

## Cascadable Amplifier 2 to 6 GHz

Rev. V3

### Features

- WIDE BANDWIDTH: 2-6 GHz
- MEDIUM OUTPUT LEVEL: +12.5 dBm (TYP.)
- LOW NOISE: 3.2 dB (TYP.)

### Description

The A61 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           |
|-------------|-------------------|
| A61         | TO-8              |
| SMA61       | Surface Mount     |
| CA61 **     | SMA Connectorized |

\*\* The connectorized version is not RoHs compliant.

### Product Image



### Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} = +5 V_{DC}$

| Parameter                       | Units | Typical       | Guaranteed    |                |
|---------------------------------|-------|---------------|---------------|----------------|
|                                 |       | 25°C          | 0° to 50°C    | -54° to +85°C* |
| Frequency                       | GHz   | 1.8-6.2       | 2.0-6.0       | 2.0-6.0        |
| Small Signal Gain (min)         | dB    | 7.5           | 6.5           | 6.0            |
| Gain Flatness (max)             | dB    | ±0.4          | ±0.7          | ±0.9           |
| Reverse Isolation               | dB    | 14            |               |                |
| Noise Figure (max)              | dB    | 3.2           | 4.3           | 4.8            |
| Power Output @ 1 dB comp. (min) | dBm   | 12.5          | 11.0          | 10.5           |
| IP3                             | dBm   | +25           |               |                |
| IP2                             | dBm   | +37           |               |                |
| Second Order Harmonic IP        | dBm   | +42           |               |                |
| VSWR Input / Output (max)       |       | 1.5:1 / 1.5:1 | 2.0:1 / 2.0:1 | 2.1:1 / 2.1:1  |
| DC Current @ 5 Volts (max)      | mA    | 35            | 40            | 42             |

### Absolute Maximum Ratings

| Parameter                              | Absolute Maximum |
|--|------------------|
| Storage Temperature                    | -62°C to +125°C  |
| Case Temperature                       | +125°C           |
| DC Voltage                             | +6 V             |
| Continuous Input Power                 | 13 dBm           |
| Short Term Input power (1 minute max.) | 50 mW            |
| Peak Power (3 µsec max.)               | 0.25 W           |
| "S" Series Burn-In Temperature (case)  | +125°C           |

### Thermal Data: $V_{CC} = +5 V_{DC}$

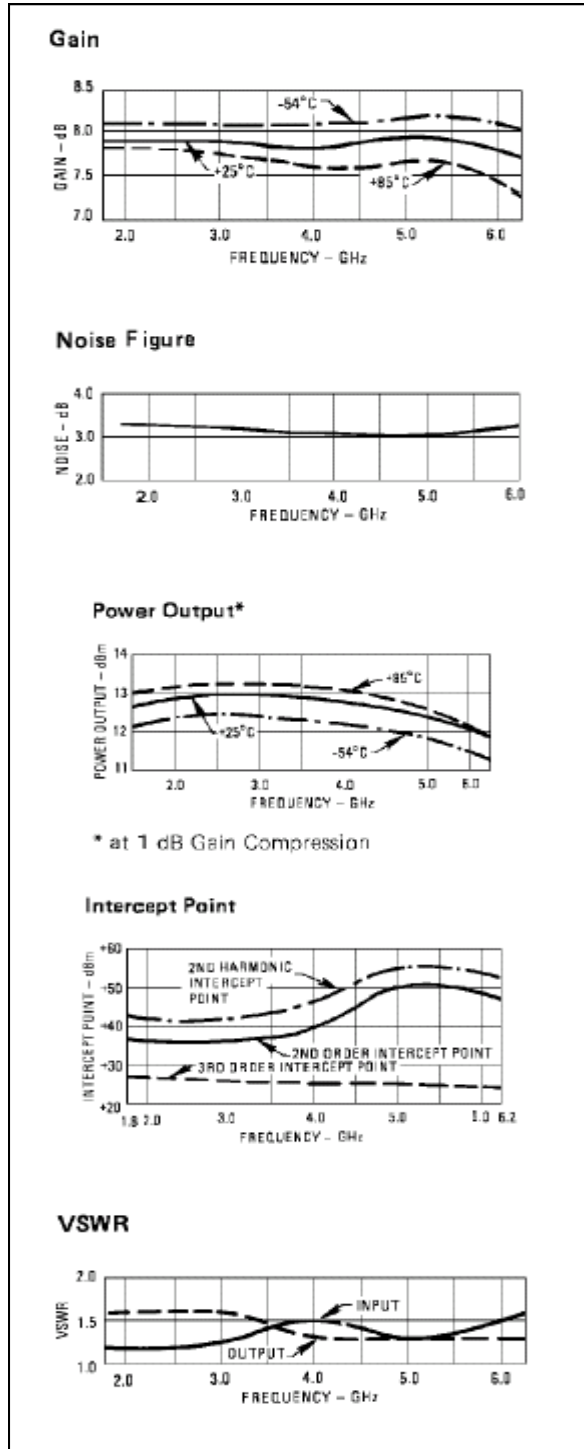
| Parameter                                     | Rating  |
|---|---------|
| Thermal Resistance $\theta_{jc}$              | 132°C/W |
| Transistor Power Dissipation $P_d$            | 0.171 W |
| Junction Temperature Rise Above Case $T_{jc}$ | 23°C    |

1 \* Over temperature performance limits for part number CA61, guaranteed from 0°C to +50°C only.

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### Typical Performance Curves at +25°C



### Outline Drawing: TO-8 \*



### Outline Drawing: Surface Mount \*



### Outline Drawing: SMA Connectorized \*

