

# RMPA1950-78

## 3.0V PCS CDMA MMIC Power Amplifier Module

### Description

The RMPA1950-78 is a small outline, high efficiency Power Amplifier module for PCS CDMA personal communication system applications. The Power Amplifier module is internally matched to 50 ohms which minimizes the use of external components and reduces circuit complexity for the designer. The module uses Raytheon's Heterojunction Bipolar Transistor (HBT) process.

### Features

- Single supply operation
- Efficiency of 33% typical, for CDMA average power out of 28 dBm
- Low cost LCC package
- Matched input and output module

### Electrical Characteristics<sup>1</sup>

| Parameter                                           | Min  | Typ | Max   | Unit   |
|-----------------------------------------------------|------|-----|-------|--------|
| Frequency Range                                     | 1850 |     | 1910  | MHz    |
| Gain (Small Signal)                                 |      | 28  |       | dB     |
| Gain Variation vs Temp<br>over Range = -30 to +85°C | -2   |     | +1    | dB     |
| Gain Linearity<br>(0 dBm ≤ Pout ≤ 28 dBm)           | -0.5 |     | +1.5  | dB     |
| Power Out                                           | 28   |     |       | dBm    |
| Efficiency at Pout = 28 dBm                         | 30   | 33  |       | %      |
| ACPR (Offset ≥ ± 1.25 MHz) <sup>3</sup>             |      | -49 | -47   | dBc    |
| Noise Figure                                        |      | 6   |       | dB     |
| Noise Power<br>(All Power Levels)                   |      |     | -135  | dBm/Hz |
| Input VSWR (50Ω)                                    |      |     | 2.0:1 | ---    |
| Output VSWR (50Ω)                                   |      |     | 3.5:1 | ---    |
| Stability (All spurious) <sup>2</sup>               |      |     | -70   | dBc    |
| Harmonics (Po ≤ 28 dBm)<br>2fo, 3fo, 4fo            |      |     | -30   | dBc    |
| Quiescent Current                                   |      | 100 | 120   | mA     |
| Vcc                                                 | 3.0  | 3.5 | 4.0   | Volts  |
| Case Operating Temp                                 | -30  |     | +85   | °C     |

**Product Information**

### Notes:

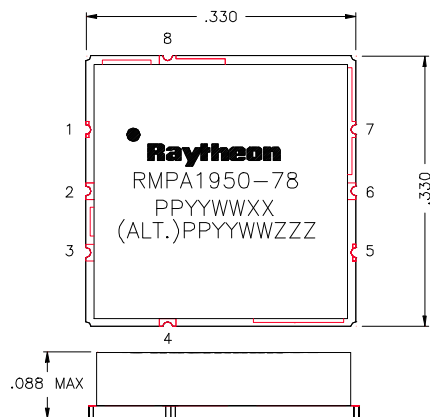
1. All parameters to be met at Ta = +25°C, Vcc = +3.5V and load VSWR ≤ 1.2:1.
2. Source/Load VSWR ≤ 3:1 (In Band, All Angles) or Load VSWR ≤ 20:1 (Out of Band, All Angles) Tc = -30°C to +85°C).
3. Po ≤ 28 dBm at Vdd=3.5V; CDMA Waveform measured using the ratio of the average power within the 1.23 MHz channel and within a 30 kHz bandwidth at a 1.25 MHz offset.

Raytheon reserves the right to update or change specifications without notice.

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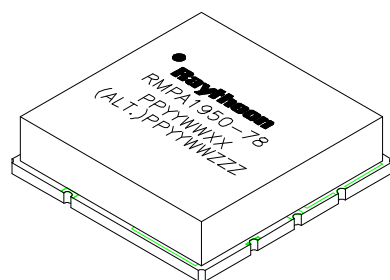
## 3.0V PCS CDMA MMIC Power Amplifier Module

Figure 1. Package Details



| Pin# | Description |
|------|-------------|
| 1    | GND         |
| 2    | RF IN       |
| 3    | VREF        |
| 4    | N/C         |
| 5    | GND         |
| 6    | RF OUT      |
| 7    | GND         |
| 8    | Vcc         |

Dimensions in Inches



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