

Cascadable Amplifier 10 to 500 MHz

Rev. V2

Features

- AVAILABLE IN SURFACE MOUNT
- LOW NOISE: 3.0 dB (TYP.)
- MEDIUM THIRD ORDER I.P.: +16 dBm (TYP.)
- MEDIUM GAIN 15 dB (TYP.)

Description

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The A53 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. Both TO-8 and Surface Mount packages are Hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

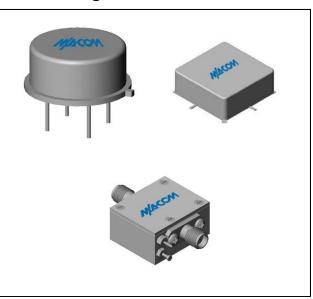
Part Number	Package		
A53	TO-8		
SMA53	Surface Mount		
MAAM-008722-00CA53	SMA Connectorized **		

^{**} The connectorized version is not RoHs compliant.

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

Parameter	Units	Typical	Guaranteed	
Parameter		25°C	0º to 50ºC	-54º to +85ºC*
Frequency	MHz	5-600	10-500	10-500
Small Signal Gain (min)	dB	15.0	14.0	13.5
Gain Flatness (max)	dB	±0.5	±0.8	±1.0
Reverse Isolation	dB	20		
Noise Figure (max)	dB	3.0	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	3.5	2.0	1.5
IP3	dBm	+16		
IP2	dBm	+22		
Second Order Harmonic IP	dBm	+28		
VSWR Input / Output (max)		1.5:1 / 1.5:1	2.0:1 / 2.0:1	2.1:1 / 2.1:1
DC Current @ 15 Volts (max)	mA	12	15	17

Product Image



Absolute Maximum Ratings

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	125°C	
DC Voltage	+17 V	
Continuous Input Power	+13 dBm	
Short Term Input power (1 minute max.)	50 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 θ_{jc}	45°C/W
Transistor Power Dissipation Pd	0.111 W
Junction Temperature Rise Above Case T _{jc}	5°C

^{*} Over temperature performance limits for part number CA53, guaranteed from 0°C to +50°C only.

Commitment to produce in volume is not guaranteed.

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.

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.

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

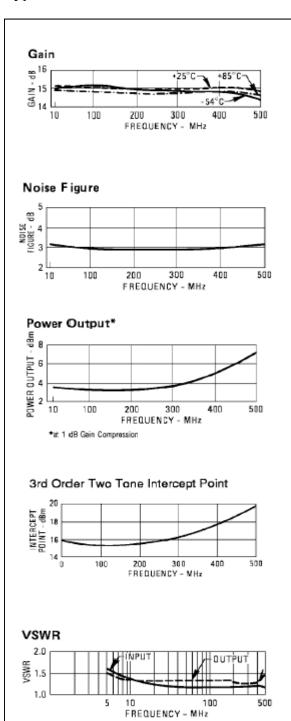
India Tel: +91.80.4155721
 China Tel: +86.21.2407.1588
 Visit www.macomtech.com for additional data sheets and product information.



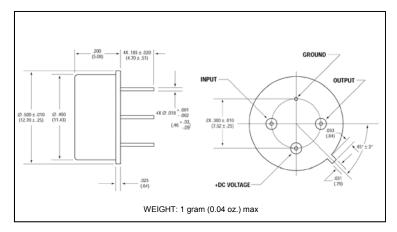
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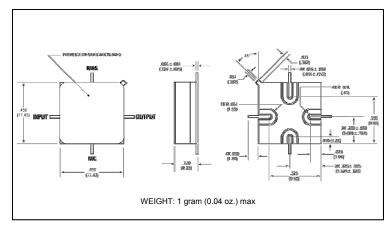
Typical Performance Curves at +25°C



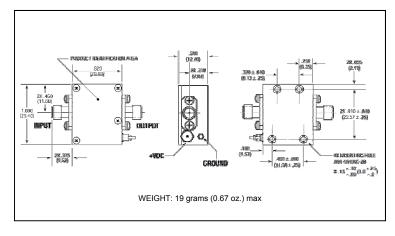
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount



Outline Drawing: SMA Connectorized *



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

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• India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588