

CATV Amplifier Splitter Module
 50 - 860 MHz

Rev. V3

Features

- Low Noise Figure
- Low Distortion
- Multifunction Integration
- Single Positive Supply
- 75 ohm Impedance
- Surface Mount Package

Description

M/A-COM's MAMUSS0007 is an integrated module consisting of an amplifier and two equal split power dividers. The push-pull, low distortion, amplifier includes the baluns and DC bias circuitry. The device is ideally suited for use in the CATV market where low noise figure, low distortion and high linearity are required.

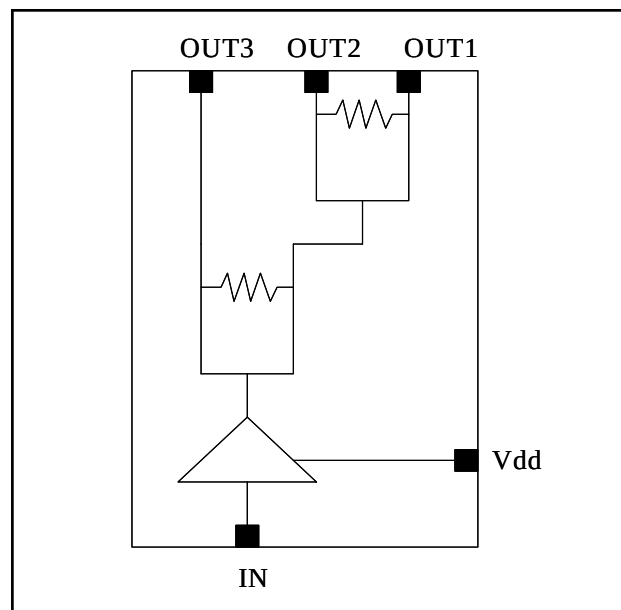
Ordering Information

Part Number	Package
MAMUSS0007	SMT Package
MAMUSS0007SMB	Sample Test Board (Includes 5 Samples)

Absolute Maximum Ratings^{1,2}

Parameter	Absolute Maximum
Input Power	+20 dBm
Operating Voltage	+10 volts
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. M/A-COM does not recommend sustained operation near these survivability limits.

Functional Schematic

Pin Configuration

Pin No.	Pin Name	Description
1	GND	Ground
2	GND	Ground
3	GND	Ground
4	GND	Ground
5	GND	Ground
6	GND	Ground
7	GND	Ground
8	GND	Ground
9	IN	RF Input
10	GND	Ground
11	V _{DD}	+5V
12	GND	Ground
13	OUT 1	RF Output 1
14	GND	Ground
15	OUT 2	RF Output 2
16	GND	Ground
17	OUT 3	RF Output 3
18	GND	Ground

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Electrical Specifications: $T_A = 25^\circ\text{C}$, Freq: 50 - 860 MHz, $V_{DD} = +5$ Volts, $Z_0 = 75 \Omega$

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Gain	IN-OUT1, IN-OUT2	dB	4	5	6.8
Gain	IN-OUT3	dB	7.6	8.5	9.8
Gain Unbalance	IN-OUT1 vs IN-OUT2	dB	—	0.6	—
Gain Flatness	IN-OUT1/2	dB	0	1.1	1.6
Gain Flatness	IN-OUT 3	dB	0	0.8	1
Noise Figure	IN-OUT1, IN-OUT2 50 – 150 MHz 150 – 860 MHz	dB	—	3.7	—
		dB	—	3.4	—
Noise Figure	IN-OUT 3 50 – 150 MHz 150 – 860 MHz	dB	—	3.4	—
		dB	—	3.0	—
Return Loss	IN	dB	—	15	—
Return Loss	OUT	dB	—	17	—
Isolation	OUT-OUT	dB	—	24	—
Composite Triple Beat, CTB	135 channels, +13 dBmV/channel at the input	dBc	—	-78	-70
Composite Second Order, CSO	135 channels, +13 dBmV/channel at the input	dBc	—	-78	-70
Cross modulation	135 channels, +13 dBmV/channel at the input	dBc	—	-66	—
I_{DD}	$V_{DD} = +5$ Volts	mA	—	200	225

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

Gallium Arsenide Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

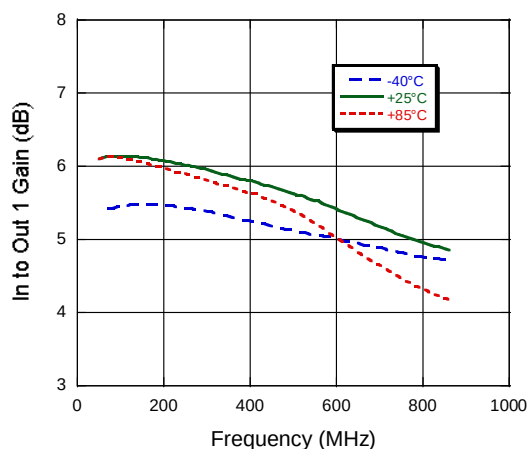
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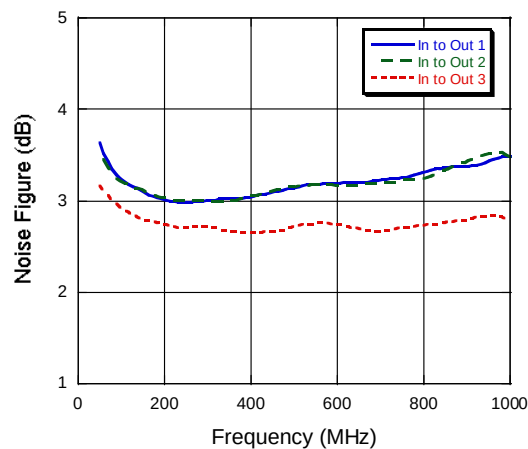
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Typical Performance Curves

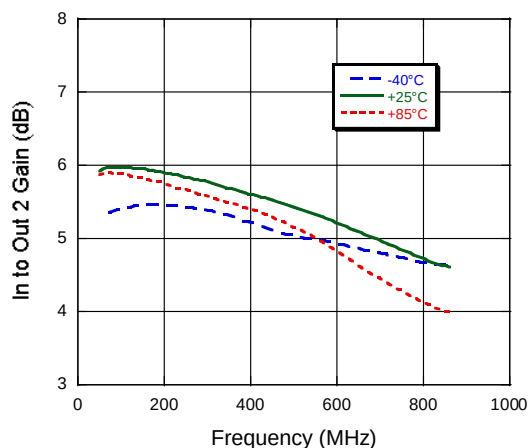
In – Out 1



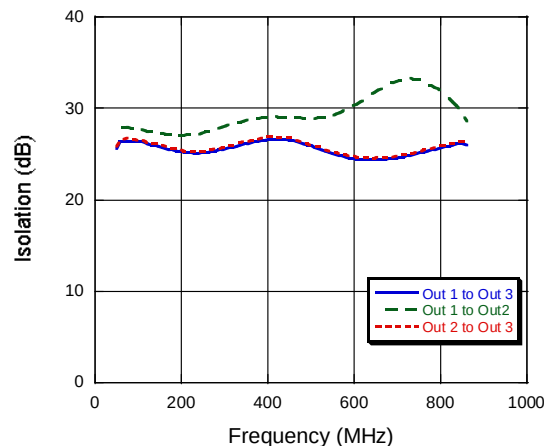
Noise Figure



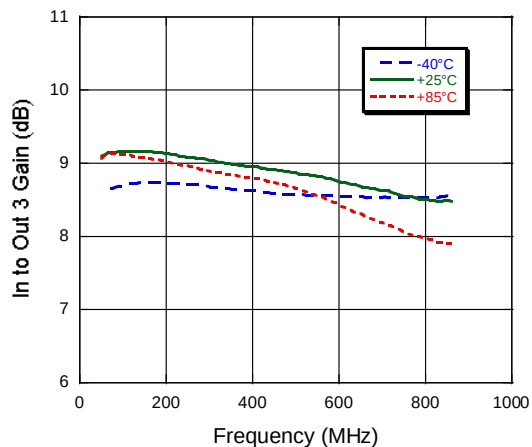
In – Out 2



Isolation



In – Out 3

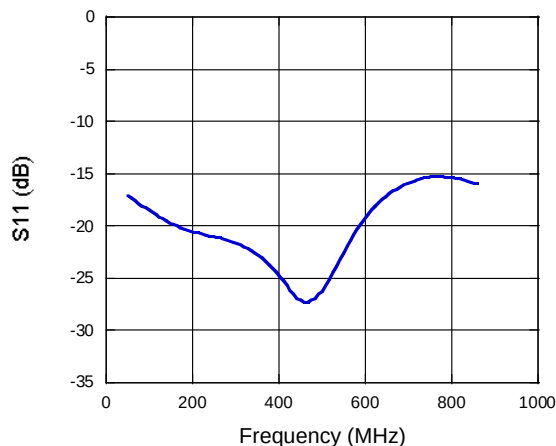


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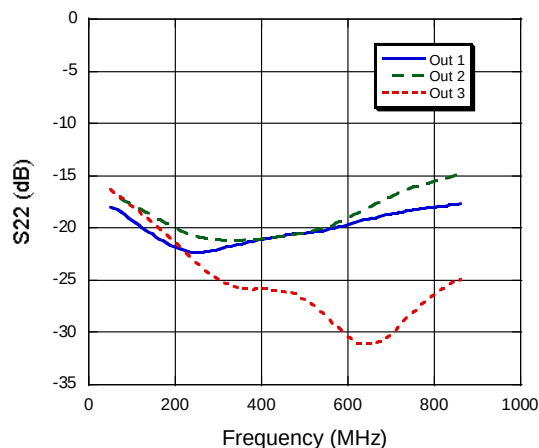
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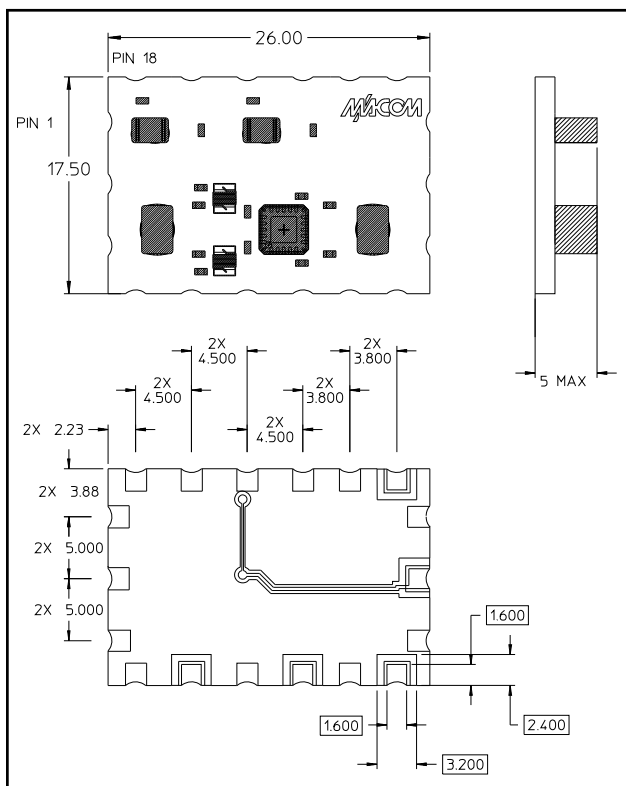
Input Return Loss



Output Return Loss



Surface Mount Package³



3. All dimensions in mm.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

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