

SAC1442



GaN MMIC Power Amplifier Module 8.5~11.5GHz 45dBm

Rev 1.0

Features

- Frequency: 8.5~11.5GHz
- Small signal gain: 50dB
- Output Power:45dBm CW, Pin=6dBm
- Supply Voltage: +28V/+5V
-

Typical Applications

- Microwave radio
- Telecommunication
- Test instrumentation

General Description

SAC1442 is a power amplifier module with a typical small signal gain of 50dB and a nominal output power of +45dBm across the frequency range of 8.5 to 11.5GHz.

Electrical Performance ($T_A=25^{\circ}\text{C}$, +28V, $I_{DQ}=2.4\text{A}$ $Z_o=50\Omega$)

| Parameter | Min. | Typ. | Max. | Units |
|------------------------|----------|------|------|-------|
| Frequency Range | 8.5~11.5 | | | GHz |
| Small Signal Gain | 43 | 50 | 57 | dB |
| Noise Figure | — | 5 | — | dB |
| Output Power | 44 | 45 | — | dBm |
| Input VSWR | — | 2 | 3 | :1 |
| Reverse Isolation | — | -70 | — | dB |
| Supply Voltage | 27 | 28 | 30 | V |
| Supply Current | — | — | 8.5 | A |
| Max Input Power | — | — | 13 | dBm |
| Non-Harmonics Spurious | — | 62 | — | dBc |
| Harmonics* | — | 35 | — | dBc |
| | | | | |

*At Pout=44dBm

**Load Standing Wave Ratios in excess of 2:1 may cause device damage

SuperApex, LLC

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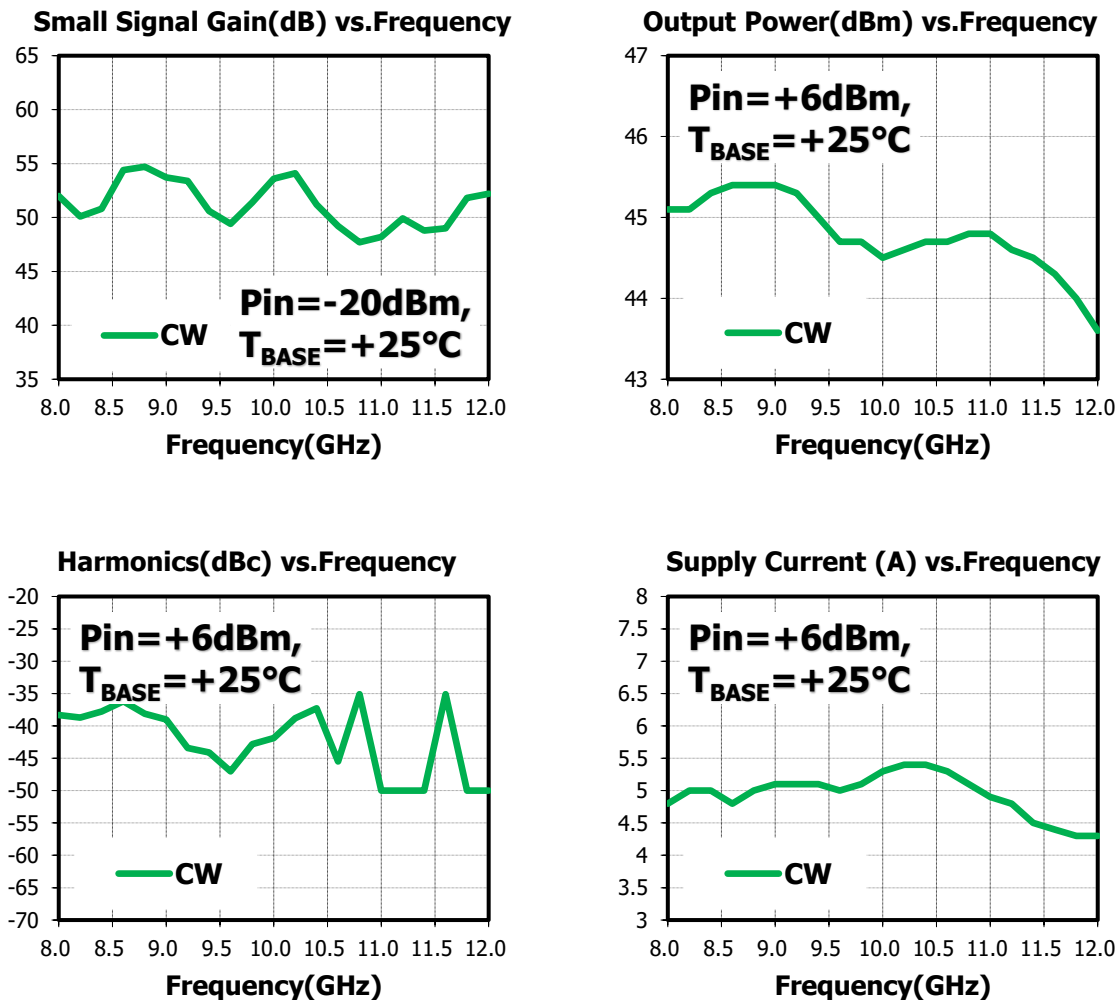
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Typical Performance Curve



Mechanical Specifications

| Parameter | |
|---------------|----------------------------------------|
| Input/Output | SMA-F |
| Bias | 9 pin Micro-D sub-min connector |
| Case Material | Aluminum alloy/Copper |
| Weight | 2845g |
| Cooling | External Heatsink, forced air required |

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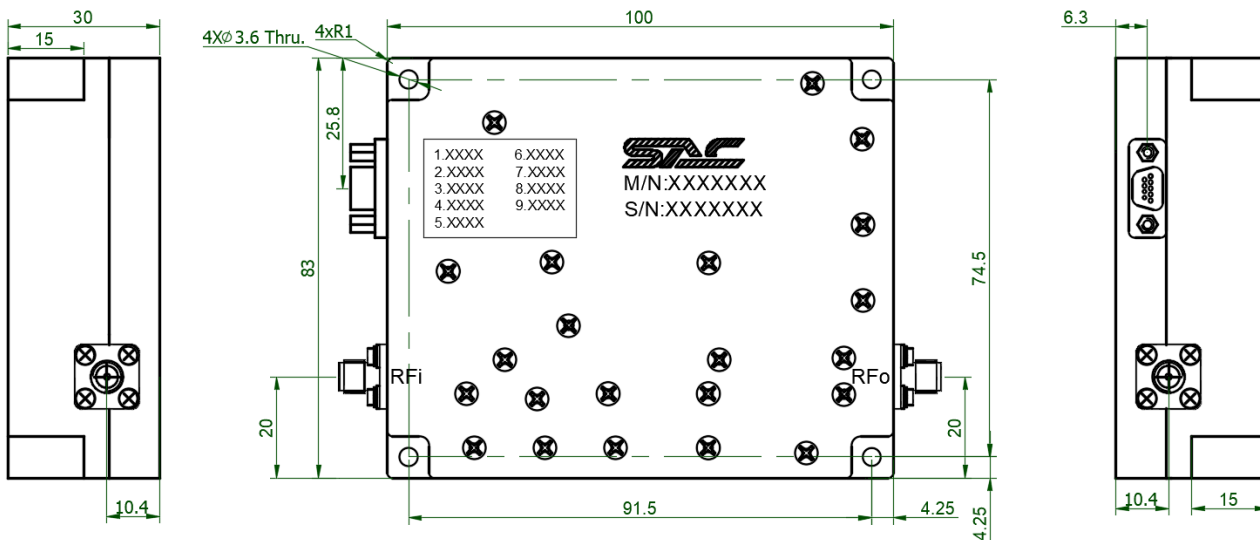
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Environmental

| Parameter | |
|-----------------------|----------------------------|
| Operation Temperature | -40 to+70°C Base plate |
| Storage Temperature | -55 to+85°C Base plate |
| Vibration | MIL-Std-810E, Method 514-4 |
| Shock | 8g.11mS half sine |

Mechanical Outline

All dimensions are in millimeters



Mechanical Specifications

| Pin No. | Function | Pin No. | Function |
|---------|-------------------------|---------|------------------------------|
| 1 | +28V | 6 | Connect to GND |
| 2 | +28V | 7 | Connect to GND |
| 3 | +28V | 8 | Connect to GND |
| 4 | VD Enable(I<10mA) | 9 | Operation Current Monitoring |
| 5 | Modulation Input(I<5mA) | | |

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Turn-on:

1. Apply +28V first;
2. Apply VD(0-0.3V→OFF/4-5V→ON) ;
3. Apply Modulation (0-0.3V→OFF/4-5V→ON) ;
4. Apply RFIN signal.

Turn-off:

1. Remove Modulation (0-0.3V);
2. Remove VD (0-0.3V);
3. Remove +28V;
4. Remove RFIN signal

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