**MAAMSS001** 

# Broadband IF Driver Amplifier 50 - 450 MHz

#### V 1.00

Advanced

#### **Features**

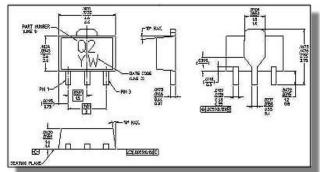
- Low Cost Plastic SOT-89 Package
- Broadband Operation
- Output Intercept Point of +40 dBm
- Output P1dB of +22 dBm
- High Efficiency
- 50 ohm Input /Output match
- Typical Gain of 18 dB

# **Description**

M/A-COM's MAAMSS0017 IF driver amplifier is a GaAs MMIC which exhibits high OIP3 as well as high gain and low power consumption in a low-cost miniature SOT89 surface mount plastic package. The MAAMSS0017 employs a monolithic single stage design featuring a convenient 50 ohm input/output impedance that minimizes the number of external components required. The device runs off a single +5 volt supply and draws 70 mA typically. The design provides excellent performance from 50 to 450 MHz.

The MAAMSS0017 is fabricated using M/A-COM's iHBT process to realize low current and high power functionality. The process features full passivation for increased performance and reliability.

## **SOT-89 Plastic Package**



Part Number	Package		
MAAMMSS0017TR	1000 Piece Tape and Reel <sup>1</sup>		
MAAMSS0017TR3000	3000 Piece Tape and Reel <sup>1</sup>		

1. Reference Application Note M513 for reel size information.

# Electrical Specifications<sup>1</sup>: $T_A = +25^{\circ}C$ , Vs = 5 V, Is = 70 mA

Parameter	Test Conditions	Units	Min	Тур	Max
Gain <sup>2</sup>	F = 50-450 MHz	dB		18	
Noise Figure <sup>3</sup>	F = 50-450 MHz	dB		4.4	
Input Return Loss	F = 50-450 MHz	dB		12	
Output Return Loss	F = 50-450 MHz	dB		15	
1dB Compression	F = 50-450 MHz	dBm		22	
Output IP3 4	F = 50-450 MHz	dBm		40	
Current	Vs = 5 V	mA		70	

1. All measurements taken in a 50 ohm system unless otherwise specified.

2. Gain varies at -0.008 dB/°C typical.

3. Noise figure varies at 0.007 dB/°C typical

4. OIP3 measured with Pout/Tone = +5 dBm, Tone spacing = 10 MHz

V 1.00

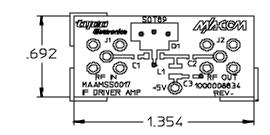
## **Pin Configuration**

Pin No.	Function	
1	RF In	
2	GND	
3	RF Out/Bias	
4	GND	

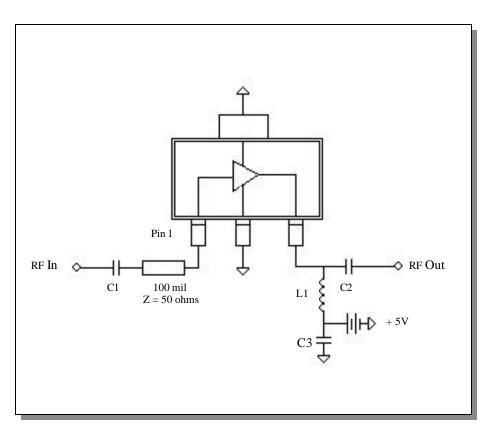
# **Off-Chip Component Values**

Part	Value	Package
C1	100 pF	0603
C2	150 pF	0603
C3	10000 pF	0603
L1	180 nH	1008

# **Board Lay-out**



### Schematic Including Off-Chip Components



Specifications subject to change without notice.

- North America: Tel. (800) 366-2266
- Asia/Pacific: Tel.+81-44-844-8296, Fax +81-44-844-8298
- Europe: Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

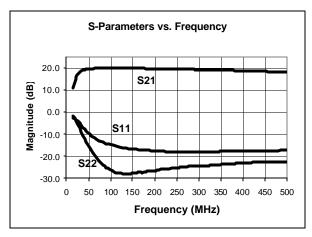
Visit www.macom.com for additional data sheets and product information.

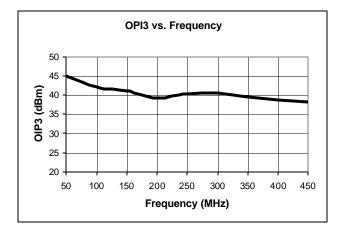


#### MAAMSS0017

#### **Typical Performance Curves**

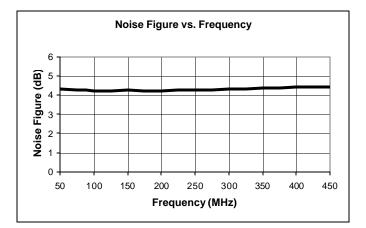
#### S Parameters, Vs = 5V, Is = 70 mA





**OIP3 vs. Frequency** 

#### Noise Figure vs. Frequency Vs = 5V, Is = 70 mA



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