



SUMITOMO ELECTRIC INDUSTRIES, LTD.

00.05.10

P0561912H

1.9 GHz band

Power Amplifier Module

◆ *Features*

- 1.9 GHz frequency band
- Typical 30 dBm output power
- Low power consumption 3.5 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 P0501912H 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 700 mA typical. The P0501912H 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 +5 V and -3 V power supplies.

◆ **Absolute Maximum Ratings**

Case Temperature Tc=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

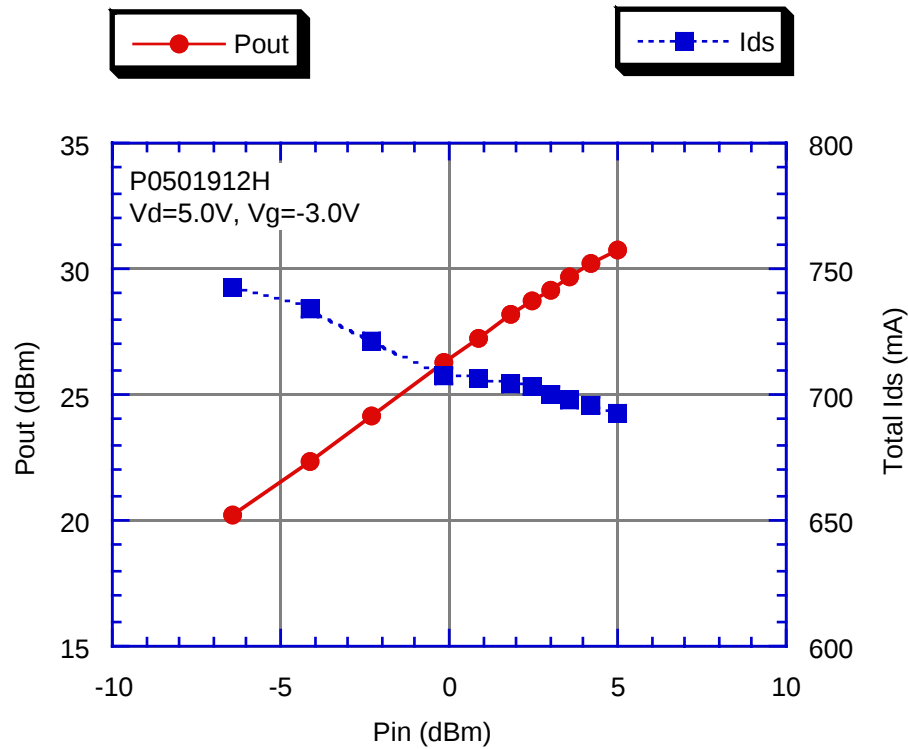
◆ **Electrical Specifications**

Case Temperature Tc=25 °C

Parameter	Symbol	Test Conditions	Value			Units
			Min.	Typ.	Max.	
Frequency	f		1895	—	1918	MHz
Supply Current (under operation)	Id	Pout=30 dBm Vd1=5 V Vd2=5 V Vg1=-3.0 V Vg2=-3.0 V	—	700	750	mA
Gate Current	Ig		—	—	5	mA
Power Gain	Ga		24	26	—	dB
Input VSWR	—		—	1.5	3.0	—
Harmonic Distortion	2f0		—	-60	-35	dBc
	3f0		—	-50	-40	dBc
Adjacent Channel Leakage Power	Padj1	600 kHz offset	—	-61	-58	dBc
	Padj2	900 kHz offset	—	-68	-65	dBc
Occupied Frequency Bandwidth	—	—	—	250	270	kHz
Reverse IM3	IM3	Pout=30 dBm f2=f1±600 kHz Pin(f2)=-10 dBm	—	-65	-60	dBc

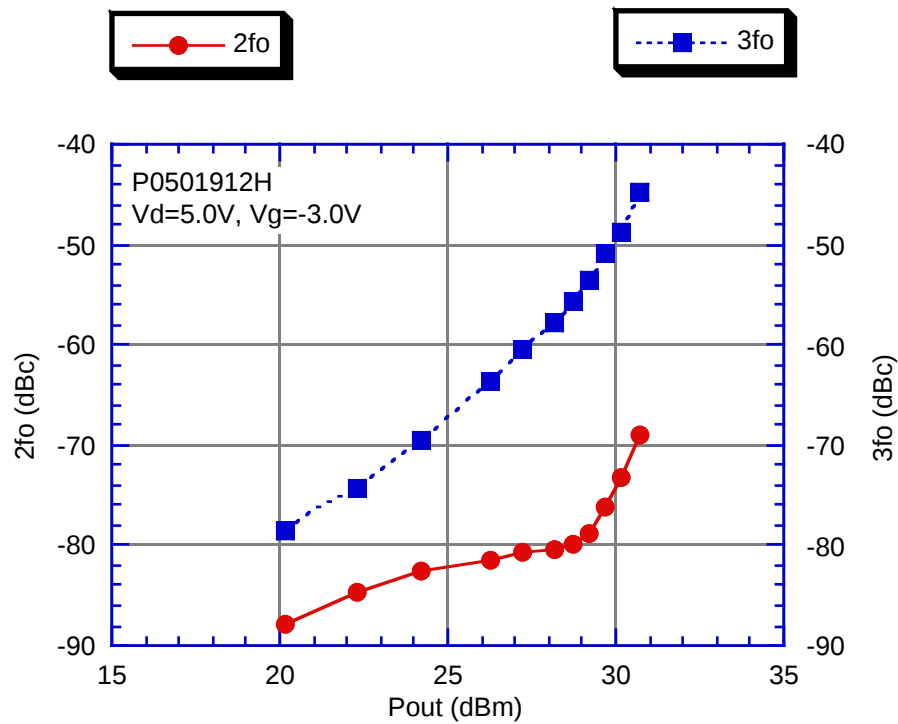
◆ Power Characteristics

$f=1906.55\text{ MHz}$, $V_{d1},V_{d2}=5\text{ V}$, $V_{g1},V_{g2}=-3.0\text{ V}$



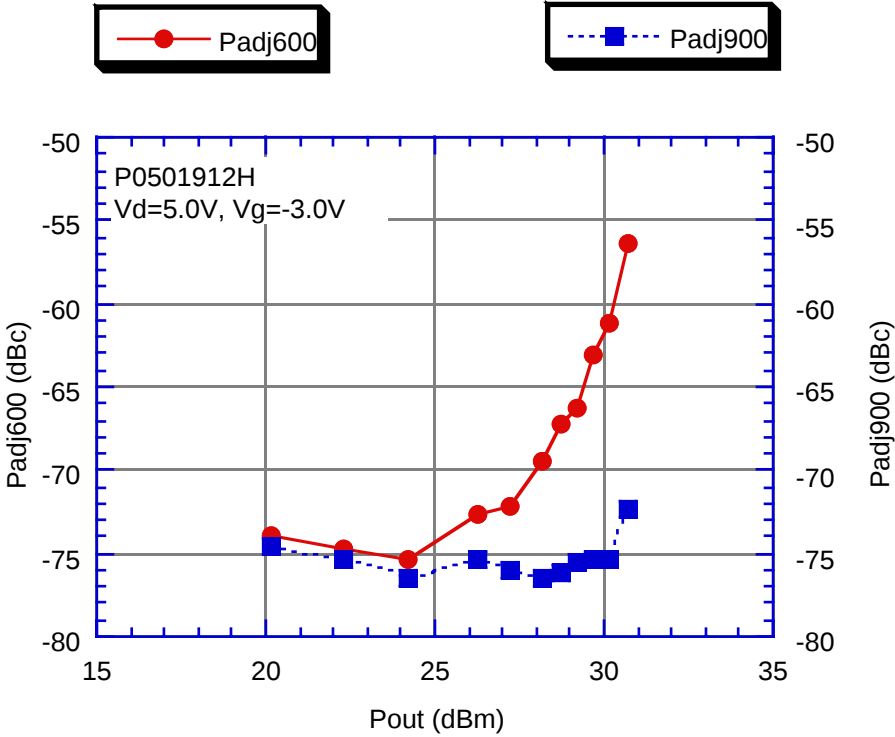
◆ Harmonic Distortion

$f=1906.55\text{ MHz}$, $V_{d1},V_{d2}=5\text{ V}$, $V_{g1},V_{g2}=-3.0\text{ V}$



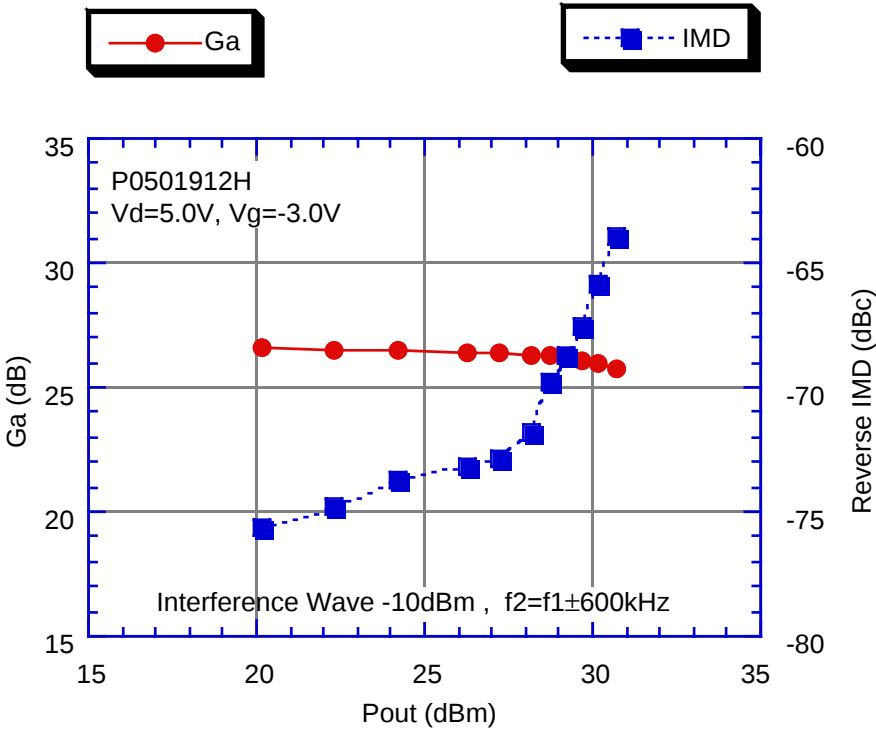
◆ *Adjacent Channel Leakage Power*

$f=1906.55\text{ MHz}$, $V_{d1},V_{d2}=5\text{ V}$, $V_{g1},V_{g2}=-3.0\text{ V}$

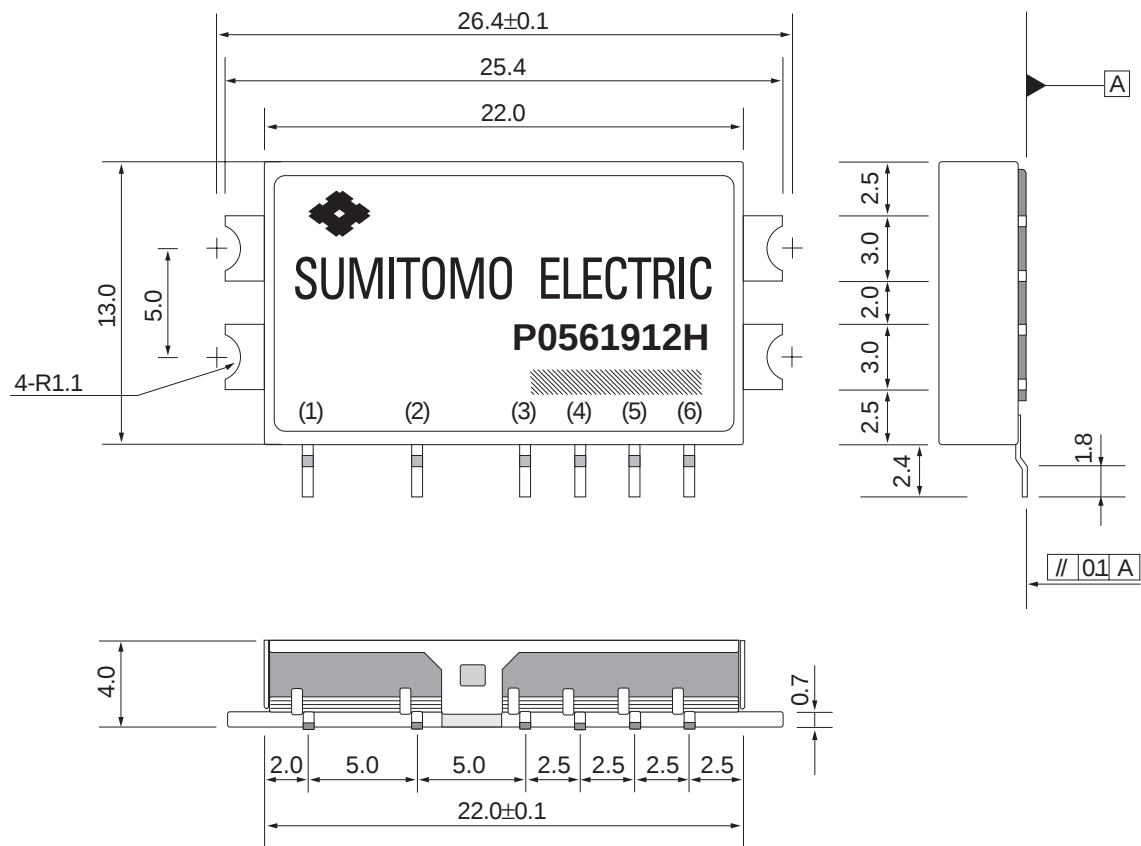


◆ *Harmonic Distortion*

$f=1906.55\text{ MHz}$, $V_{d1},V_{d2}=6\text{ V}$, $V_{g1},V_{g2}=-3.0\text{ V}$



◆ **Package Drawings (Dimensions are mm)**



Lead Size : 0.25×0.5

▨ : Lot No.

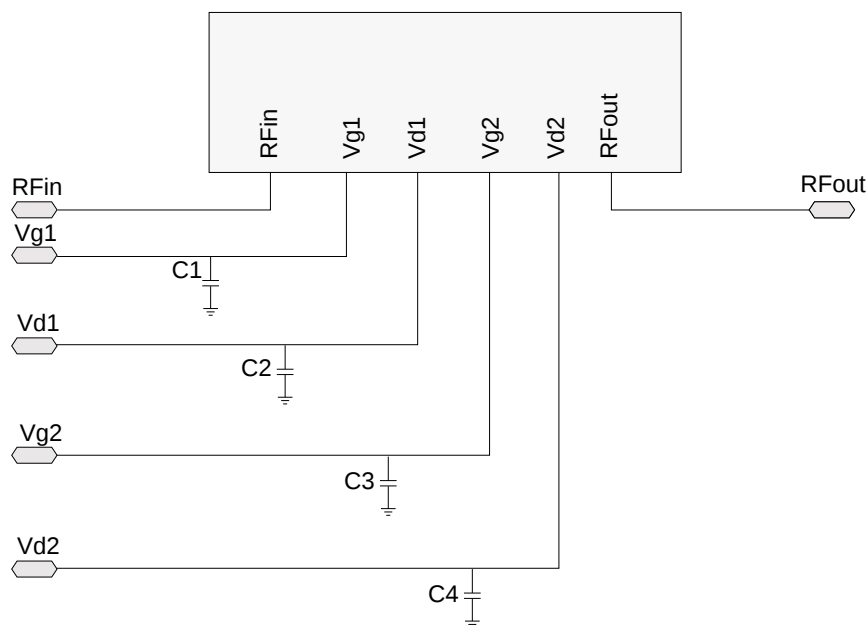
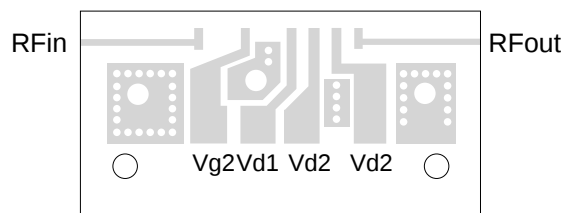
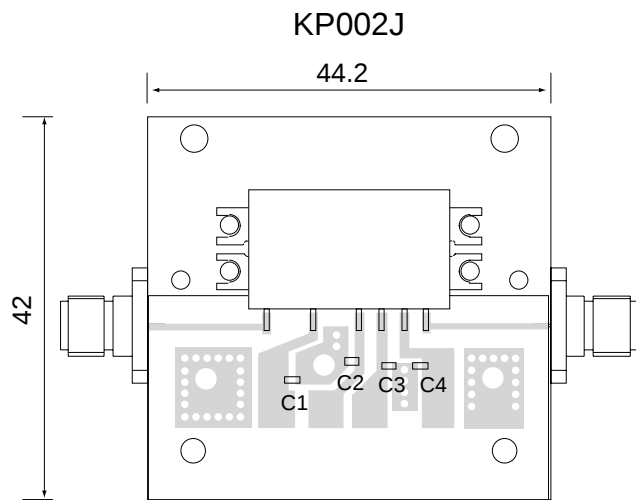
Dimensions are mm (±0.3mm)

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	0.1μF
C2,C4	1.0μF