

# A75 / SMA75

## Cascadable Amplifier 5 to 500 MHz

Rev. V3

### Features

- HIGH GAIN: 21.0 dB (TYP.)
- LOW NOISE: 2.1 dB (TYP.)
- MEDIUM OUTPUT LEVEL: +9 dBm (TYP.)
- WIDE POWER SUPPLY RANGE: +5 TO +20 VOLTS

### Description

The A75 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

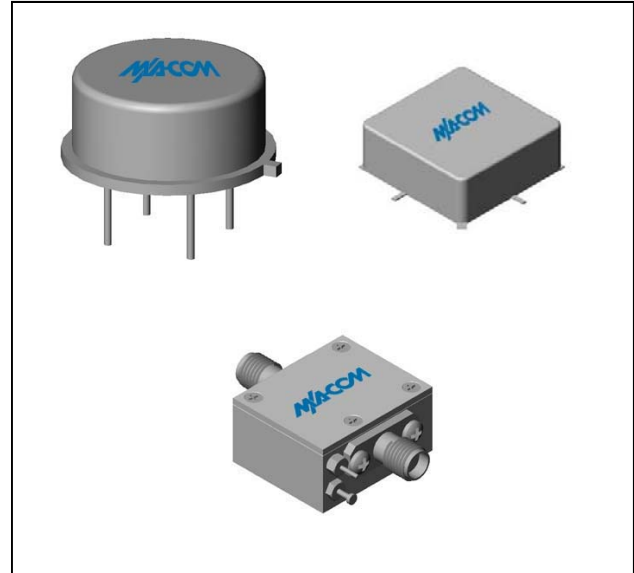
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### Ordering Information

Part Number	Package
A75	TO-8
SMA75	Surface Mount
CA75**	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	1-600	5-500	5-500
Small Signal Gain (min)	dB	21.0	19.5	19.0
Gain Flatness (max)	dB	±0.2	±0.5	±0.7
Reverse Isolation	dB	25		
Noise Figure (max)	dB	2.1	2.7	3.0
Power Output @ 1 dB comp. (min)	dBm	9.0	8.0	7.0
IP3	dBm	+21		
IP2	dBm	+26		
Second Order Harmonic IP	dBm	+32		
VSWR Input / Output (max)		1.5:1 / 1.5:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	24	27	29

### Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+21 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 $\theta_{jc}$	170°C/W
Transistor Power Dissipation $P_d$	0.194 W
Junction Temperature Rise Above Case $T_{jc}$	33°C

\* Over temperature performance limits for part number CA75, guaranteed from 0°C to +50°C only.

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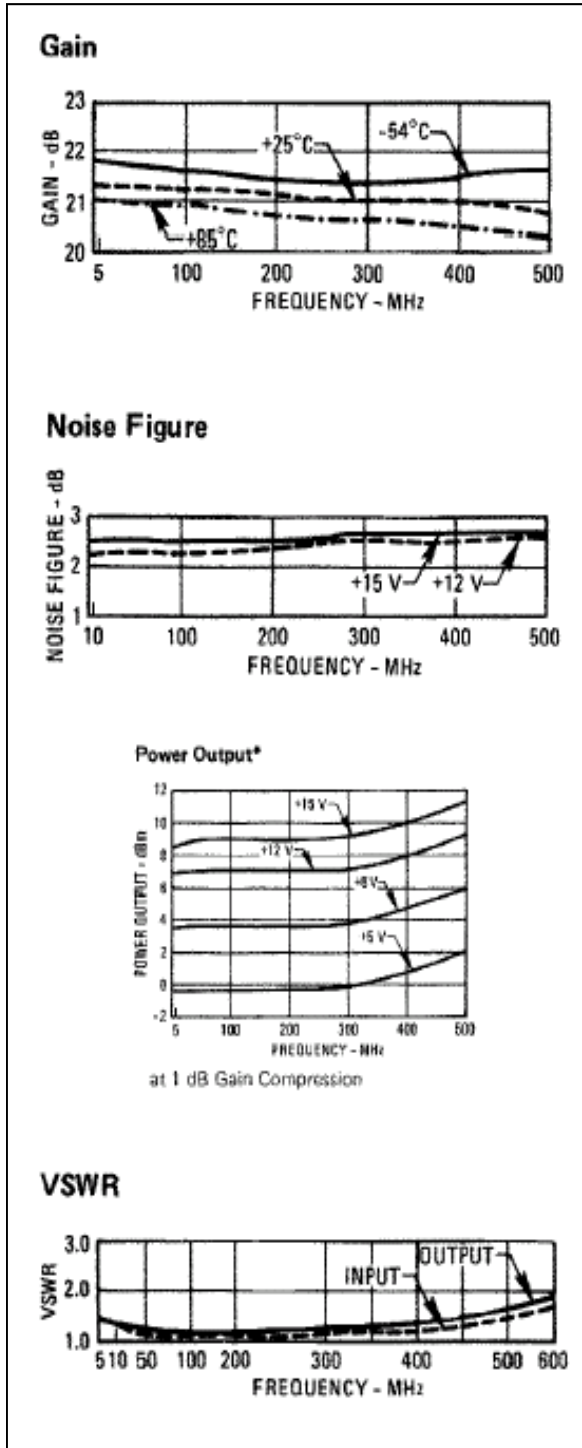
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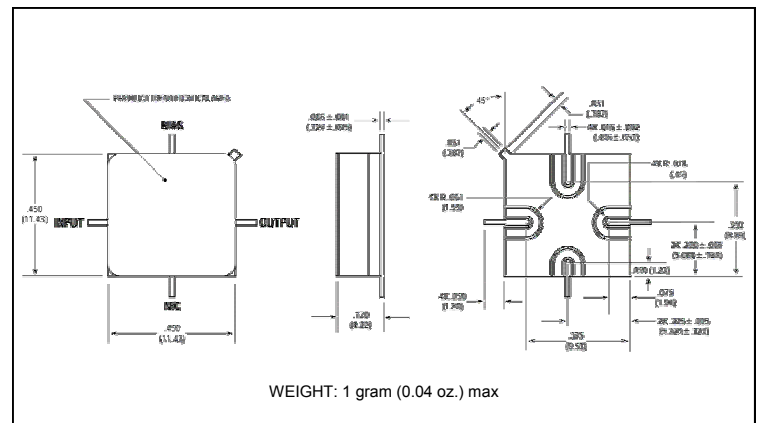
## Typical Performance Curves at +25°C



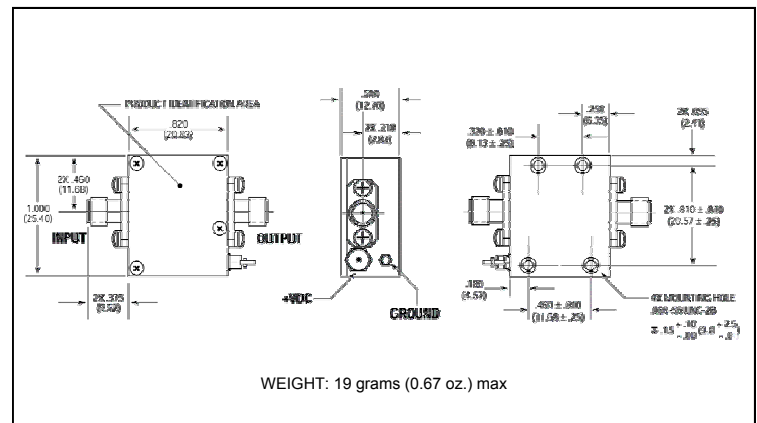
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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

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