CATV Amplifier Splitter Module 50 - 860 MHz

Features

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

Description

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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)

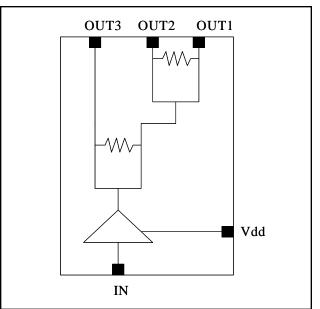
Absolute Maximum Ratings ^{1,2}

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.

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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Technology Solutions

Rev. V3



CATV Amplifier Splitter Module 50 - 860 MHz

Rev. V3

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

Parameter	Test Conditions	Units	Min.	Тур.	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 dB		3.7 3.4	
Noise Figure	IN-OUT 3 50 – 150 MHz 150 – 860 MHz	dB dB		3.4 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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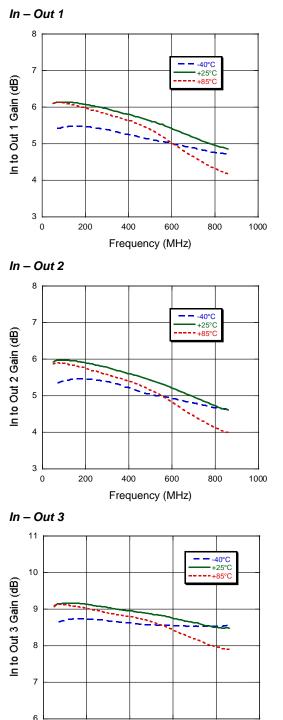
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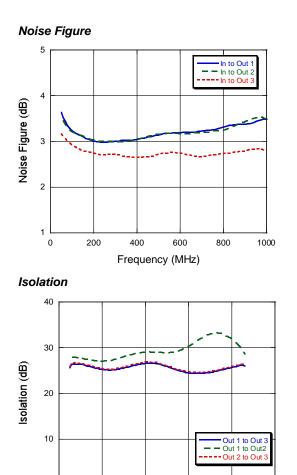
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Rev. V3

Typical Performance Curves







1000

800

0

0

200

3

200

0

400

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600

Frequency (MHz)

800

1000

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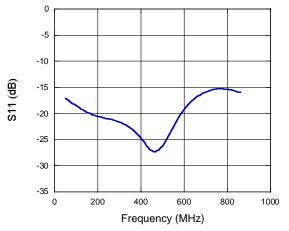
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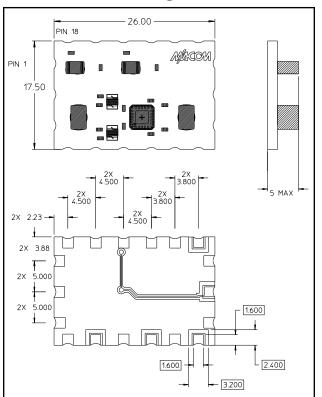
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Typical Performance Curves





Surface Mount Package³



3. All dimensions in mm.



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Out 2 -5 -- Out 3 -10 S22 (dB) -15 -20 -25 -30 -35 0 200 400 600 800 1000 Frequency (MHz)

Output Return Loss

0

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