

**Cascadable Amplifier  
10 to 2000 MHz**

**A33/ SMA33**

V2

**Features**

- AVAILABLE IN SURFACE MOUNT
- LOW NOISE FIGURE: 4.5 dB (TYP.)
- +3 dBm OUTPUT LEVEL (TYP.)
- WIDE POWER SUPPLY RANGE +8 TO +15 VOLTS

**Description**

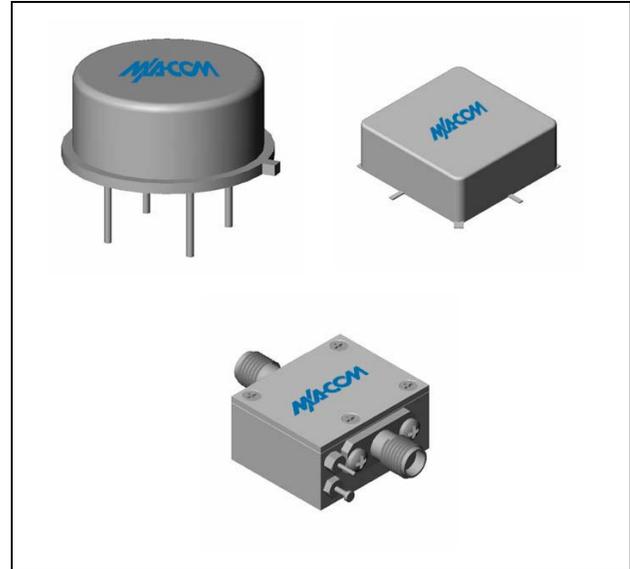
The A33 RF amplifier is a discrete thin film hybrid design, which incorporates the use of thin film manufacturing processes for accurate performance and high reliability. This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network is used for temperature-stable performance, in addition to an RF Choke, used for power supply decoupling. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

**Ordering Information**

Part Number	Package
A33	TO-8
MAAM-008718-0SMA33	Surface Mount
MAAM-008718-00CA33	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	1-2050	10-2000	10-2000
Small Signal Gain (min)	dB	9.5	8.5	8.0
Gain Flatness (max)	dB	±0.5	±0.8	±1.0
Reverse Isolation	dB	15		
Noise Figure (max)	dB	4.5	5.5	6.0
Power Output @ 1 dB comp. (min)	dBm	3.0	2.5	2.0
IP3	dBm	+15		
IP2	dBm	+22		
Second Order Harmonic IP	dBm	+28		
VSWR Input / Output (max)		1.7:1 / 1.7:1	2.0:1 / 2.0:1	2.2:1 / 2.2:1
DC Current @ 15 Volts (max)	mA	14	16	17

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+20 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 µsec max.)	1.5 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 $P_d$	0.165 W
Junction Temperature Rise Above Case $T_{jc}$	+7°C

\* Over temperature performance limits for part number CA33, guaranteed from 0°C to +50°C only.

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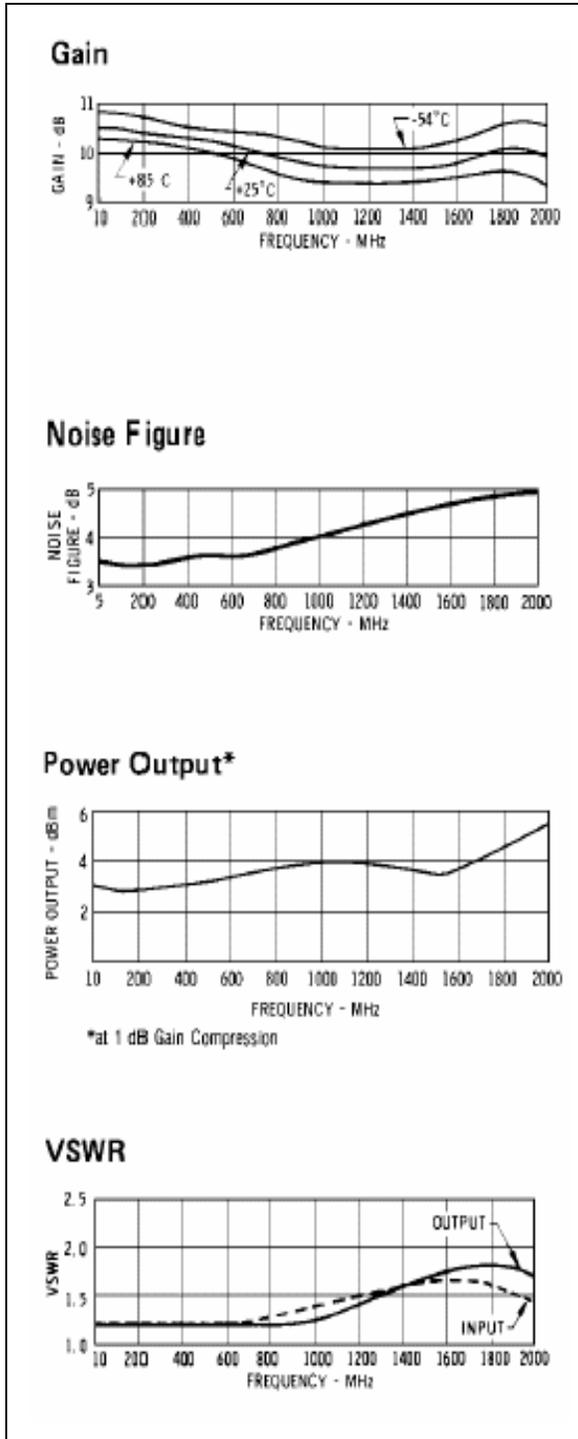
Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

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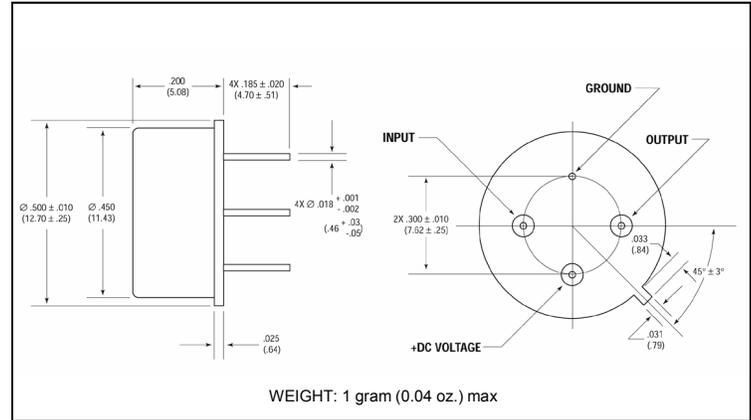
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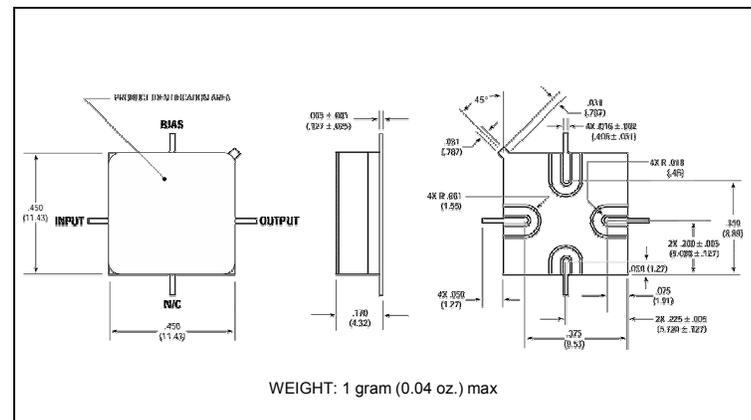
**Typical Performance Curves at +25°C**



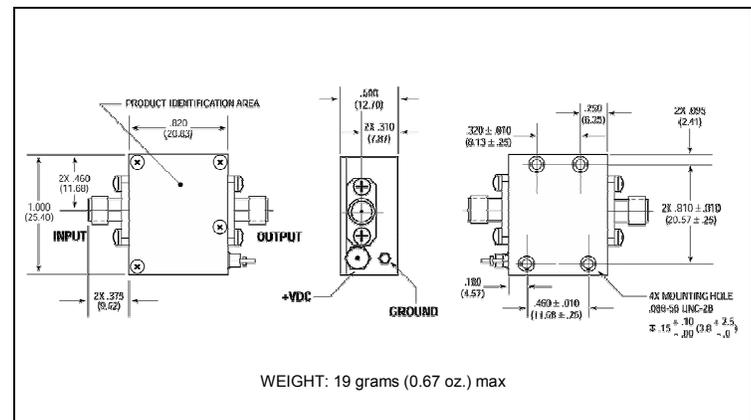
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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