



## P0521914H

1.9 GHz band

**Power Amplifier Module**

### ◆ *Features*

- 1.9 GHz frequency band
- Typical 30 dBm output power
- Low power consumption 3.6 W typ.
- Excellent adjacent leakage power
- Typical 26 dB power gain
- Cost-effective metal package
- Low thermal resistance structure



### ◆ *Applications*

- Final stage power amplifier of base station for PHS

### ◆ *Description*

The P0521914H is a high performance 1.9 GHz band power amplifier module capable of 30 dBm output power with a typical 26 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 750 mA typical.

The P0521914H is designed to perform the output power of 160 mW/time-slot at antenna for use in a base station, called 7 channel type, of personal handy phone system (PHS) in Japan. It operates from +4.8 V and -3 V power supplies.

◆ **Absolute Maximum Ratings**Case Temperature T<sub>c</sub>=25 °C

Parameter	Symbol	Value	Units
DC Supply Voltage	Vd1, Vd2	8 *	V
	Vg1, Vg2	- 5	V
Input Power	Pin	10	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.

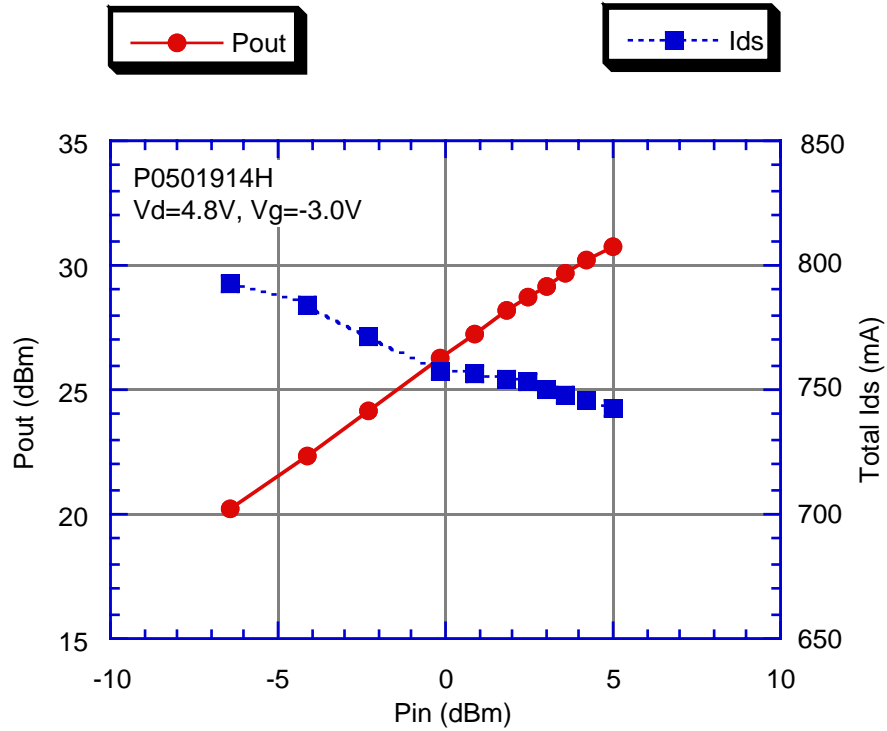
\*Vg1,Vg2=-3.0 V

◆ **Electrical Specifications**Case Temperature T<sub>c</sub>=25 °C

Parameter	Symbol	Test Conditions	Value			Units
			Min.	Typ.	Max.	
Frequency	f		1895	—	1918	MHz
Supply Current (under operation)	I <sub>d</sub>	P <sub>out</sub> =30 dBm V <sub>d1</sub> =4.8 V V <sub>d2</sub> =4.8 V V <sub>g1</sub> =-3.0 V V <sub>g2</sub> =-3.0 V	—	750	800	mA
Gate Current	I <sub>g</sub>		—	—	5	mA
Power Gain	G <sub>a</sub>		24	26	—	dB
Input VSWR	—		—	1.5	3.0	—
Harmonic Distortion	2f <sub>0</sub>		—	-60	-35	dBc
	3f <sub>0</sub>		—	-50	-40	dBc
Adjacent Channel Leakage Power	P <sub>adj1</sub>	600 kHz offset	—	-61	-58	dBc
	P <sub>adj2</sub>	900 kHz offset	—	-68	-65	dBc
Occupied Frequency Bandwidth	—	—	—	250	270	kHz
Reverse IM3	IM3	P <sub>out</sub> =30 dBm f <sub>2</sub> =f <sub>1</sub> ±600 kHz P <sub>in</sub> (f <sub>2</sub> )=-10 dBm	—	-65	-60	dBc

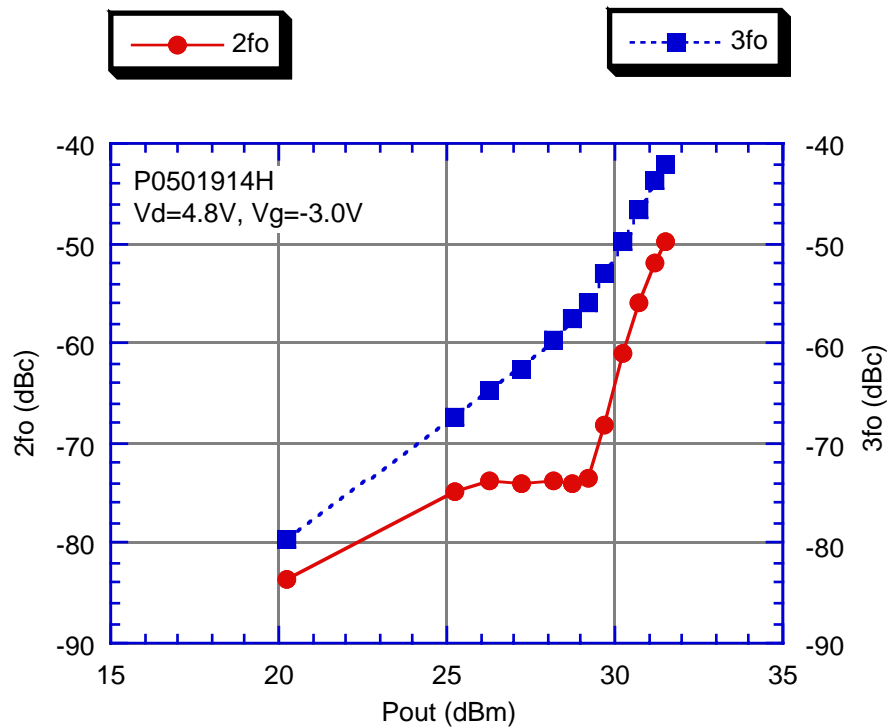
◆ **Power Characteristics**

f=1906.55 MHz, Vd1,Vd2=4.8 V, Vg1,Vg2=-3.0 V



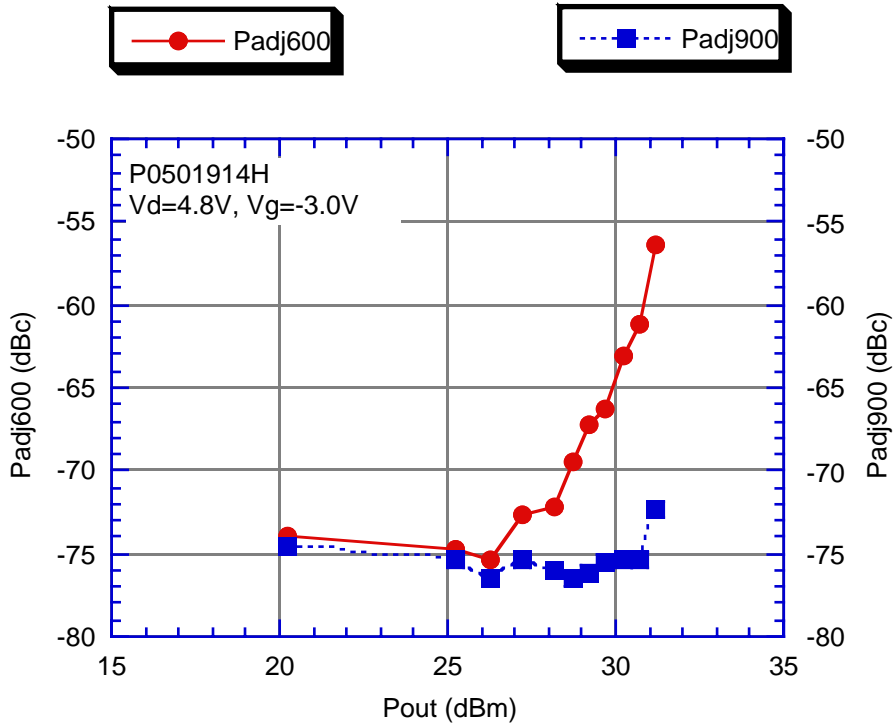
◆ **Harmonic Distortion**

f=1906.55 MHz, Vd1,Vd2=4.8 V, Vg1,Vg2=-3.0 V



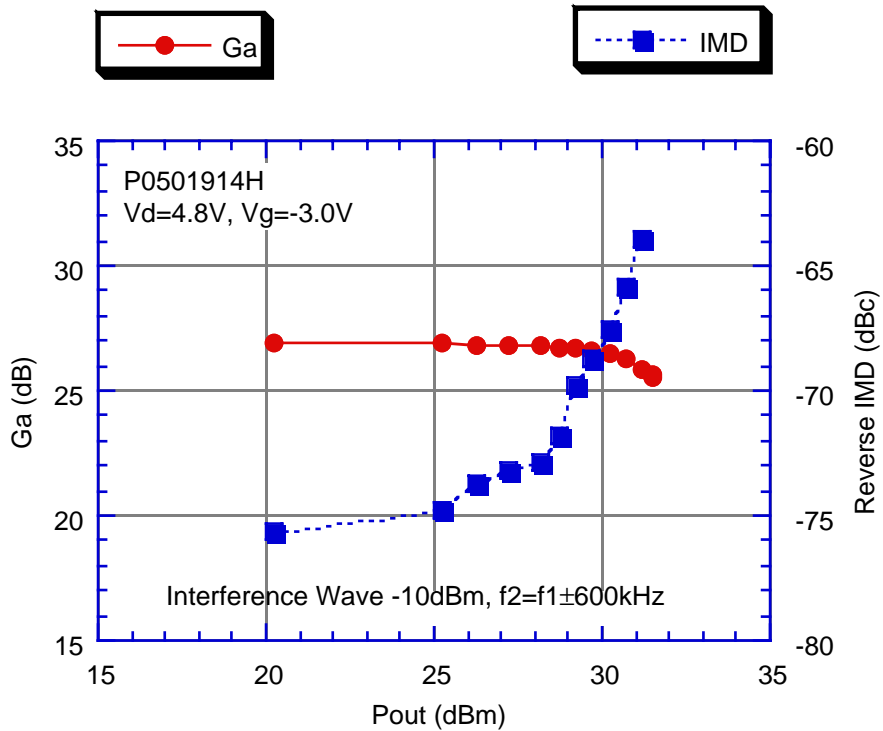
◆ **Adjacent Channel Leakage Power**

f=1906.55 MHz, Vd1,Vd2=4.8 V, Vg1,Vg2=-3.0 V

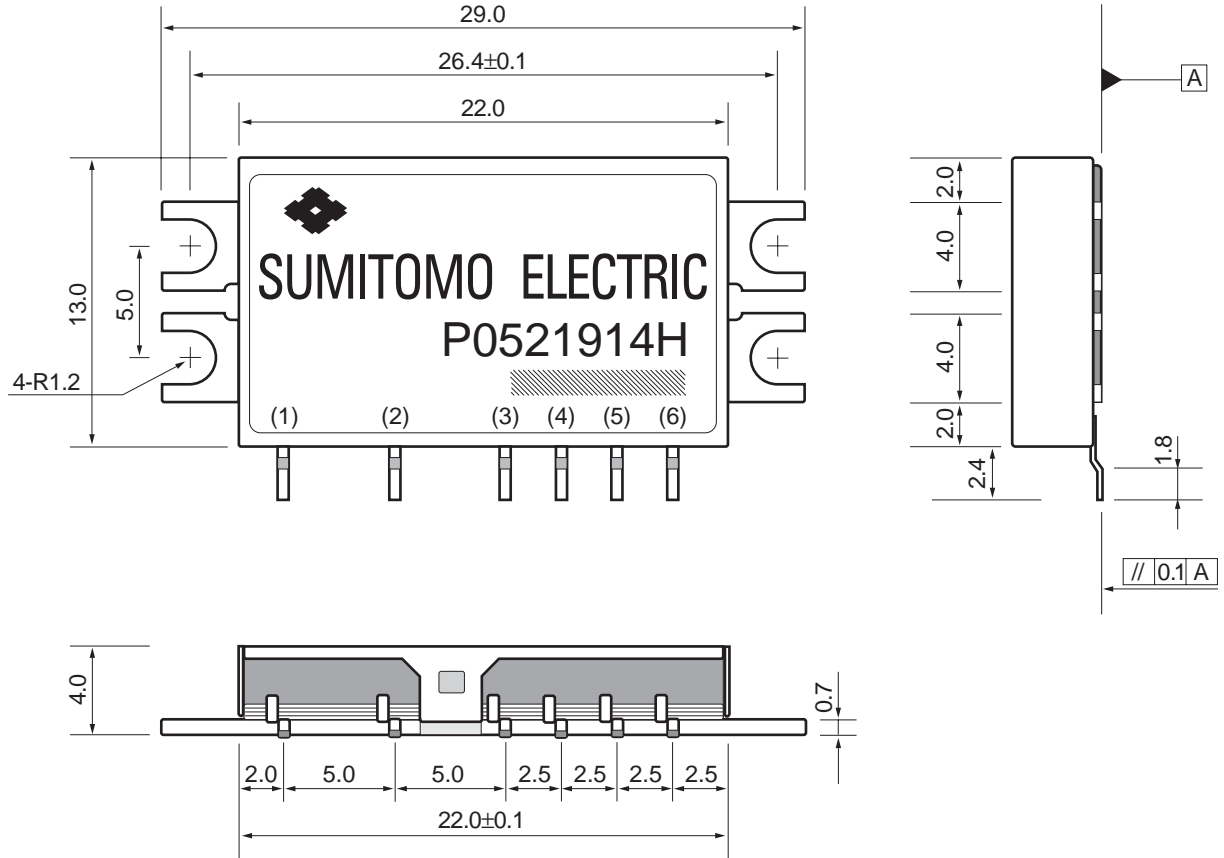


◆ **Reverse IM3**


f=1906.55 MHz, Vd1,Vd2=4.8 V, Vg1,Vg2=-3.0 V



◆ Package Drawings (Dimensions are mm)



Lead Size : 0.25×0.5

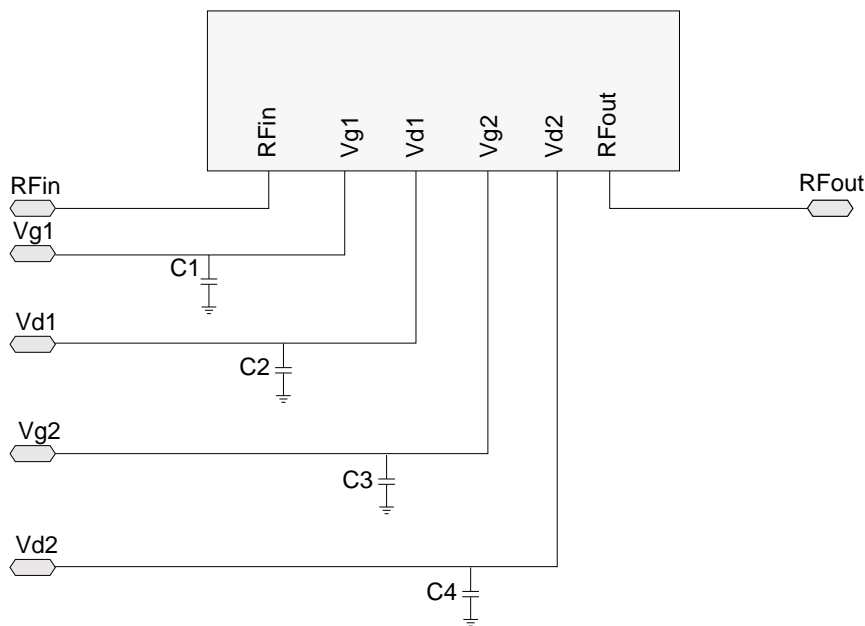
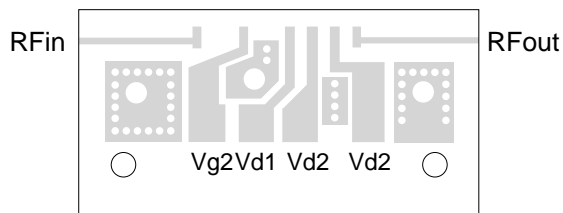
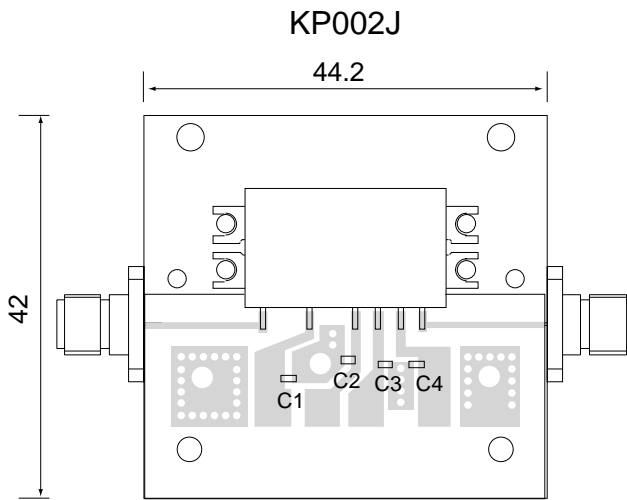
 : Lot No.  
 Dimensions are mm (±0.3mm)

Note: (1)Nominal Variation of Lead Pitch : ±0.3  
 (2)Nominal Variation of parts undescribed : ±0.3

◆ Pin Assignment

(1) RFin	(2) Vg1	(3) Vd1	
(4) Vg2	(5) Vd2	(6) RFout	Case: GND

◆ Evaluation Board Layout (Dimensions are mm)



DESIGNATION	VALUE
C1,C3	0.1 $\mu$ F
C2,C4	1.0 $\mu$ F