

# Cascadable Amplifier 5 to 500 MHz

Rev. V2

#### **Features**

HIGH GAIN: 19 dB (TYP.)

MEDIUM OUTPUT POWER: +11 dBm (TYP.)

SMALL SIZE: TO-5

### **Description**

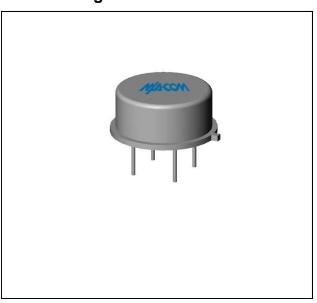
The EA53-2 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. The unit is packaged in a TO-5 hermetically sealed, and MIL-STD-883 environmental screening is available.



Part Number	Package
EA53-2	TO-5

### **Product Image**



# Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} = +15 V_{DC}$

Parameter	Units	Typical	Guaranteed	
			0º to 50ºC	-54º to +85ºC
Frequency	MHz	2-600	5-500	5-500
Small Signal Gain (min)	dB	19.0	18.5	17.5
Gain Flatness (max)	dB	±0.2	±0.5	±1.0
Noise Figure (max)	dB	3.6	4.0	4.5
Power Output @ 1 dB Compression (min)	dBm	+11.0	+10.0	+9.0
IP3	dBm	+24		
IP2	dBm	+30		
2nd Order Harmonic IP	dBm	+46		
VSWR Input / Output (max)		1.5:1	2.0:1	2.1:1
DC Current @ 15 Volts (max)	mA	33	37	40

### **Absolute Maximum Ratings**

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	+100°C	
DC Voltage	+17 V	
Continuous Input Power	13 dBm	
CW Input power (1 minute max.)	100 mW	
Peak Power (3 µsec max.)	0.5 W	
"S" Series Burn-In Temperature (case)	+125°C	

### Thermal Data: $V_{CC} = +15 V_{DC}$

Parameter	Rating	
Thermal Resistance $\theta_{jc}$	45°C/W	
Transistor Power Dissipation P <sub>d</sub>	0.187 W	
Junction Temperature Rise Above Case T <sub>jc</sub>	8°C	

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.

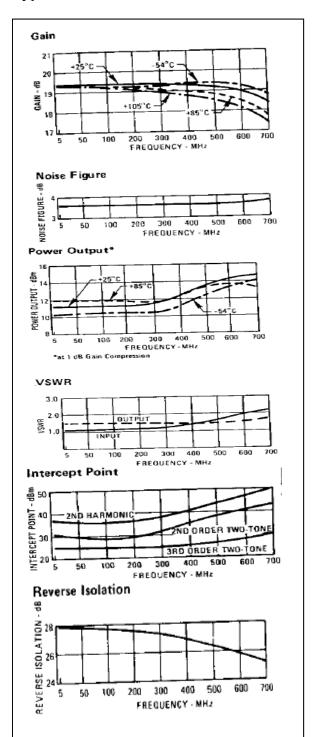
<sup>•</sup> North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400 • China Tel: +86.21.2407.1588



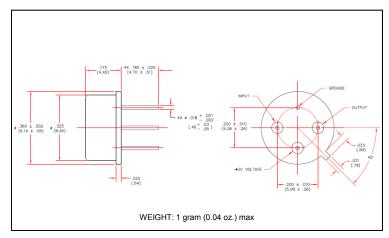
Cascadable Amplifier 5 to 500 MHz

Rev. V2

# Typical Performance Curves at +25°C



# Outline Drawing: TO-5 \*



\* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.

Commitment to produce in volume is not gua

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

• North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400

• China Tel: +86.21.2407.1588 • India Tel: +91.80.4155721 Visit www.macomtech.com for additional data sheets and product information.