

# SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

SMA3107-

Silicon MMIC Wideband Amplifier

# Features

- High Gain : Gp=23.5dB typ. @1GHz
- Wideband response : fu=2.8GHz
- Low current : I<sub>CC</sub>=6mA typ.
- Port impedance : input/output  $50\Omega$

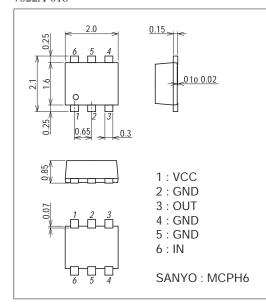
# **Specifications**

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply Voltage	V <sub>CC</sub>		5	V
Circuit Current	Icc		15	mA
Allowable Power Dissipation	PD		280	mW
Operating Temperature	Topr		-40 to +85	°C
Storage Temperature	Tstg		-55 to +150	°C

#### Package Dimensions

unit : mm (typ) 7022A-018



### Product & Package Information

Package

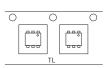
: MCPH6

• JEITA, JEDEC

: SC82, SC82A, SC88

• Minimum Packing Quantity : 3,000pcs/reel

#### Type of Taping: TL





SANYO Semiconductor Co., Ltd. http://semicon.sanyo.com/en/network

# Recommended Operating Conditions at Ta=25°C

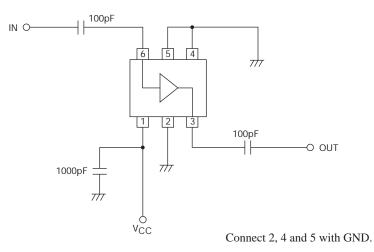
Parameter	Symbol	Conditions	Ratings			Unit
		Conditions	min	typ	max	Unit
Supply Voltage	VCC		2.7	3	3.3	V
Operating Ambient Temperature	Topr		-40	+25	+85	°C

# Electrical Characteristics at Ta= $25^{\circ}$ C, V<sub>CC</sub>=3V, Zs=ZL= $50\Omega$

Parameter	Symbol	Symbol Conditions	Ratings			Linit
	Symbol		min	typ	max	Unit
Circuit Current	ICC		4.3	6.0	7.7	mA
Power Gain	6.7	f=1GHz	21.0	23.5	26.0	dB
	Gp	f=2.2GHz	22.0	24.5	27.0	
Isolation	ISL	f=1GHz	33.0	38.0		dB
		f=2.2GHz	40.0	45.0		
Input Return Loss	RLin	f=1GHz	18.0	23.0		dB
		f=2.2GHz	10.0	13.0		
Output Return Loss	RLout	f=1GHz	27.0	32.0		dB
		f=2.2GHz	10.0	13.0		
Noise Figure	NF	f=1GHz		3.1	4.3	dB
		f=2.2GHz		3.6	4.3	
Gain 1dB Compression Output Power		f=1GHz	-8.5	-6.5		dBm
	Po(1dB)	f=2.2GHz	-11.5	-9.5		
Upper Limit Operating Frequency	fu	3dB down below flat gain at f =1GHz		2.8		GHz

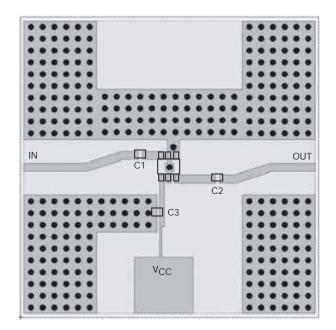
Note) Pay attention to handling since it is liable to be affected by static electricity due to the high frequency process adopted.

## Test Circuit

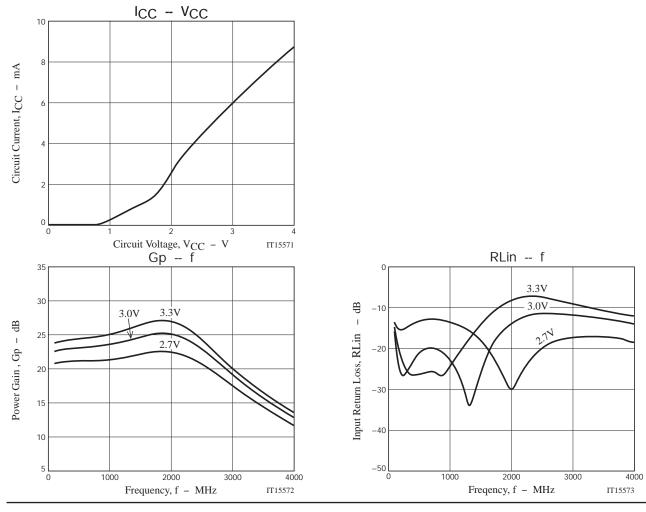


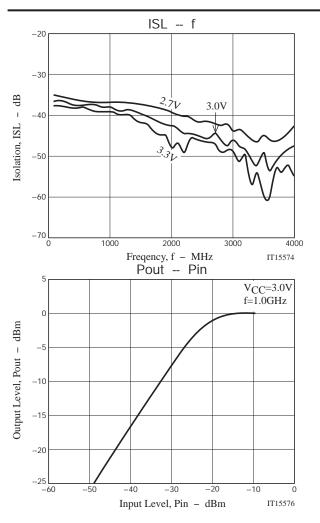
IT15570

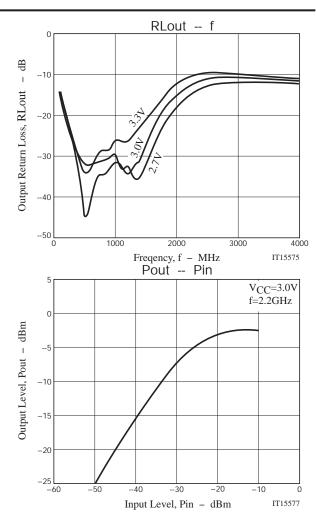
## **Evaluation Board**



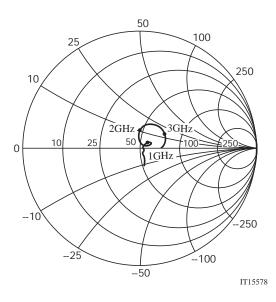
Symbol	Value
C1, C2	100pF
C3	1000pF



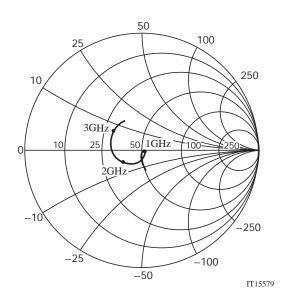




S Parameter S11



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