

**Cascadable Amplifier  
1000 to 4000 MHz**

**A45/ SMA45**

V3

**Features**

- HIGH GAIN 17.5 dB (TYP.)
- LOW NOISE: 4.5 dB (TYP.)
- HIGH OUTPUT POWER: +19.5 dBm (TYP.)
- GaAs FET DESIGN

**Description**

The A45 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

This single stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. An RF choke is used for DC power supply decoupling.

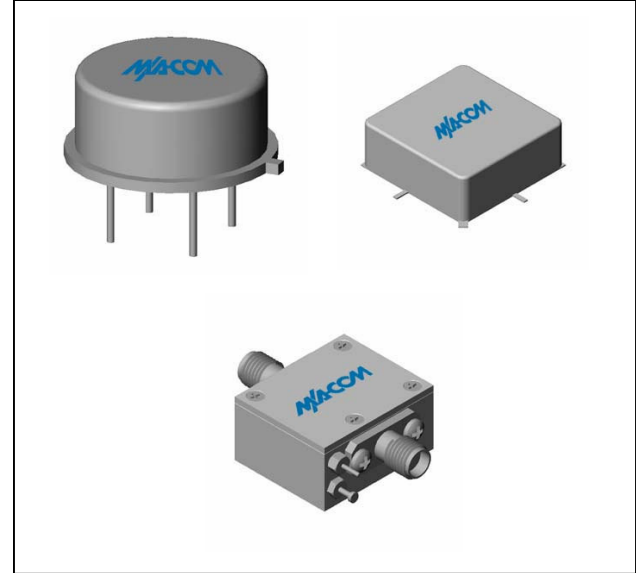
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

**Ordering Information**

| Part Number | Package           |
|-------------|-------------------|
| A45         | TO-8              |
| SMA45       | Surface Mount     |
| CA45 **     | 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   | 1000-4000     | 1000-4000     | 1000-4000      |
| Small Signal Gain (min)         | dB    | 17.5          | 16.5          | 15.5           |
| Gain Flatness (max)             | dB    | ±0.6          | ±0.8          | ±1.0           |
| Reverse Isolation               | dB    | 36            |               |                |
| Noise Figure (max)              | dB    | 4.0           | 5.0           | 5.5            |
| Power Output @ 1 dB comp. (min) | dBm   | 19.5          | 18.0          | 17.0           |
| IP3                             | dBm   | +29           |               |                |
| IP2                             | dBm   | +39           |               |                |
| Second Order Harmonic IP        | dBm   | +44           |               |                |
| VSWR Input / Output (max)       |       | 1.8:1 / 1.7:1 | 2.1:1 / 2.1:1 | 2.2:1 / 2.2:1  |
| DC Current @ 15 Volts (max)     | mA    | 120           | 125           | 130            |

**Absolute Maximum Ratings**

| Parameter                              | Absolute Maximum |
|--|------------------|
| Storage Temperature                    | -62°C to +125°C  |
| Case Temperature                       | 85°C             |
| DC Voltage                             | +16 V            |
| Continuous Input Power                 | +13 dBm          |
| Short Term Input power (1 minute max.) | 100 mW           |
| Peak Power (3 µsec max.)               | 0.25 W           |
| "S" Series Burn-In Temperature (case)  | 85°C             |

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

| Parameter                                     | Rating  |
|---|---------|
| Thermal Resistance $\theta_{jc}$              | 131°C/W |
| Transistor Power Dissipation $P_d$            | 0.497 W |
| Junction Temperature Rise Above Case $T_{jc}$ | 65°C    |

\* Over temperature performance limits for part number CA45, guaranteed from 0°C to +50°C only.

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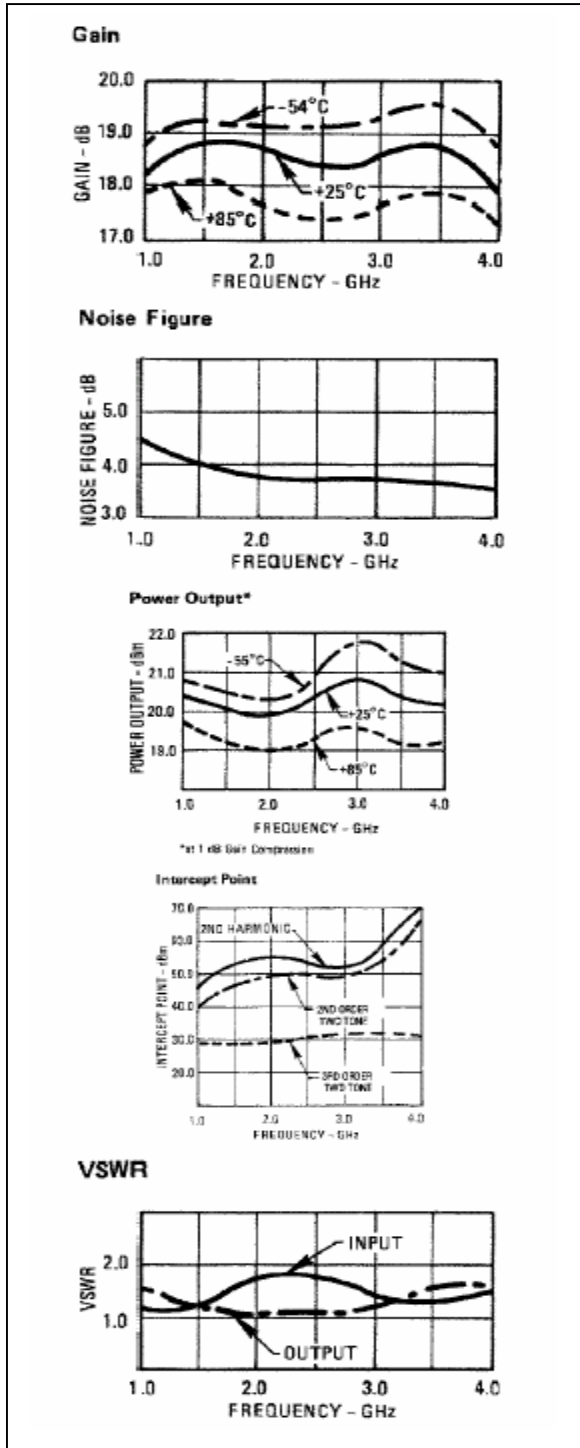
Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

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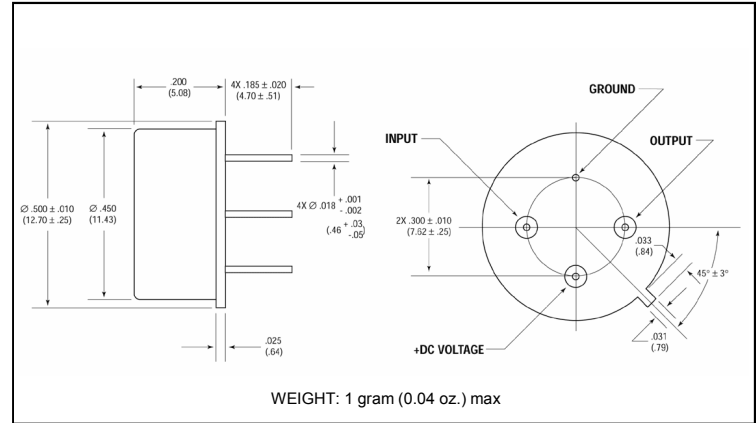
**A45/ SMA45**

V3

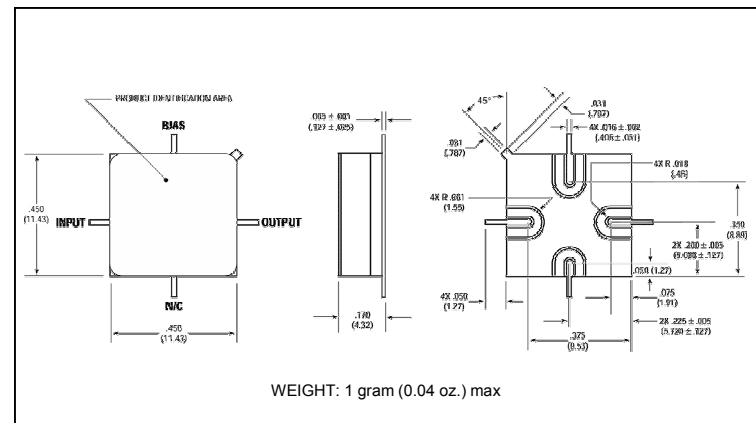
**Typical Performance Curves at +25°C**



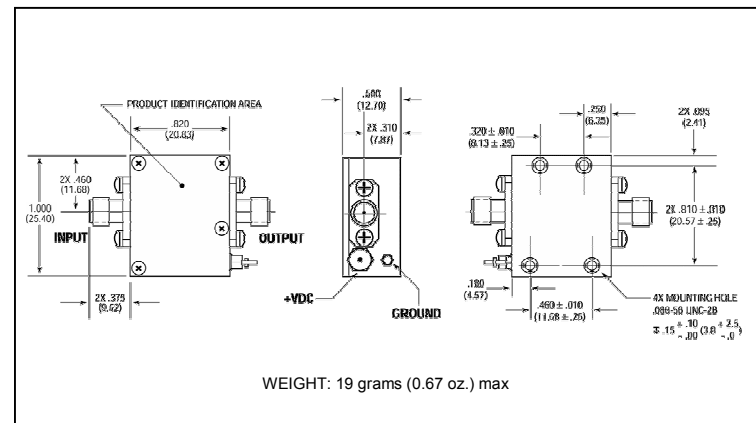
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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