



SUMITOMO ELECTRIC INDUSTRIES, LTD.

01.02.26

**P0581944H**

**1.9 GHz band**

***Power Amplifier Module***

◆ **Features**

- 1.9 GHz frequency band
- Typical 37.5 dBm output power
- Low power consumption 34 W typ.
- Excellent adjacent leakage power
- Typical 27.5 dB power gain
- Cost-effective metal package
- Low thermal resistance structure



◆ **Applications**

- Final stage power amplifier of base station for PHS

◆ **Description**

The P0581944H is a high performance 1.9 GHz band power amplifier module capable of 37.5 dBm output power with a typical 27.5 dB gain at 1.9 GHz band, housed in a cost effective metal package. This device features a low power consumption owing to the excellent linearity and high gain of the pulse-doped GaAs MESFET developed by SEI, dissipating 3.8A typical.

The P0581944H is designed to perform the output power of 2.4 W/time-slot at antenna for use in a base station of personal handy phone system (PHS) in Japan. It operates from +9 V and -5.0 V power supplies.

◆ **Absolute Maximum Ratings**

Case Temperature Tc=50 °C

| Parameter                  | Symbol | Value       | Units |
|----------------------------|--------|-------------|-------|
| DC Supply Voltage          | Vd     | 11 *        | V     |
|                            | Vg     | - 6         | V     |
| Input Power                | Pin    | 15          | dBm   |
| Storage Temperature        | Tstg   | -40 to + 90 | °C    |
| Operating Case Temperature | Topt   | -20 to + 75 | °C    |

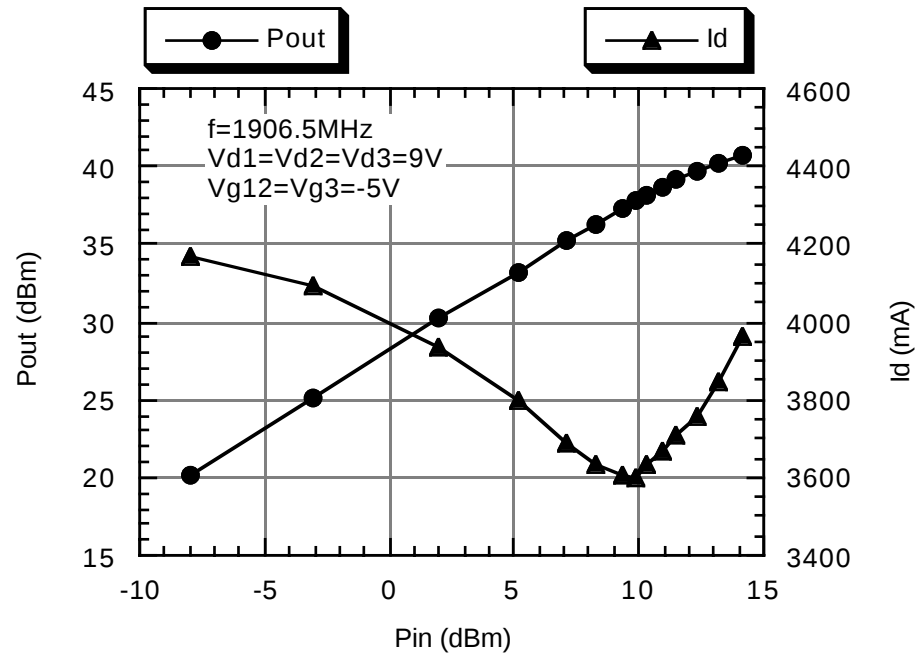
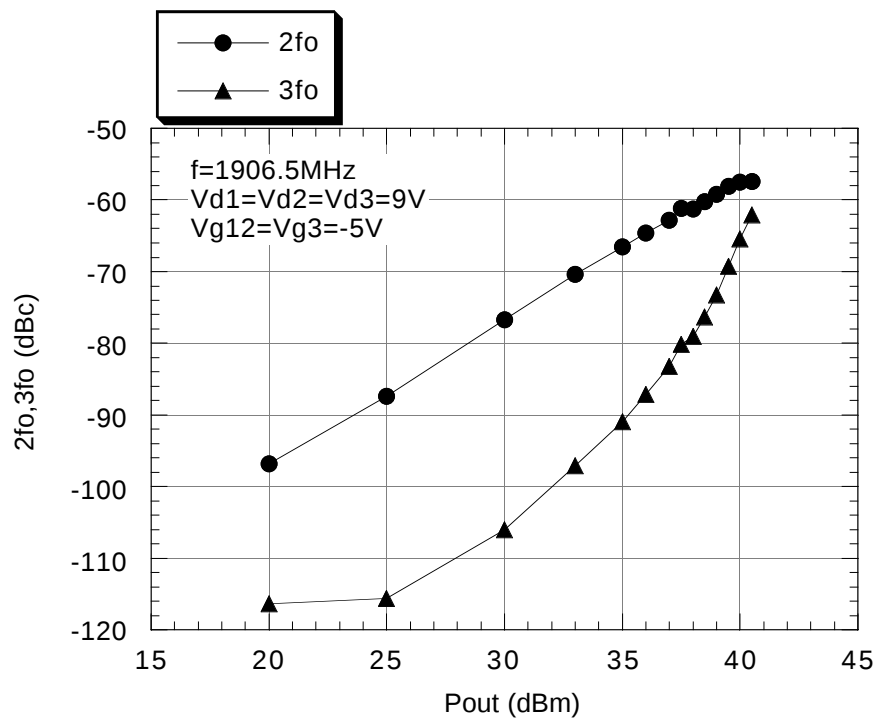
Notes: Operating of this device above any one of these parameters may cause permanent damage.

\*Vg12,Vg3=-5.0 V

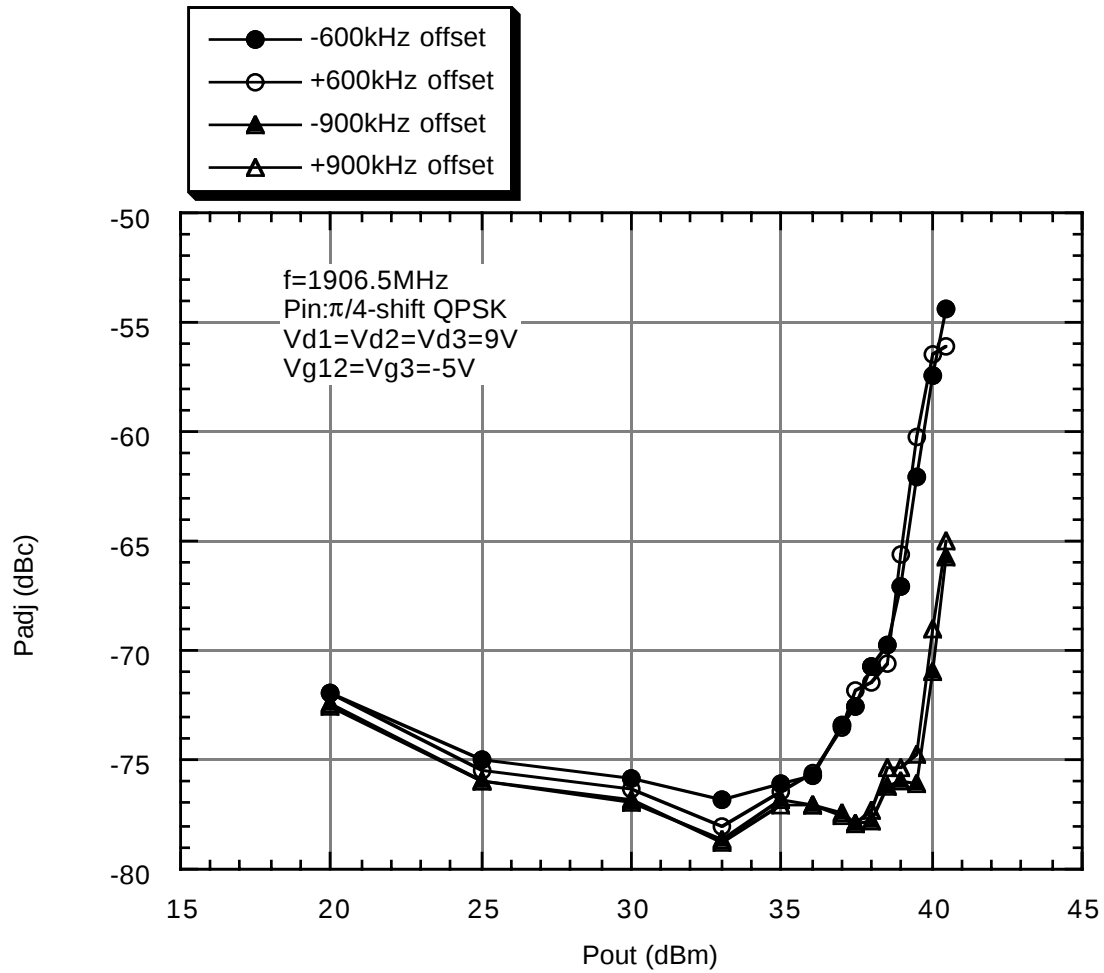
◆ **Electrical Specifications**

Case Temperature Tc=50 °C

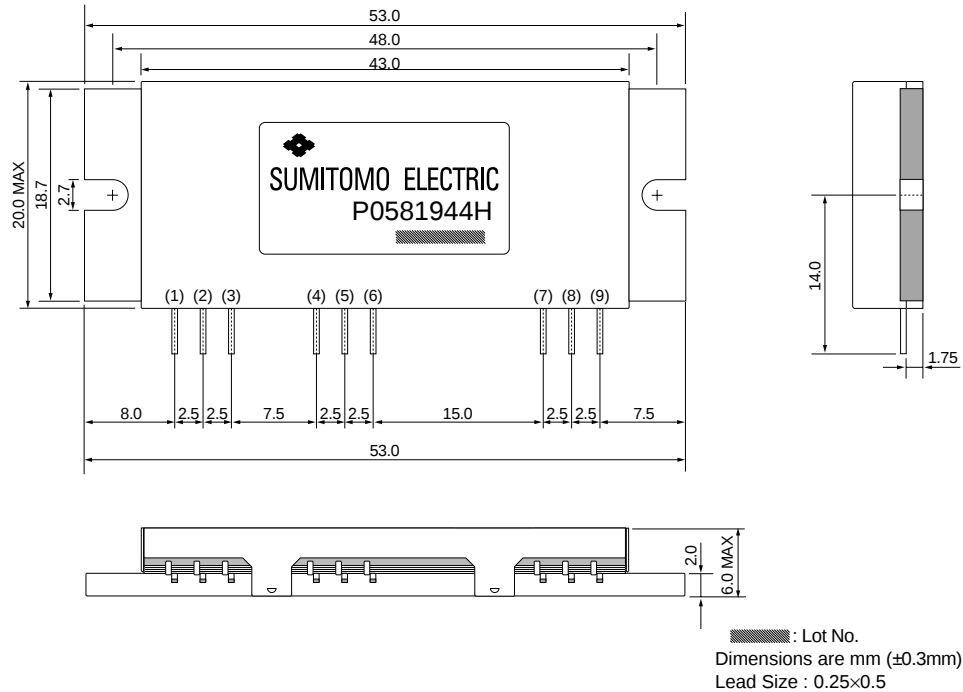
| Parameter                        | Symbol         | Test Conditions                                                             | Value |      |      | Units |
|----------------------------------|----------------|-----------------------------------------------------------------------------|-------|------|------|-------|
|                                  |                |                                                                             | Min.  | Typ. | Max. |       |
| Frequency                        | f              |                                                                             | 1895  | —    | 1921 | MHz   |
| Supply Current (under operation) | I <sub>D</sub> | Pout=37.5 dBm<br>Vd1=9 V<br>Vd2=9 V<br>Vd3=9 V<br>Vg12=-5.0 V<br>Vg3=-5.0 V | —     | 3.8  | 4.3  | A     |
| Gate Current                     | I <sub>G</sub> |                                                                             | —     | —    | 20   | mA    |
| Power Gain                       | Ga             |                                                                             | 25.5  | 27.5 | —    | dB    |
| Input VSWR                       | —              |                                                                             | —     | 2.0  | 3.0  | —     |
| Harmonic Distortion              | 2f0            |                                                                             | —     | —    | -30  | dBc   |
|                                  | 3f0            |                                                                             | —     | —    | -30  | dBc   |
| Adjacent Channel Leakage Power   | Padj1          | 600 kHz offset                                                              | —     | -68  | -66  | dBc   |
|                                  | Padj2          | 900 kHz offset                                                              | —     | -72  | -71  | dBc   |
| Occupied Frequency Bandwidth     | —              | —                                                                           | —     | 250  | 270  | kHz   |

◆ **Power Characteristics**◆ **Hermonic Distortion**

## ◆ Adjacent Channel Leakage Power



### ◆ Package Drawings (Dimensions are mm)



Note: (1)Lead Size : 0.25 $\times$ 0.5  
 (2)Nominal Variation of Lead Pitch :  $\pm 0.3$   
 (3)Nominal Variation of parts undescribed :  $\pm 0.3$

### ◆ Pin Assignment

|           |           |         |          |
|-----------|-----------|---------|----------|
| (1) RFin  | (2) GND   | (3) Vd1 | (4) Vg12 |
| (5) Vd2   | (6) Vg3   | (7) Vd3 | (8) GND  |
| (9) RFout | Case: GND |         |          |

◆ Evaluation Board Layout (Dimensions are mm)

