

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_{CC}=6mA typ.
- Port impedance : input/output 50Ω

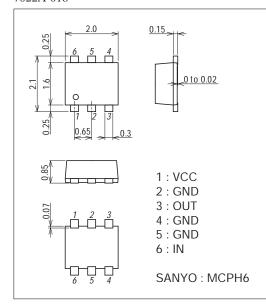
Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply Voltage	V _{CC}		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

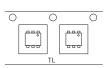
: MCPH6

• JEITA, JEDEC

: SC82, SC82A, SC88

• Minimum Packing Quantity : 3,000pcs/reel

Type of Taping: TL





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Recommended Operating Conditions at Ta=25°C

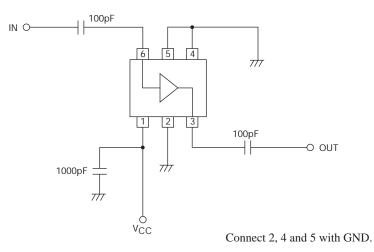
Parameter	Symbol	Conditions	Ratings			Unit
		Conditions	min	typ	max	Unit
Supply Voltage	VCC		2.7	3	3.3	V
Operating Ambient Temperature	Topr		-40	+25	+85	°C

Electrical Characteristics at Ta= 25° C, V_{CC}=3V, Zs=ZL= 50Ω

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

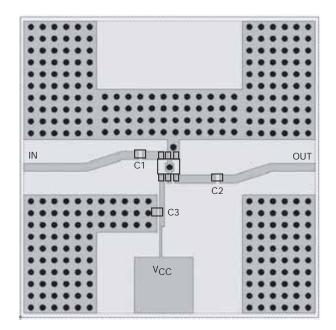
Note) Pay attention to handling since it is liable to be affected by static electricity due to the high frequency process adopted.

Test Circuit

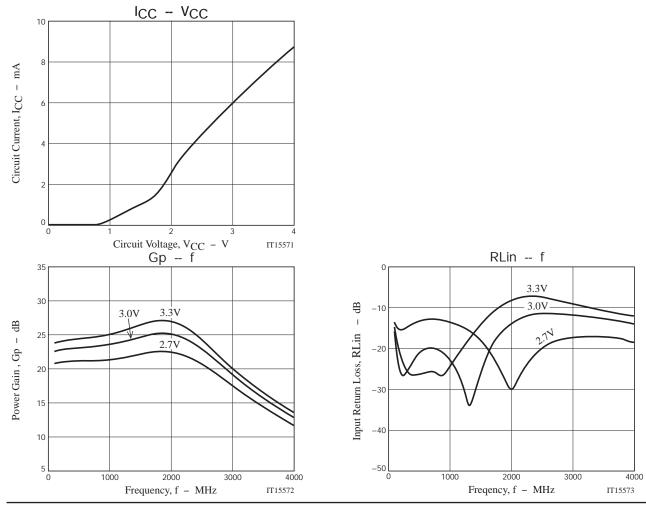


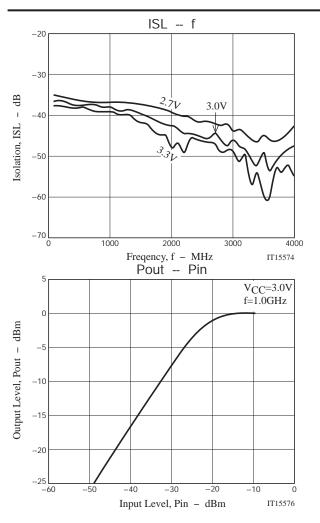
IT15570

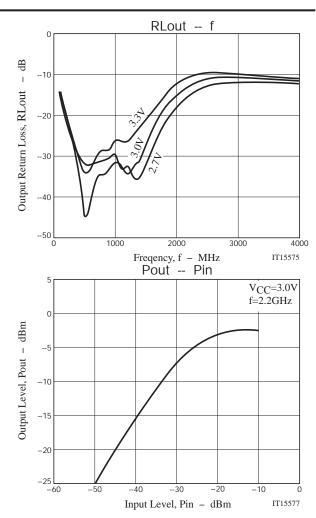
Evaluation Board



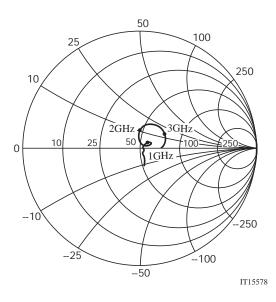
Symbol	Value
C1, C2	100pF
C3	1000pF



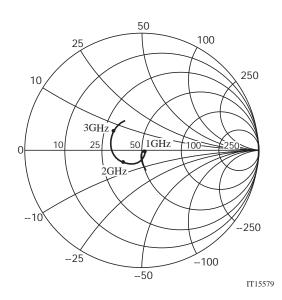




S Parameter S11



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