

CATV Amplifier Splitter Module 50 - 860 MHz

RoHS Compliant Rev. V1

Features

- Low Noise Figure
- Low Distortion
- Multifunction Integration
- Single Positive Supply
- 75 ohm Impedance
- Lead-Free Surface Mount Package
- Electroless Nickel Imersion Gold (ENIG) Finish
- 260°C Reflow Compatible
- RoHS* Compliant Version of MAMUSS0007

Description

M/A-COM's MAMUCT0021 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. device is ideally suited for use in the CATV market where low noise figure, low distortion and high linearity are required.

Ordering Information

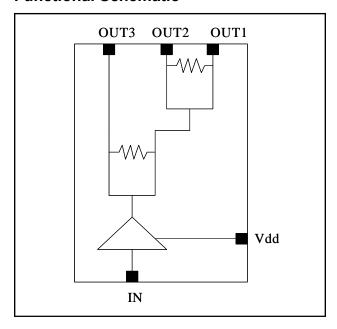
Part Number	Package			
MAMUCT0021TR	500 Piece Reel			
MAMUCT0021SMB	Sample Test Board (Includes 5 Samples)			

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		

^{*} Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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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.

[•] India Tel: +91.80.43537383 Visit www.macomtech.com for additional data sheets and product information.

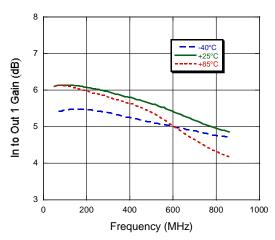


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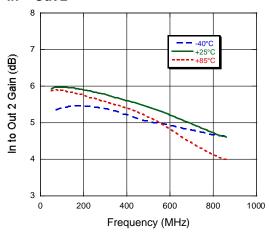
RoHS Compliant Rev. V1

Typical Performance Curves

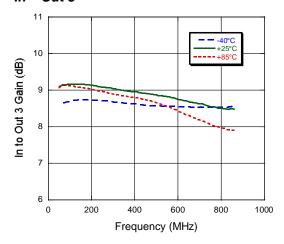




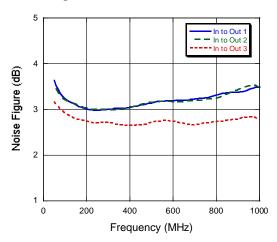
In - Out 2



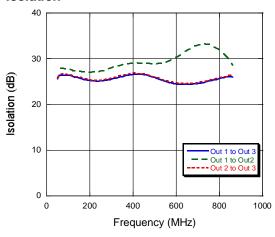
In - Out 3



Noise Figure



Isolation



PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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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.

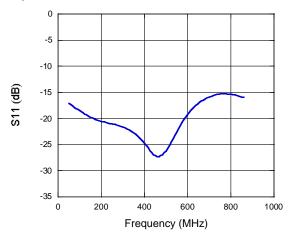


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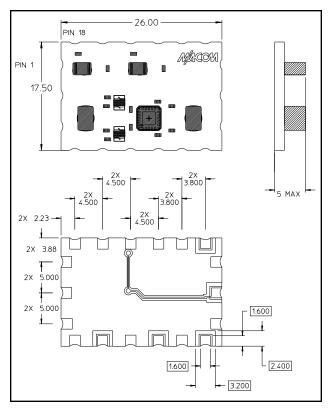
RoHS Compliant Rev. V1

Typical Performance Curves

Input Return Loss

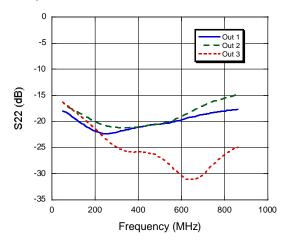


Lead-Free Surface Mount Package^{3,4}

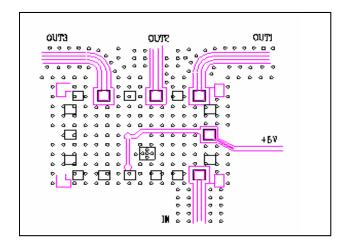


- 3. All dimensions in mm.
- 4. Reference Application Note M538 for lead-free solder reflow recommendations.

Output Return Loss



Recommended Board Layout



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