratings¹

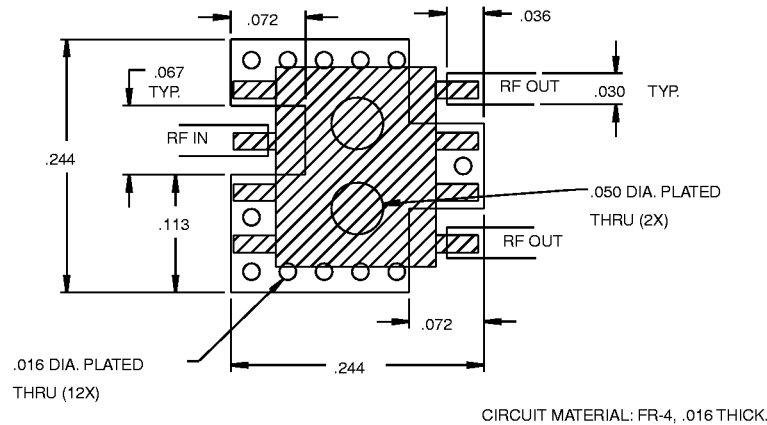
Parameter	Absolute Maximum
Input Power ²	1 W CW
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-65 °C to +150 °C

1. Exceeding these limits may cause permanent damage.

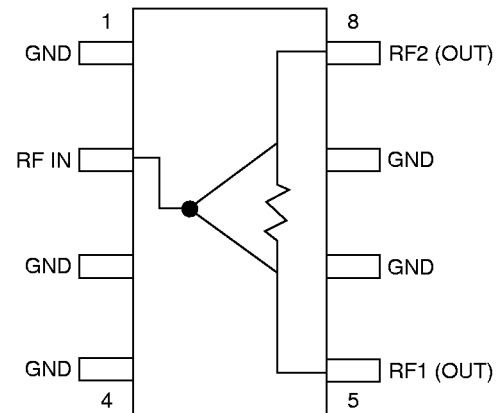
2. With internal load dissipation of 0.125 W maximum.

Recommended PCB Configuration

(Dimensions in Inches)



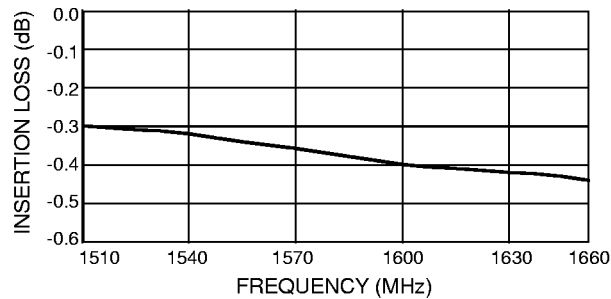
Functional Diagram³



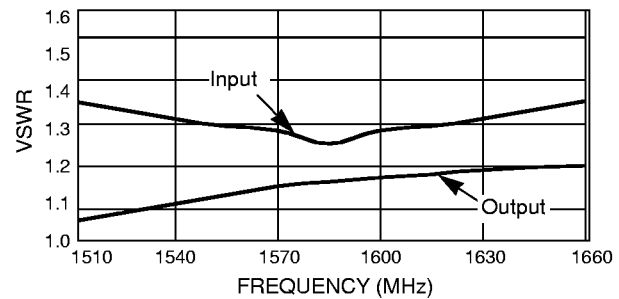
3. Pins 1, 3, 4, 6, and 7 must be RF and DC grounded.

Typical Performance @ +25 °C

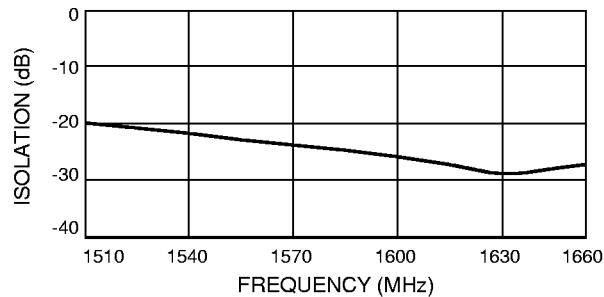
INSERTION LOSS vs FREQUENCY (ABOVE THEORETICAL SPLIT LOSS)



VSWR vs FREQUENCY



ISOLATION vs FREQUENCY



Specifications Subject to Change Without Notice.