

## Cascadable Amplifier 5 to 600 MHz

**A77-1 / SMA77-1**

V3

### Features

- High Level Output: +16.5 dBm (TYP.)
- High Third Order I.P.: +30 dBm (TYP.)
- Extended Bandwidth: 5-600 MHz
- Wide Power Supply Range: +8 to +15 Volts

### Description

The A77-1 RF amplifier is a discrete hybrid design, which incorporates the use of thin film manufacturing processes for accurate performance and high reliability.

The single stage silicon 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           |
|-------------|-------------------|
| A77-1       | TO-8              |
| SMA77-1     | Surface Mount     |
| CA77-1**    | SMA Connectorized |

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

### 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   | 2-700         | 5-600         | 5-600         |
| Small Signal Gain (min)            | dB    | 16.0          | 15.0          | 14.5          |
| Gain Flatness (max)                | dB    | ±0.3          | ±0.7          | ±1.0          |
| Reverse Isolation                  | dB    | 17            |               |               |
| Noise Figure (max)                 | dB    | 5.0           | 6.5           | 7.0           |
| Power Output<br>@ 1 dB comp. (min) | dBm   | 16.5          | 15.0          | 14.5          |
| IP3                                | dBm   | +30           |               |               |
| IP2                                | dBm   | +43           |               |               |
| Second Order Harmonic IP           | dBm   | +49           |               |               |
| VSWR Input / Output (max)          |       | 1.5:1 / 1.5:1 | 1.8:1 / 1.8:1 | 2.0:1 / 2.0:1 |
| DC Current (max)                   | mA    | 50            | 53            | 56            |

### Product Image



### 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<br>(1 minute max.) | 100 mW           |
| Peak Power (3 μsec max.)                  | 0.5 W            |
| "S" Series Burn-In<br>Temperature (case)  | 125°C            |

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

| Parameter                                        | Rating  |
|--------------------------------------------------|---------|
| Thermal Resistance $\theta_{jc}$                 | 130°C/W |
| Transistor Power Dissipation $P_d$               | 0.464 W |
| Junction Temperature Rise<br>Above Case $T_{jc}$ | 60°C    |

Over temperature performance limits for part number CA77-1, guaranteed from 0°C to +50°C only.

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