

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

The A53 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

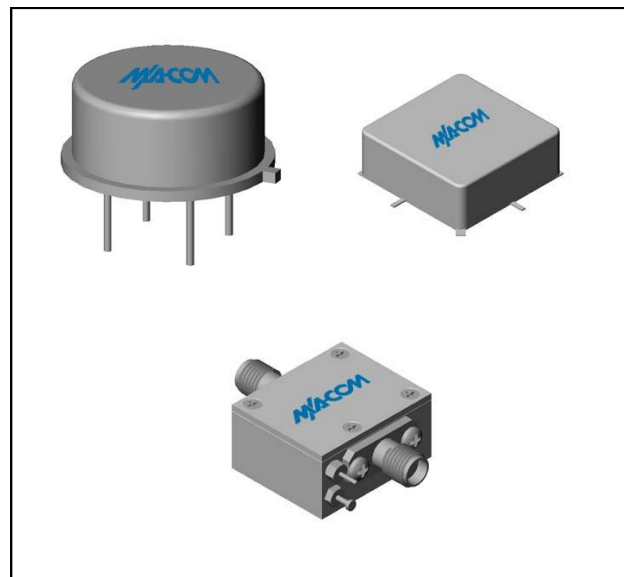
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are Hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

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

** The connectorized version is not RoHs compliant.

Product Image



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

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
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

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

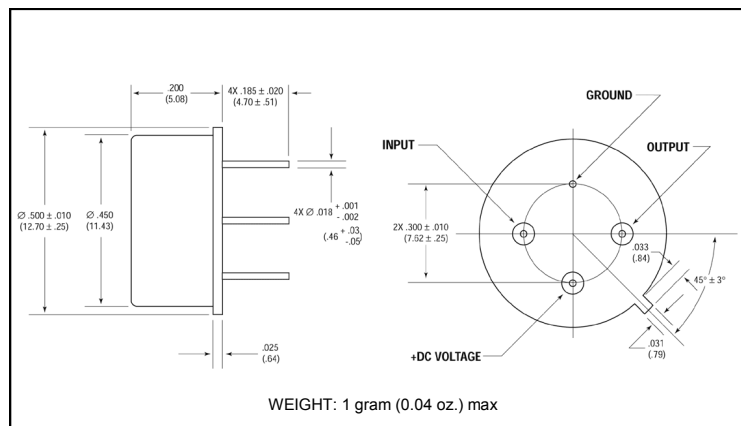
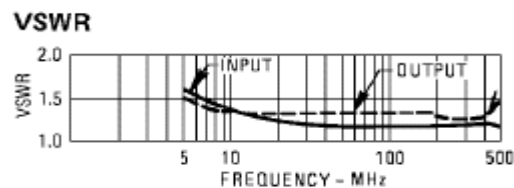
Thermal Data: $V_{CC} = +15 V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	45°C/W
Transistor Power Dissipation P_d	0.111 W
Junction Temperature Rise Above Case T_{jc}	5°C

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

Rev. V2

Outline Drawing: TO-8 *

[illegible]

The drawing shows three views of the 28-pin DIP package:

- Top View:** Shows the square body with pins on all four sides. Dimensions include a total width of 0.820 (20.83), a pin pitch of 0.050 (1.27), and a distance from the input/output pins to the center of 0.320 ± 0.010 (8.13 ± 0.25). The input and output pins are labeled "INPUT" and "OUTPUT" respectively. There are four mounting holes, each with a diameter of 0.086 ± 0.005 (2.19 ± 0.13).
- Side View:** Shows the package height of 0.180 (4.57) and the pin height of 0.010 (0.25). The pins are labeled "2X .310 (7.87)" and "2X .460 (11.68)".
- Bottom View:** Shows the underside of the package with the "PRODUCT IDENTIFICATION AREA" and the "GROUND" pin. The distance from the input/output pins to the center is 0.320 ± 0.010 (8.13 ± 0.25). The pin pitch is 0.050 (1.27). The pins are labeled "2X .310 (7.87)" and "2X .460 (11.68)".

WEIGHT: 19 grams (0.67 oz.) max

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