



# MA1114-1

For PCS - 30W Power Amplifier

MA1114-1

## DESCRIPTION

The MA1114-1 is a 30W power amplifier designed for PCS, which comprises 4 stages GaAs FET and 2 stages Si bipolar transistors, also RF power monitoring circuit.

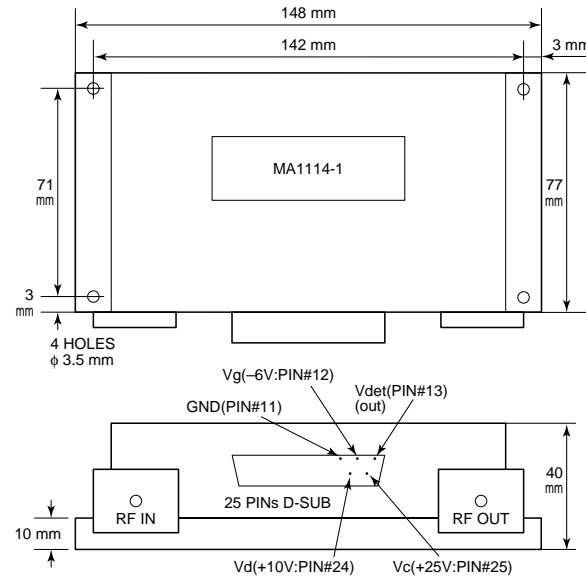
## FEATURES

- Specified +25/+10 Volt Characteristics
  - RF Output Power : +45 dBm (typ.)
  - Harmonics : -65 dBc typ.
- Small Size : 77 × 148 × 40 mm<sup>3</sup>
- 50 Ohm Input/Output Impedances

## APPLICATION

- PCS (1930 ~ 1990 MHz)  
Base station

## OUTLINE DRAWING



## 2. Electrical Performances (T<sub>c</sub> = +25°C, V<sub>c</sub> = +25V, V<sub>d</sub> = +10V, V<sub>g</sub> = -6V, Z<sub>g</sub> = Z<sub>l</sub> = 50Ω)

| No. | Items  | Symbol            | Condition   | Standard |      |      | Unit |
|-----|--|-------------------|---|----------|------|------|------|
|     |  |                   |   | Min      | Type | Max  |      |
| 1   | Frequency  | f                 |   | 1930     | ---  | 1990 | MHz  |
| 2   | Output Power                                     | P <sub>out</sub>  |   | +45      | ---  | ---  | dBm  |
| 3   | Output RF modulation spectrum ; from the carrier | ----              | P <sub>out</sub> = +45 dBm<br>(P <sub>in</sub> control) | ----     | ---- |      |      |
|     | 100 KHz  |                   |   | ----     | ---- | +0.5 | dB   |
|     | 200 KHz  |                   |   | ----     | ---- | -30  | dB   |
|     | 250 KHz  |                   |   | ----     | ---- | -33  | dB   |
|     | 400 KHz  |                   |   | ----     | ---- | -60  | dB   |
|     | 600 KHz  |                   |   | ----     | ---- | -70  | dB   |
|     | to < 1200 KHz                                    |                   |   | ----     | ---- |      |      |
|     | 1200 KHz   |                   |   | ----     | ---- | -73  | dB   |
|     | to < 1800 KHz                                    |                   |   | ----     | ---- |      |      |
|     | 1800 KHz   |                   |   | ----     | ---- | -75  | dB   |
|     | to < 6000 KHz                                    |                   |   | ----     | ---- |      |      |
|     | ≥ 6000 KHz                                       |                   |   | ----     | ---- | -80  | dB   |
| 4   | Spurious ; in-band out-band                      |                   |   | ----     | ---- |      |      |
|     |  |                   |   | ----     | ---- | -36  | dBm  |
|     |  |                   |   | ----     | ---- | -30  | dBm  |
| 5   | Harmonics  | 2fo<br>3fo<br>4fo | P <sub>out</sub> = +45 dBm                              | ----     | ---- |      |      |
|     |  |                   |   | ----     | ---- | -60  | dBc  |
|     |  |                   |   | ----     | ---- | -65  | dBc  |
|     |  |                   |   | ----     | ---- | -70  | dBc  |
| 6   | Quiescent current                                | I <sub>cq</sub>   | P <sub>in</sub> = 0mW                                   | ----     | ---- | 1.5  | A    |

## Amplifier Specifications (MA1114-1)

### 1. Maximum Ratings

| No. | Items               | Symbol           | Condition             | Standard  | Unit |
|-----|---------------------|------------------|-----------------------|-----------|------|
| 1   | Case temperature    | T <sub>c</sub>   |                       | -40 ~ +70 | °C   |
| 2   | Storage temperature | T <sub>stg</sub> |                       | -40 ~ +80 | °C   |
| 3   | Collector Voltage   | V <sub>c</sub>   |                       | +26.0     | V    |
| 4   | Drain Voltage       | V <sub>d</sub>   | V <sub>g</sub> = -6V  | +11.5     | V    |
| 5   | Gate Voltage        | V <sub>g</sub>   | V <sub>d</sub> = +10V | -10.0     | V    |
| 6   | RF Input Power      | P <sub>in</sub>  |                       | -9.0      | dBm  |