Ordering number : ENA1753

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

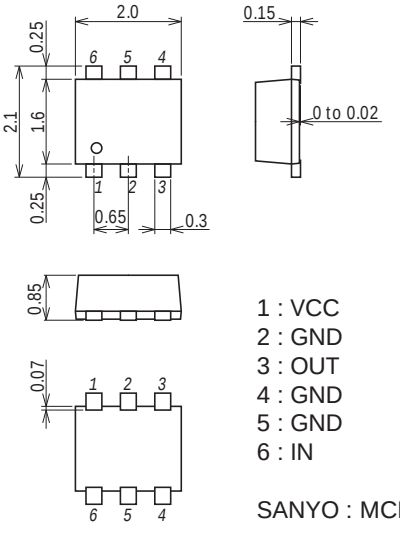
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply Voltage	V_{CC}		5	V
Circuit Current	I_{CC}		15	mA
Allowable Power Dissipation	P_D		280	mW
Operating Temperature	Topr		−40 to +85	°C
Storage Temperature	Tstg		−55 to +150	°C

Package Dimensions

unit : mm (typ)

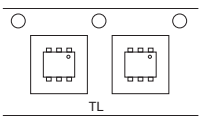
7022A-018



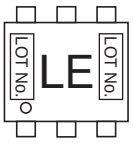
Product & Package Information

- Package : MCPH6
- JEITA, JEDEC : SC82, SC82A, SC88
- Minimum Packing Quantity : 3,000pcs/reel

Type of Taping: TL



Marking



Recommended Operating Conditions at Ta=25°C

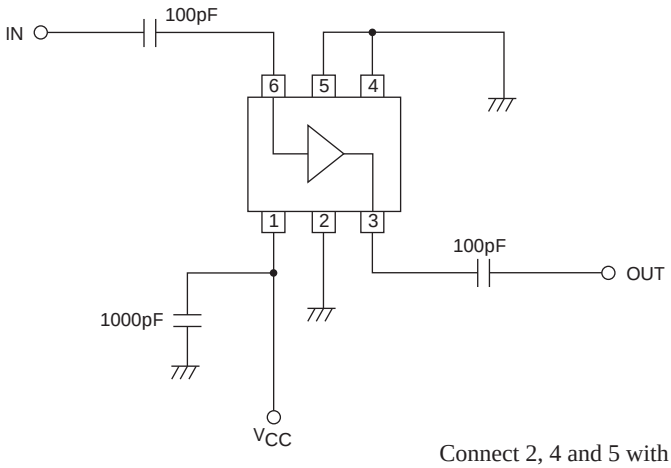
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply Voltage	V_{CC}		2.7	3	3.3	V
Operating Ambient Temperature	Topr		−40	+25	+85	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Circuit Current	I_{CC}		4.3	6.0	7.7	mA
Power Gain	Gp	f=1GHz	21.0	23.5	26.0	dB
		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	Po(1dB)	f=1GHz	−8.5	−6.5		dBm
		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.

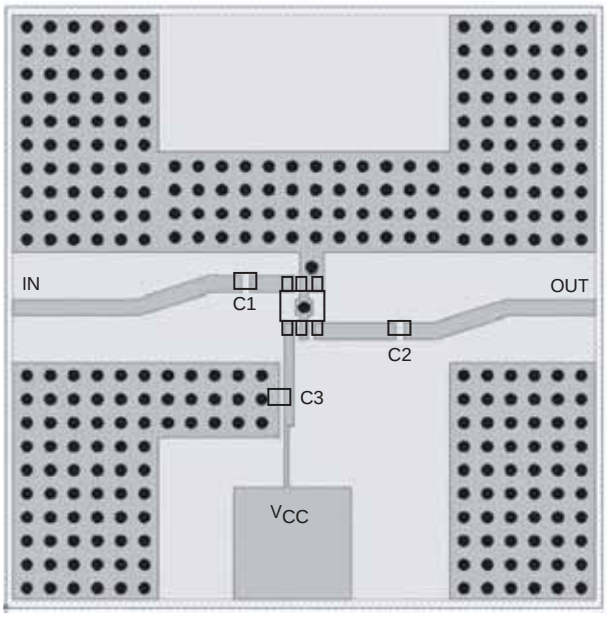
Test Circuit



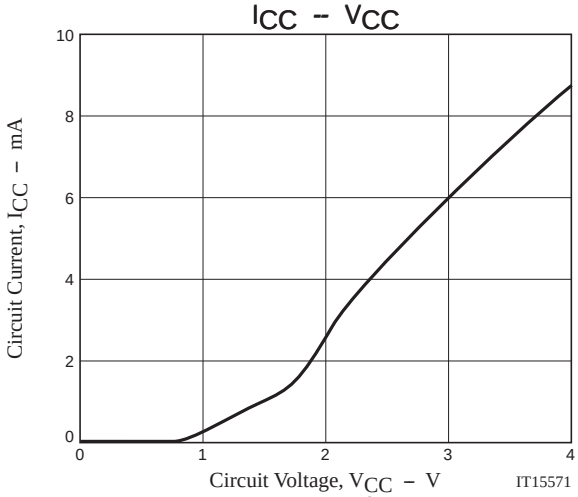
Connect 2, 4 and 5 with GND.

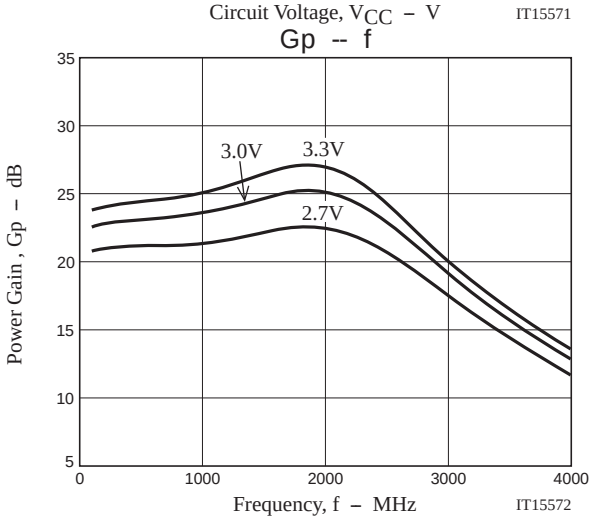
IT15570

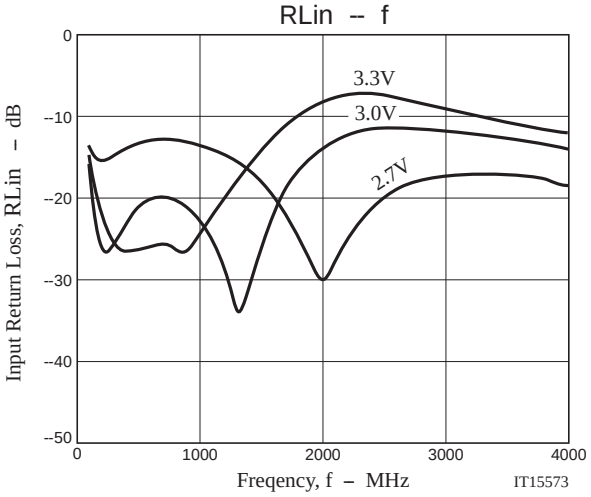
Evaluation Board

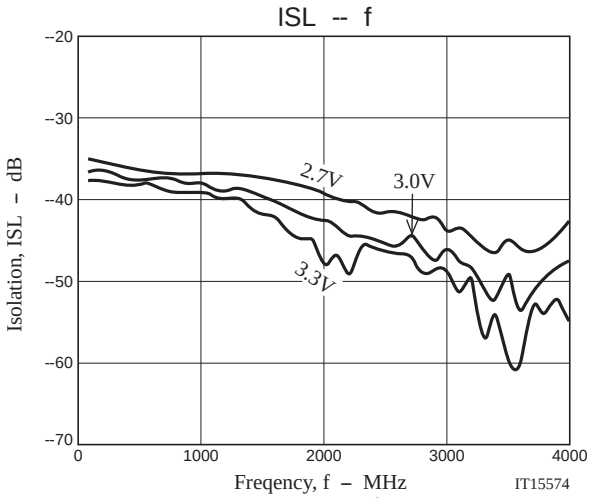


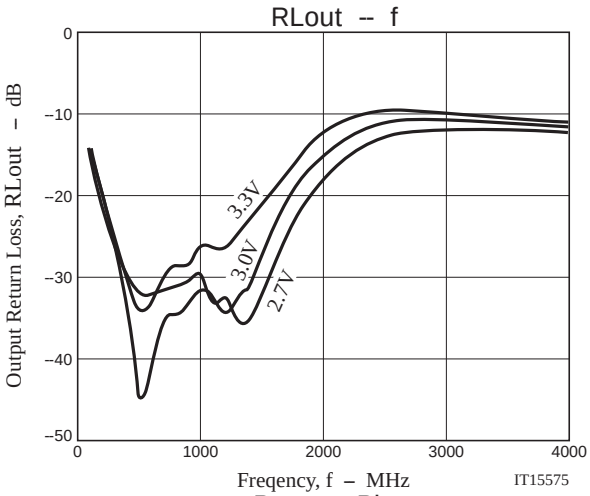
Symbol	Value
C1, C2	100pF
C3	1000pF

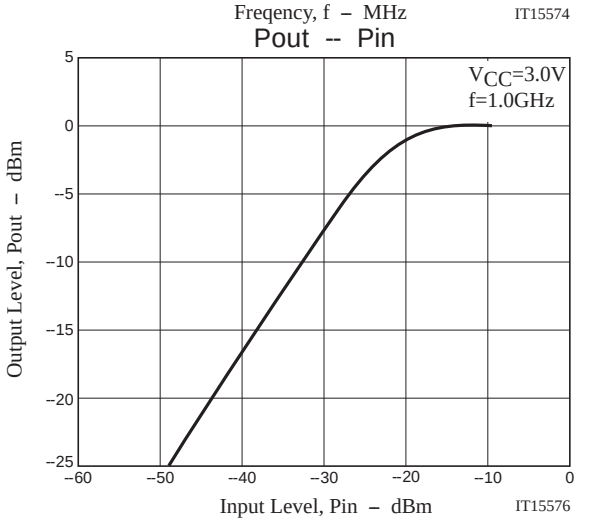


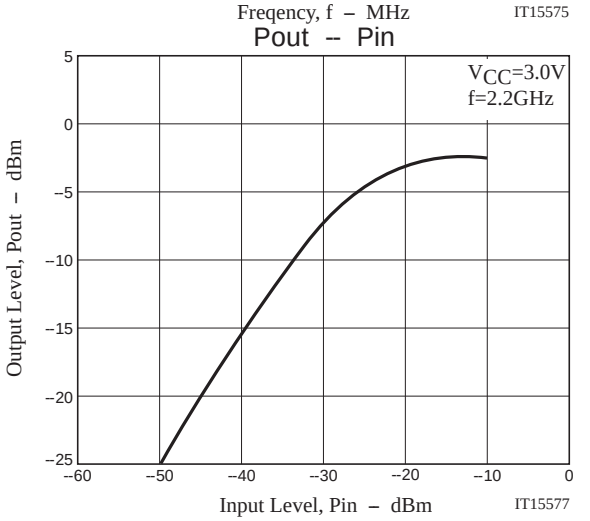






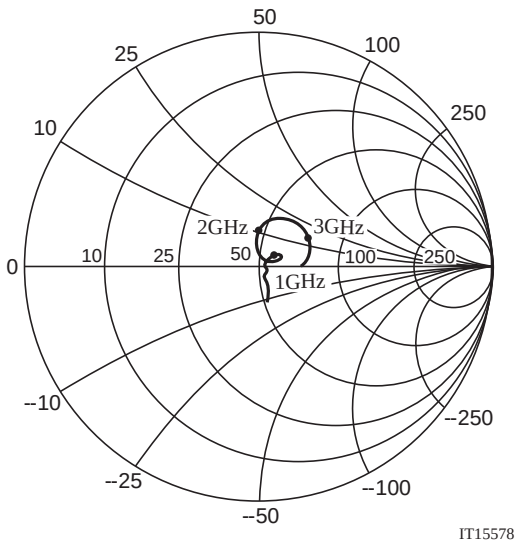




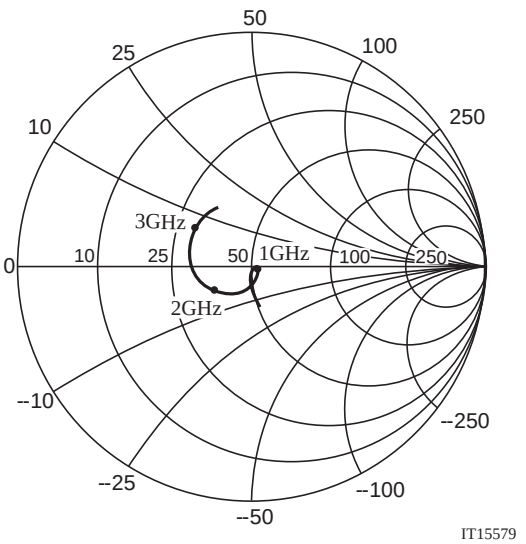


S Parameter

S11



S22



This catalog provides information as of June, 2010. Specifications and information herein are subject to change without notice.