



SUMITOMO ELECTRIC INDUSTRIES, LTD.

Preliminary

00.05.10

P0461552H

1.5GHz band

Power Amplifier Module

◆ **Features**

- Low voltage operation of 4.8 V with negative voltage of -3 V
- 1487 - 1491 MHz frequency band
- Typical P1dB of 30 dBm
- Excellent IM3 of -40 dBc at 20 dBm output with low power consumption of 2.3 W
- Typical 29 dB power gain
- Cost-effective metal package
- Low thermal resistance structure



◆ **Applications**

- Power Amplifier for use in smaller zone size of PDC booster or base station systems

◆ **Description**

The P0461552H is a power amplifier module which achieves an excellent IM3 of -40 dBc at the output power of 20 dBm (S.C.L.) with a typical 29 dB gain at an 1.5 GHz band, housed in a cost effective metal package. It features a low voltage operation of 4.8 V. This power amplifier for smaller zone size of the PDC booster or base station systems is required a low 3rd order distortion because of amplifying several carriers at the same time. The P0461552H is designed to achieve the total output power of 23 dBm at IM3 of -40 dBc with a low power consumption of 2.3 W. It operates with 4.8 V and -3 V power supplies.

◆ **Absolute Maximum Ratings**Case Temperature T_c=25 °C

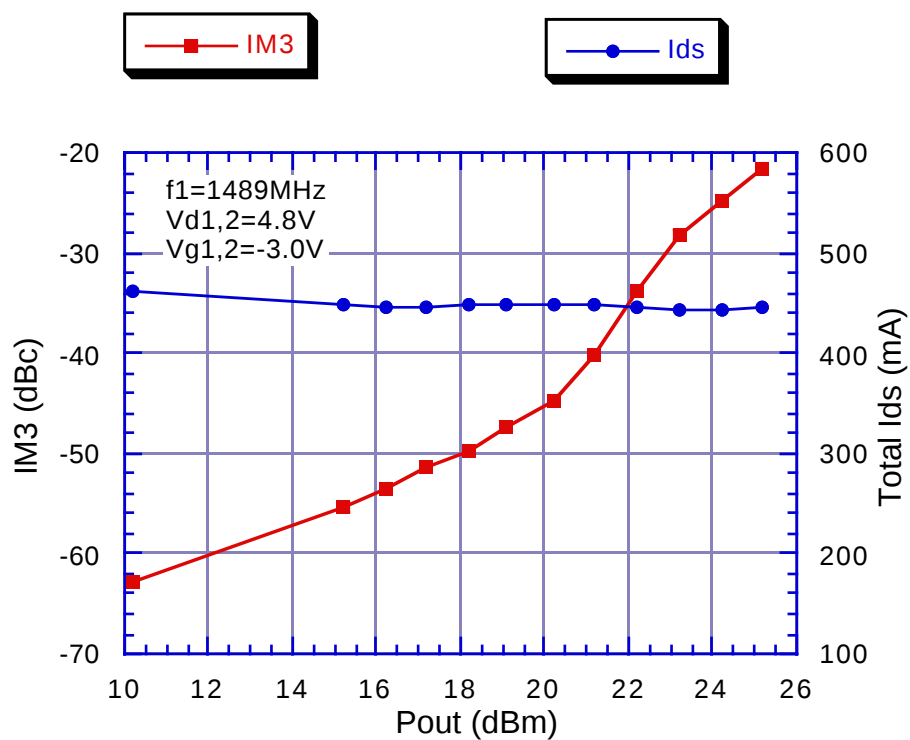
Parameter	Symbol	Value	Units
DC Supply Voltage	V _d	6 *	V
	V _g	- 5	V
Input Power	P _{in}	0	dBm
Storage Temperature	T _{stg}	-40 to + 85	°C
Operating Case Temperature	T _{opt}	-20 to + 80	°C

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

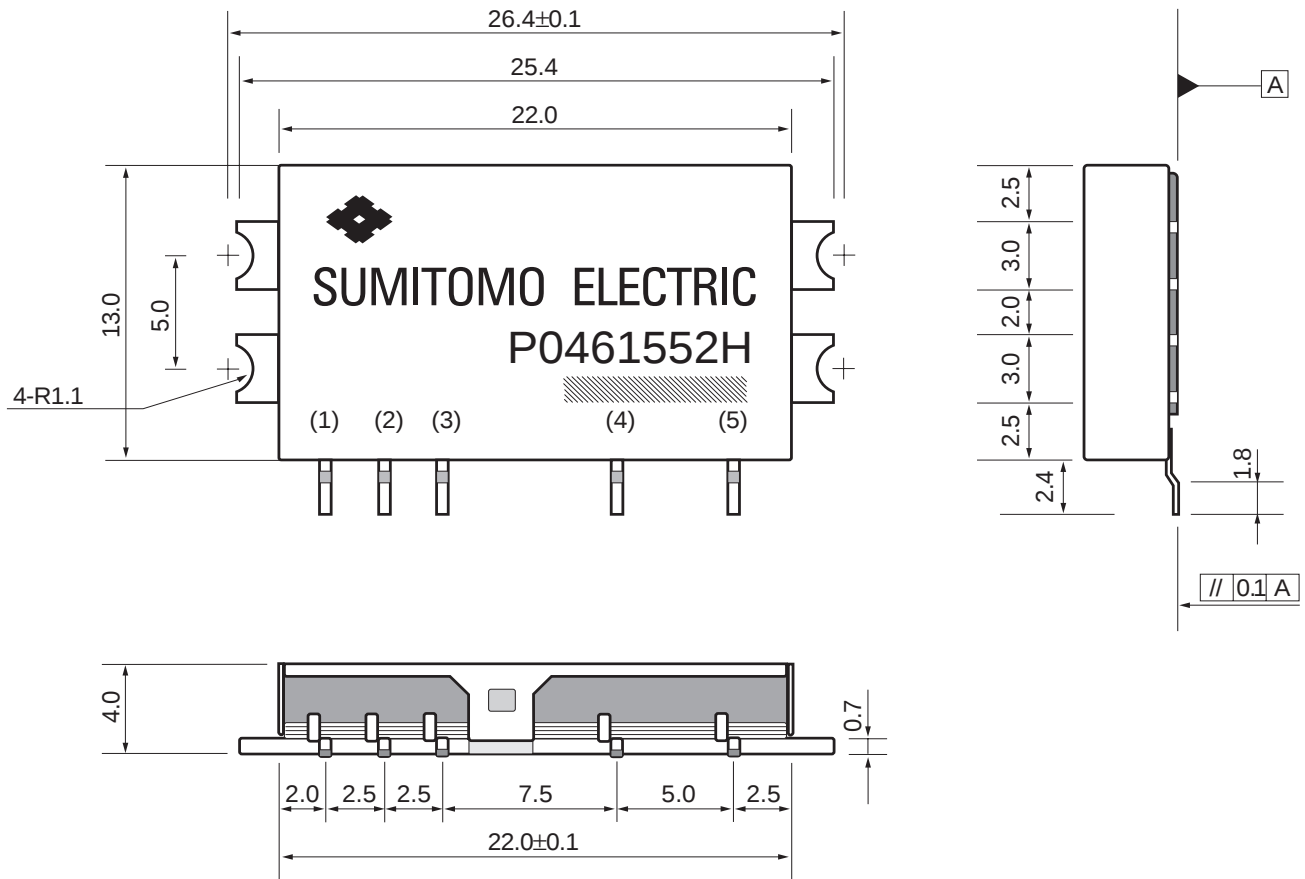
*V_g=-3 V◆ **Electrical Specifications**Case Temperature T_c=25 °C

Parameter	Symbol	Test Conditions	Value			Units
			Min.	Typ.	Max.	
Frequency	f		1487	—	1491	MHz
Supply Current (under operation)	I _d	P _{out} =23 dBm V _d =4.8 V V _g =-3 V	—	470	500	mA
Gate Current	I _g		—	—	4	mA
Power Gain	G _a		27	29	—	dB
Input VSWR	—		—	—	3.0	—
Harmonic Distortion	2f ₀		—	—	-30	dBc
	3f ₀		—	—	-40	dBc
Third Order Intermodulation Ratio	IM3	P _{out} =20 dBm* Δf = 1 MHz	—	—	-40	dBc

* Single Carrier Level

◆ **Power Characteristics** $f=1489\text{ MHz}$, $V_{d1}, V_{d2}=4.8\text{ V}$, $V_{g1}=-3.0\text{ V}$ 

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



Lead Size : 0.25×0.5

 : Lot No.

Dimensions are mm (± 0.3 mm)

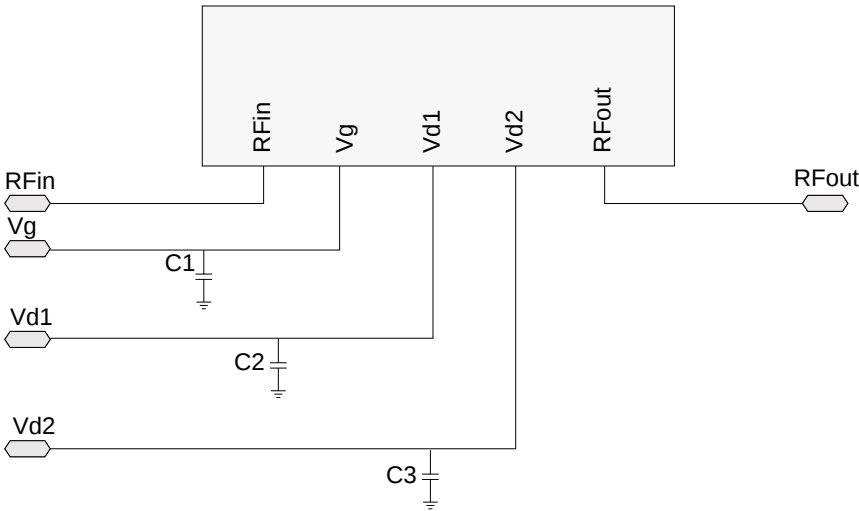
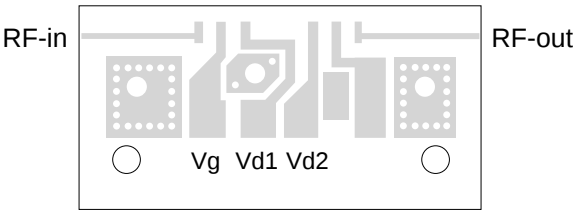
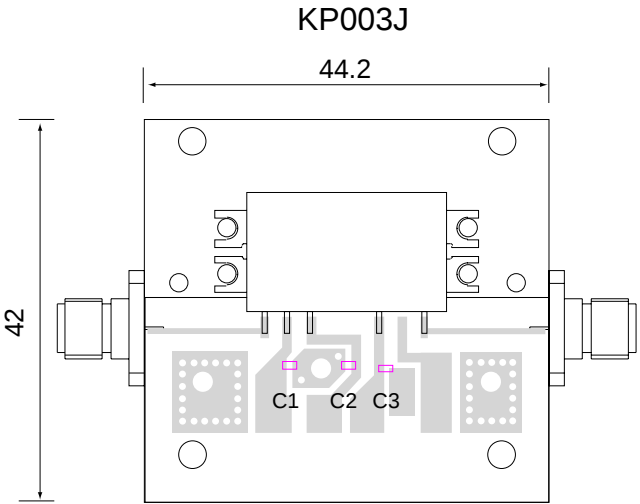
Nominal Variation of Lead Pitch : ± 0.3

Nominal Variation of parts undescribed : ± 0.3

◆ **Pin Assignment**

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

◆ Evaluation Board Layout (Dimensions are mm)



DESIGNATION	VALUE
C1	0.1μF
C2,C3	1.0μF