



SUMITOMO ELECTRIC INDUSTRIES, LTD.

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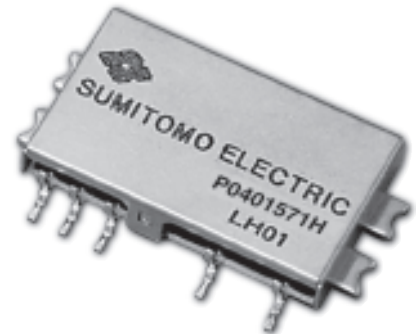
P0401571H

1500MHz band

Power Amplifier Module

◆ **Features**

- Low voltage operation of 5 V with negative voltage of -3 V
- 1486 - 1492 MHz frequency band
- Typical P1dB of 26 dBm
- Excellent adjacent channel leakage power of -58 dBc (50 kHz offset) at 21 dBm output with low power consumption of typical 1.6 W
- Typical 30 dB power gain
- Cost-effective metal package
- Low thermal resistance structure



◆ **Applications**

- Power Amplifier for use in driver stage of PDC base station systems

◆ **Description**

The P0401571H is a power amplifier module which achieves an excellent adjacent leakage power at the output power of 21 dBm at an 1500MHz band, housed in a cost effective metal package. It features a low voltage operation of 5 V. This power amplifier can be used for a driver stage of the PDC base station systems. The P0401571H is designed to achieve the output power of 21 dBm with the adjacent channel leakage power (P_{adj}) of -47 dBc at 25 kHz offset, with the P_{adj} of -58 dBc at 50 kHz offset, and with the P_{adj} of -68 dBc at 100 kHz offset, dissipating as low as typical 1.6 W. It operates with 5 V and -3 V power supplies.

◆ **Absolute Maximum Ratings**Case Temperature T_c=30 °C

Parameter	Symbol	Value	Units
DC Supply Voltage	V _d	6 *	V
	V _g	-5	V
Input Power	P _{in}	-3	dBm
Storage Temperature	T _{stg}	-40 to + 90	°C
Operating Case Temperature	T _{opt}	-20 to + 75	°C

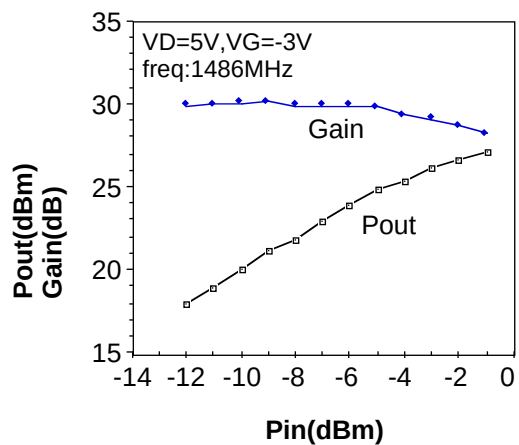
Notes: Operating of this device above any one of these parameters may cause permanent damage.

*V_g=-3 V◆ **Electrical Specifications**Case Temperature T_c=30 °C

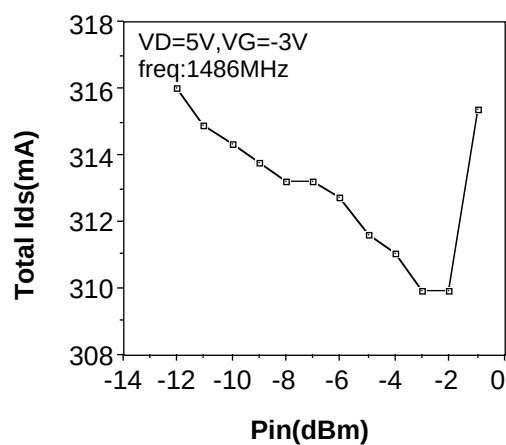
Parameter	Symbol	Test Conditions	Value			Units
			Min.	Typ.	Max.	
Frequency	f		1486	—	1492	MHz
Supply Current (under operation)	I _d	P _{out} =21 dBm V _{d1} =V _{d2} =5V V _{g1} =-3 V	—	330	360	mA
Gate Current	I _g		—	—	4	mA
Power Gain	G _a		27	30	33	dB
Input VSWR	—		—	1.8	3.0	—
Harmonic Distortion	2f ₀		—	-40	-30	dBc
	3f ₀		—	-50	-30	dBc
Adjacent Channel Leakage Power	ACPR	25 KHz offset	—	-49	-47	dBc
	Padj 1	50 KHz offset	—	-60	-58	dBc
	Padj 2	100 KHz offset	—	-74	-68	dBc

◆ **Power Characteristics**

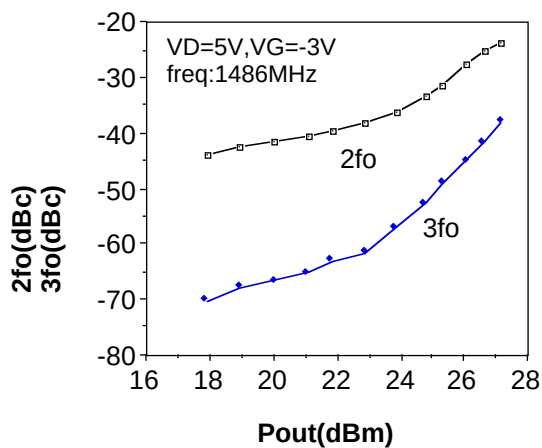
1) Pout, Gain-Pin



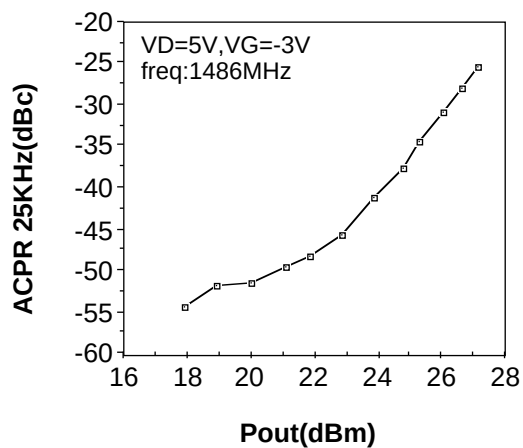
2) Total Ids-Pin

◆ **Harmonic Distortion**

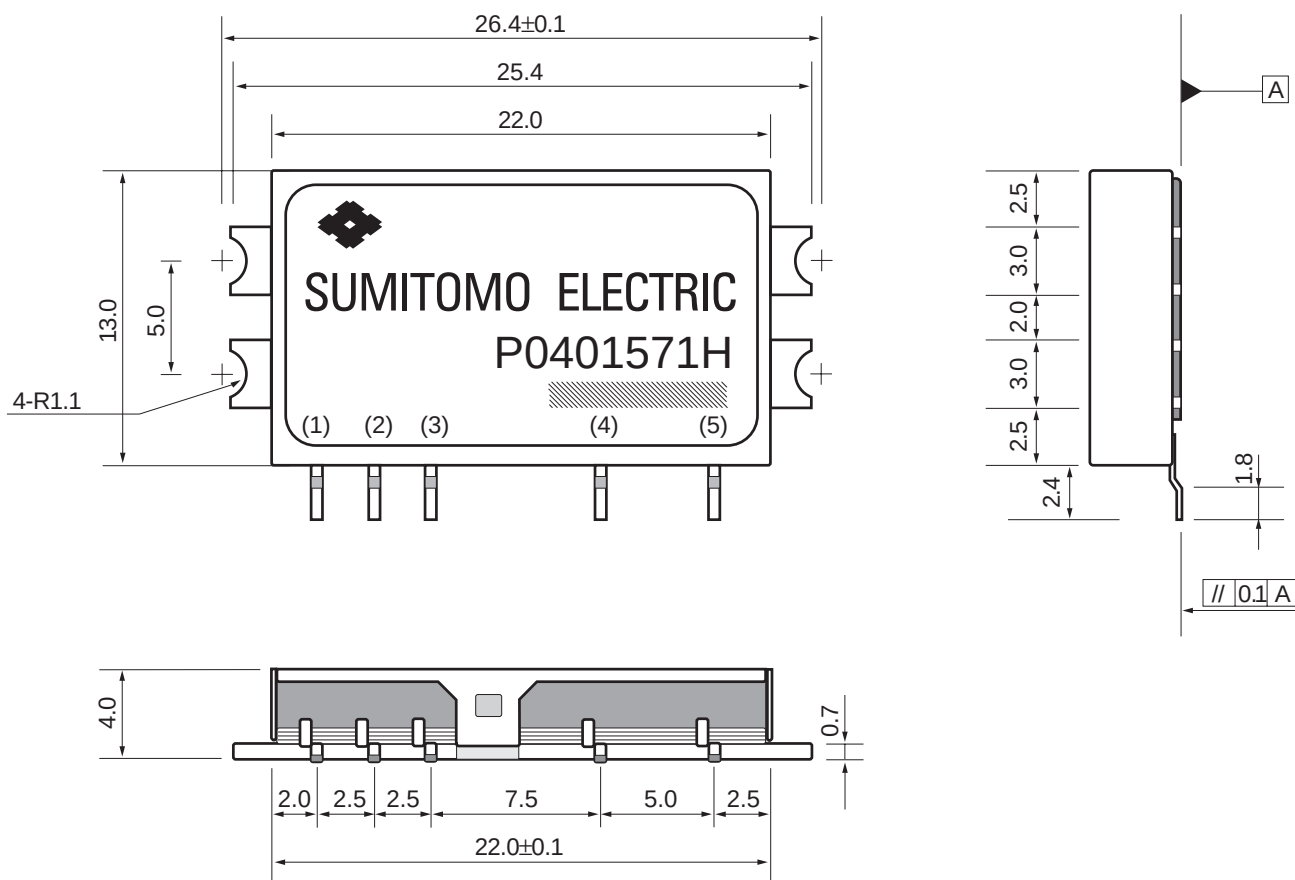
3) 2fo, 3fo-Pout

◆ **Adjacent Channel Leakage Power**

4) ACPR 25KHz-Pout



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



Lead Size : 0.25×0.5

▨ : Lot No.

Dimensions are mm (± 0.3 mm)

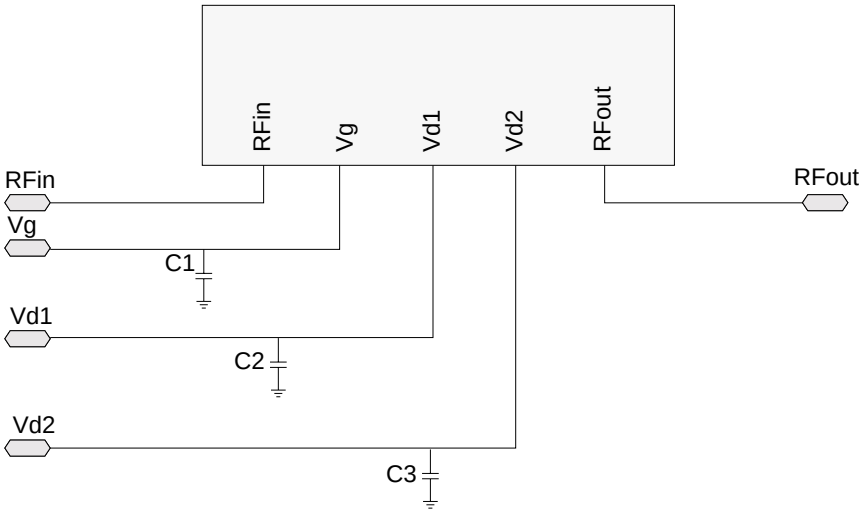
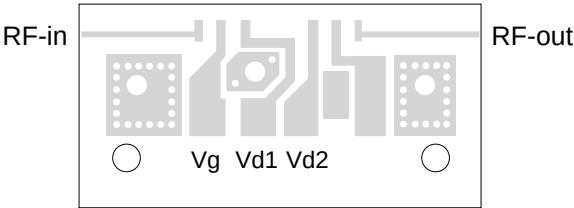
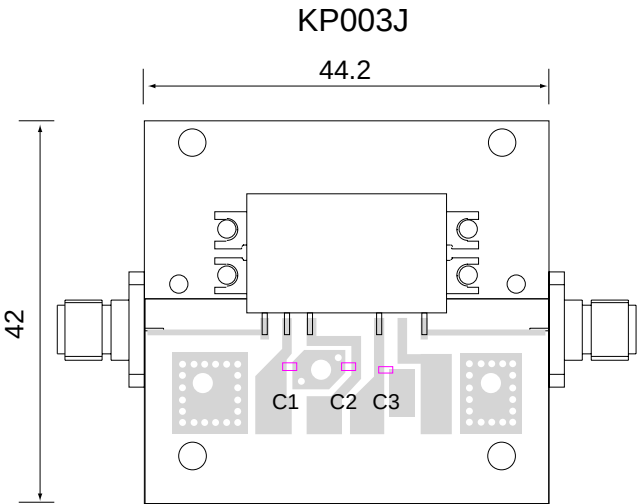
Nominal Variation of Lead Pitch : ± 0.3

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	0.1 μ F
C2,C3	1.0 μ F