Low Cost Four-Way SMT Power Splitter/Combiner 1200 - 1660 MHz

DS54-0003

V4.00

Features

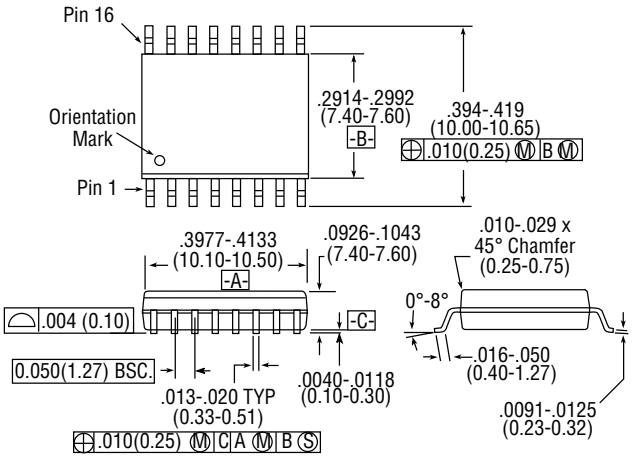
- Low Cost
- Small Size and Low Profile
- Industry Standard SOW-16 SMT Plastic Package
- Excellent Repeatability (Lot-to-Lot Variation)
- Typical Isolation: 23 dB
- Typical Amplitude Balance: 0.3 dB
- Typical Insertion Loss: 1.0 dB
- Commercial and Military GPS and LEO Frequency Coverage

Description

M/A-COM's DS54-0003 is an IC based monolithic power splitter/combiner in a low cost SOW-16 plastic package. This device is ideally suited for applications where PCB real estate is at a premium and standard packaging for automated assembly and low cost are critical. Typical applications include infrastructure, portables and peripheral devices (PCMCIA cards) for commercial and military GPS plus LEO applications. Available in tape and reel.

The DS54-0003 is fabricated using a passive-integrated circuit process. The process features full chip passivation for increased performance and reliability.

SOW-16



16-Lead SOP outline dimensions
Wide body (.300)
(All dimensions per JEDEC No. MS-013-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
DS54-0003	SOW-16 Lead Plastic Package
DS54-0003-TR	Forward Tape and Reel*
DS54-0003-RTR	Reverse Tape and Reel*

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

Electrical Specifications[1], T_A = +25°C

Parameter	Units	Min.	Typ.	Max.
Insertion Loss Above 6.0 dB	dB		1.0	1.2
Isolation 1200-1430 MHz 1430-1660 MHz	 dB dB	 13 18	 18 23	
VSWR Input Output			 1.2:1 1.4:1	 1.4:1 1.7:1
Amplitude Balance	dB		0.3	0.6
Phase Balance	°		2	5°

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

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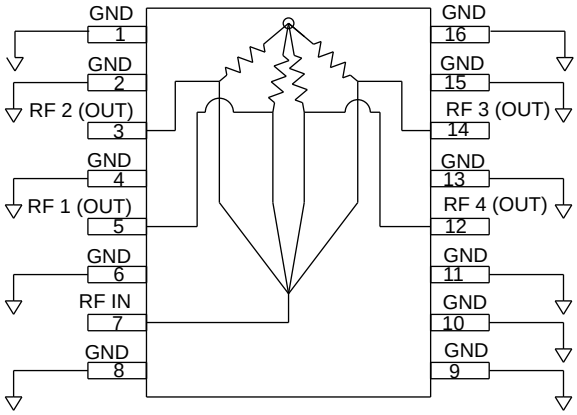
Absolute Maximum Ratings[1]

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

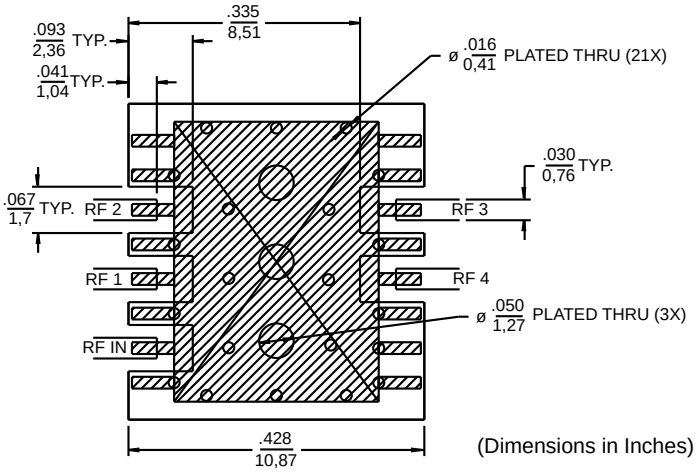
1. Exceeding these limits may cause permanent damage.
2. With internal load dissipation of 0.125 W maximum.

Functional Diagram[3]



3. Pins 1, 2, 4, 6, 7, 8, 9, 10, 11, 13, 15 and 16 must be DC and RF grounded.

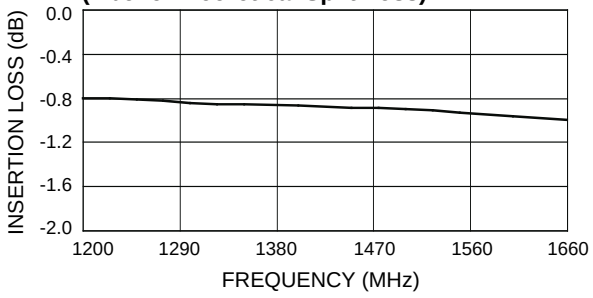
Recommended PCB Configuration



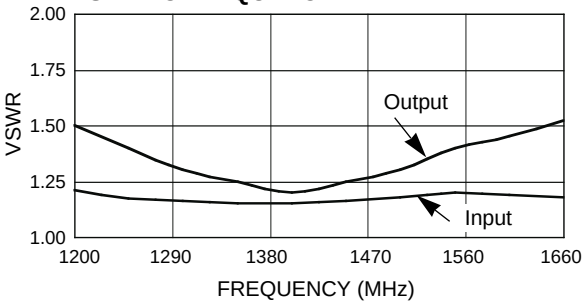
(Dimensions in Inches)

Typical Performance @ +25°C

INSERTION LOSS vs FREQUENCY (Above Theoretical Split Loss)



VSWR vs FREQUENCY



ISOLATION vs FREQUENCY