Preliminary

SUMITOMO ELECTRIC INDUSTRIES, LTD.

00.05.10

P0420870H

800 MHz band

Power Amplifier Module

♦ Features

- 844 - 919 MHz frequency band
- Typical P1dB of 31 dBm
- Excellent IM3 of -58 dBc at 15 dBm output with low power consumption of 6.2 W
- Typical 30 dB power gain
- Power supplies of 10 V and -5 V
- Cost-effective metal package

♦ Applications

- Power Amplifier for use in base station systems of N-CDMA and smaller zone size of PDC booster

♦ Description

The P0420870H is a power amplifier module which achieves an excellent IM3 of -58 dBc at the output power of 12 dBm (S.C.L.) with a typical 30 dB gain at an 800MHz band, housed in a cost effective metal package. This power amplifier for base systems of N-CDMA or smaller zone size of the PDC booster is required a low 3rd order distortion because of amplifying several carriers at the same time. The P0420870H is designed to achieve the total output power of 15 dBm at IM3 of -58 dBc with a low power consumption of 6.2 W. It operates with 10 V and -5 V power supplies.

♦ *Absolute Maximum Ratings*

Case Temperature Tc=35 °C

Parameter	Symbol	Value	Units
DC Supply Voltage	Vd	11 *	V
	Vg	- 6	V
Input Power	Pin	5	dBm
Storage Temperature	Tstg	-40 to + 85	°C
Operating Case Temperature	Topt	-20 to + 80	°C

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

*Vg=-5 V

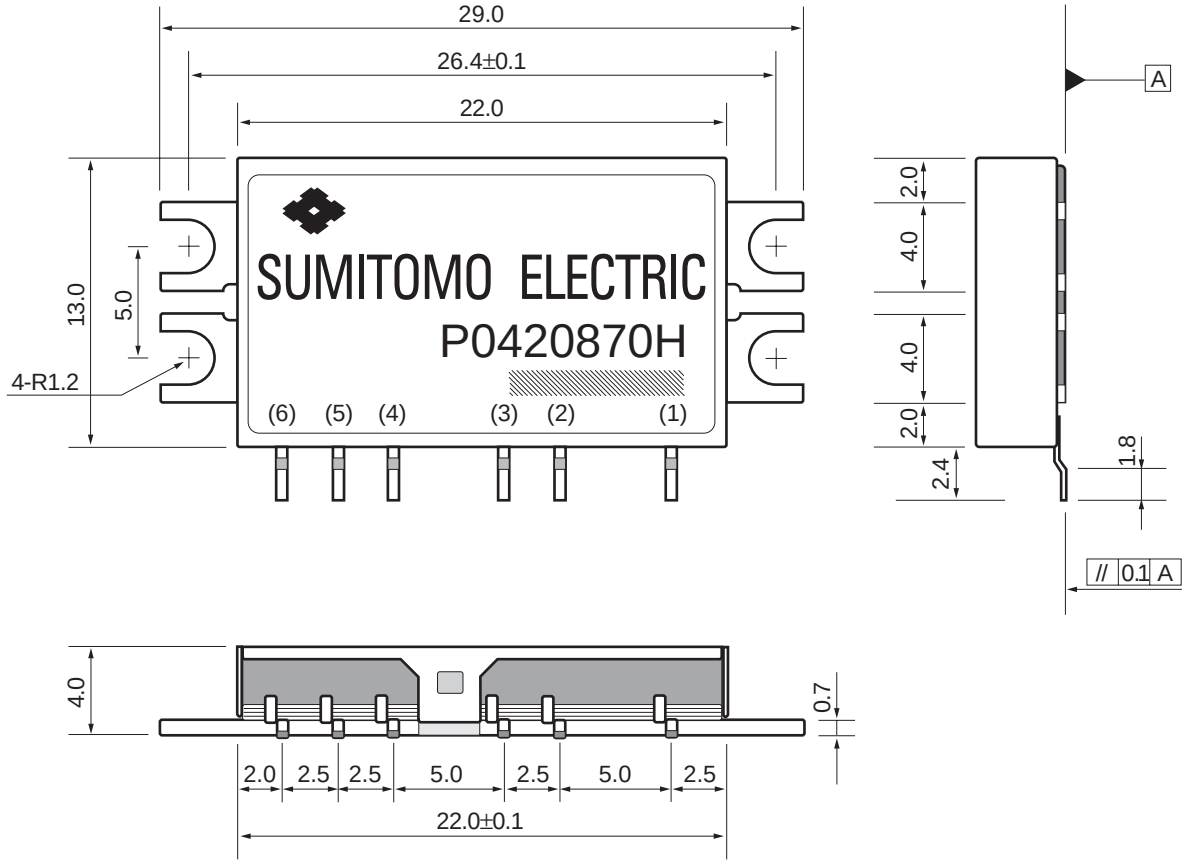
♦ *Electrical Specifications*

Case Temperature Tc=35 °C

Parameter	Symbol	Test Conditions	Value			Units
			Min.	Typ.	Max.	
Frequency	f		844	—	919	MHz
Supply Current (under operation)	Id	Pout=12 dBm* ∆f = 25 MHz Vd1=Vd2=10 V Vg1=Vg2=-5 V	—	620	700	mA
Gate Current	Ig		—	—	4	mA
Power Gain	Ga		27	30	33	dB
Input VSWR	—		—	—	3 : 0	—
Harmonic Distortion	2f0		—	—	-30	dBc
	3f0		—	—	-40	dBc
Third Order Intermodulation Ratio	I_{M3}		—	-58	-55	dBc

* Single Carrier Level

♦ *Package Drawing (Dimensions are mm)*



Lead Size : 0.25×0.5

▨ : Lot No.

Dimensions are mm (±0.3mm)

Nominal Variation of Lead Pitch : ±0.3

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)***