

Cascadable Amplifier 100 to 2000 MHz

Rev. V4

Features

- HIGH GAIN—TWO STAGES: 16 dB (TYP.)
- ULTRALOW PHASE DEVIATION FROM LINEARITY: $<\pm 3^\circ$; 500-200 MHz
- LOW VSWR: $<1.5:1$ (TYP.)
- MEDIUM LEVEL OUTPUT: +7 dBm (TYP.)

Description

The A34 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for consistent performance and high reliability.

This 2 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures temperature-stable performance.

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

Ordering Information

| Part Number | Package |
|-------------|-------------------|
| A34 | TO-8 |
| SMA34 | Surface Mount |
| CA34 ** | 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 | 30-2100 | 100-2000 | 100-2000 |
| Small Signal Gain (min) | dB | 16.0 | 15.0 | 14. |
| Gain Flatness (max) | dB | ± 0.5 | ± 0.7 | ± 1.0 |
| Reverse Isolation | dB | 30 | | |
| Noise Figure (max) | dB | 5.5 | 6.5 | 7.0 |
| Power Output @ 1 dB comp. (min) | dBm | 7.0 | 6.0 | 5.0 |
| IP3 | dBm | +18 | | |
| IP2 | dBm | +42 | | |
| Second Order Harmonic IP | dBm | +46 | | |
| VSWR Input / Output (max) | | 1.5:1 / 1.5:1 | 1.9:1 / 1.9:1 | 2.0:1 / 2.0:1 |
| DC Current @ 15 Volts (max) | mA | 35 | 39 | 41 |

Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|--|------------------|
| Storage Temperature | -62°C to +125°C |
| Case Temperature | +125°C |
| DC Voltage | +20 V |
| Continuous Input Power | +10 dBm |
| Short Term Input power (1 minute max.) | 50 mW |
| Peak Power (3 μ sec max.) | 0.5 W |
| "S" Series Burn-In Temperature (case) | +125°C |

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

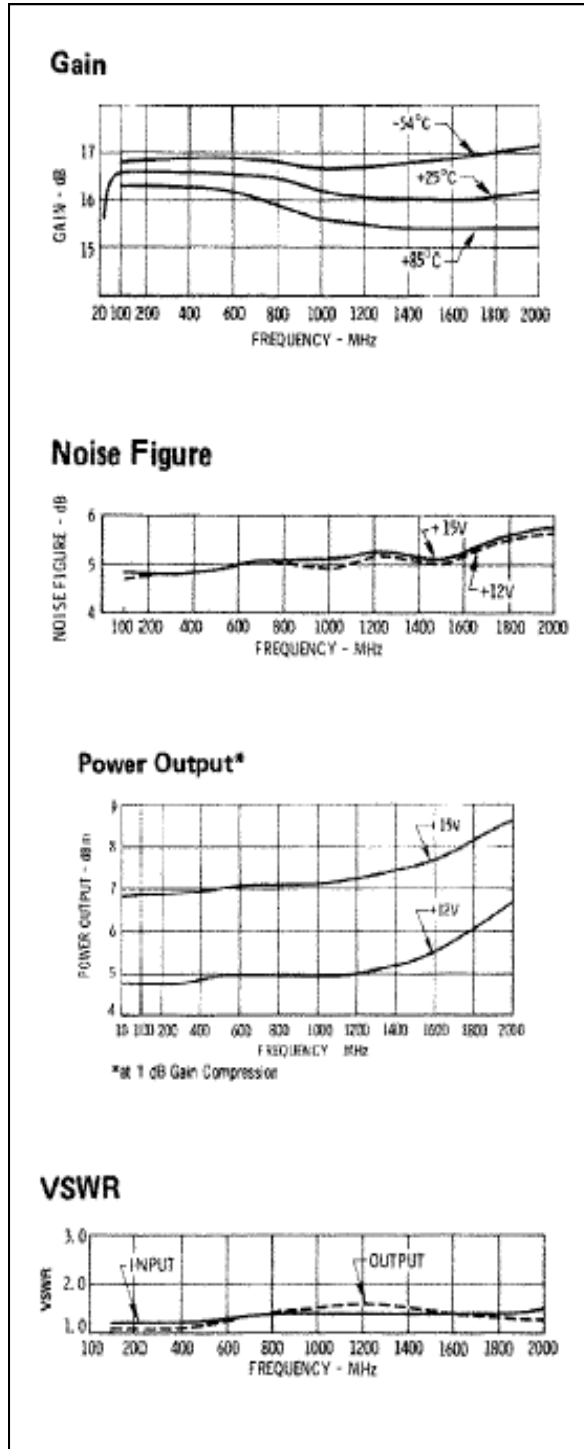
| Parameter | Rating |
|---|---------|
| Thermal Resistance θ_{jc} | 160°C/W |
| Transistor Power Dissipation P_d | 0.178 W |
| Junction Temperature Rise Above Case T_{jc} | 28°C |

1 * Over temperature performance limits for part number CA34, 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 *

