



# SMA3107 — Silicon MMIC Wideband Amplifier

## Features

- High Gain :  $G_p=23.5\text{dB typ. @ 1GHz}$
- Wideband response :  $f_u=2.8\text{GHz}$
- Low current :  $I_{CC}=6\text{mA typ.}$
- Port impedance : input/output  $50\Omega$

## Specifications

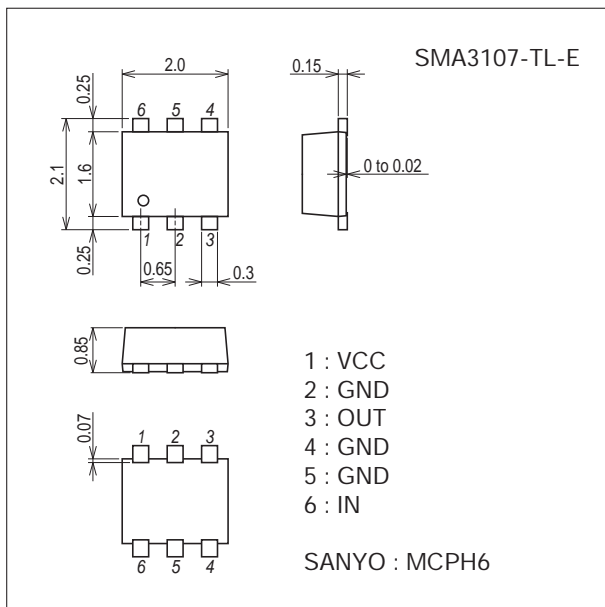
### Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

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	$T_{opr}$		-40 to +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

## Package Dimensions

unit : mm (typ)

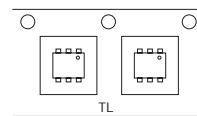
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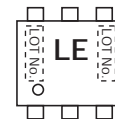
## Product & Package Information

- Package : MCPH6
- JEITA, JEDEC : SC-88, SC-70-6, SOT-363
- Minimum Packing Quantity : 3,000 pcs./reel

### Packing Type : TL



### Marking



# SMA3107

## Recommended Operating Condition at Ta=25°C

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

## Electrical Characteristics at Ta=25°C, VCC=3V, Zs=ZL=50Ω

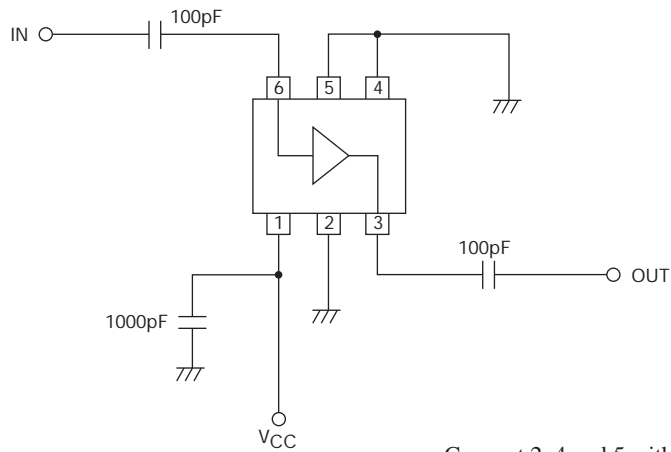
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Circuit Current	ICC		4.3	6.0	7.7	mA
Power Gain	Gp	f=1GHz	21.0	23.5	26.0	dB
		f=2.2GHz	22.0	24.5	27.0	
Isolation	ISL	f=1GHz	33.0	38.0		dB
		f=2.2GHz	40.0	45.0		
Input Return Loss	RLin	f=1GHz	18.0	23.0		dB
		f=2.2GHz	10.0	13.0		
Output Return Loss	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	-10	-8		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.

## Ordering Information

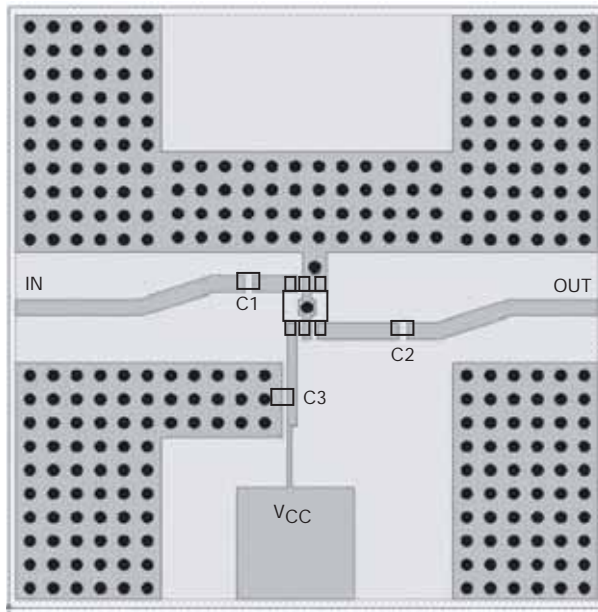
Device	Package	Shipping	memo
SMA3107-TL-E	MCPH6	3,000pcs./reel	Pb Free

## Test Circuit

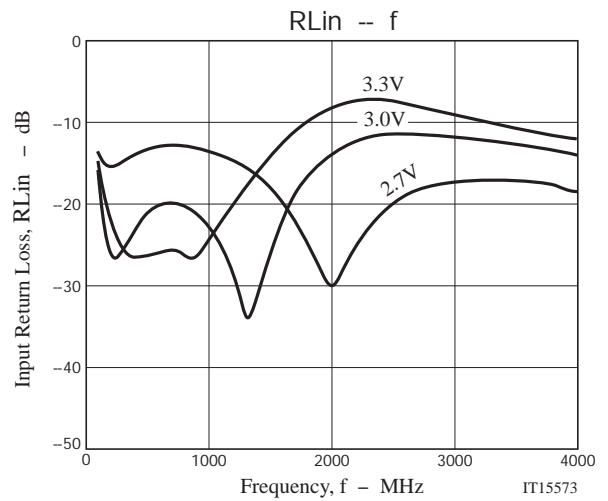
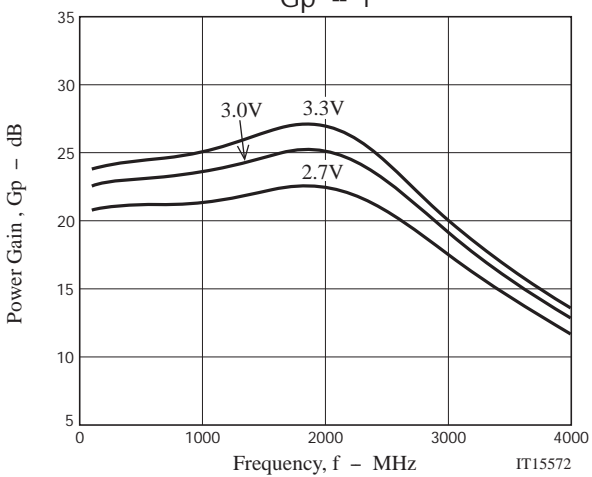
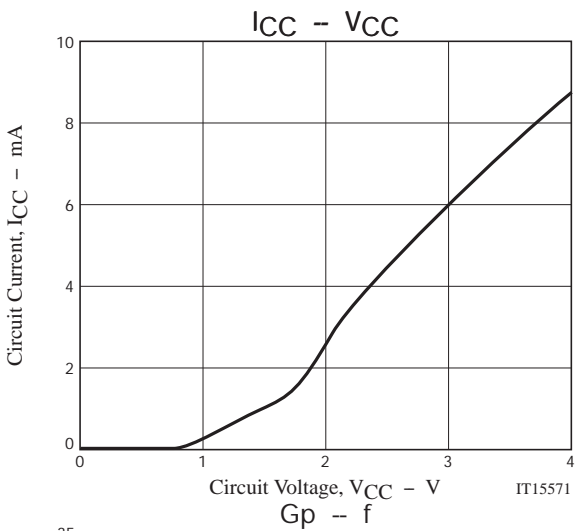


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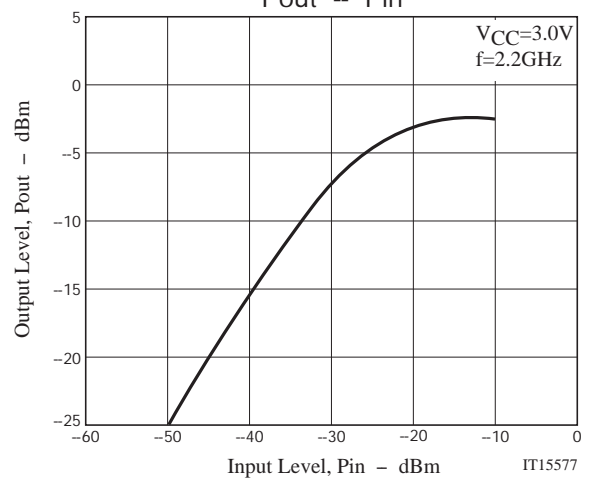
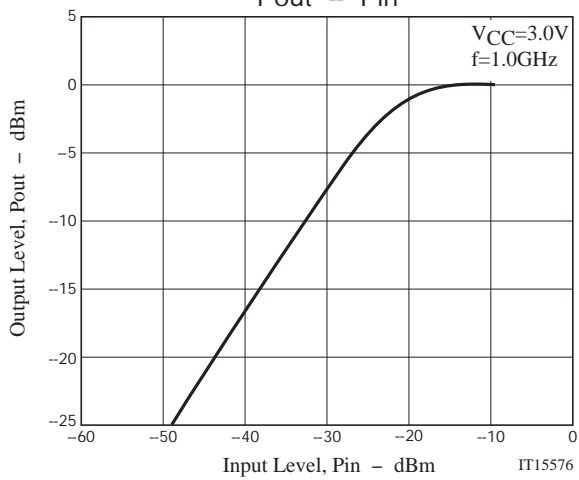
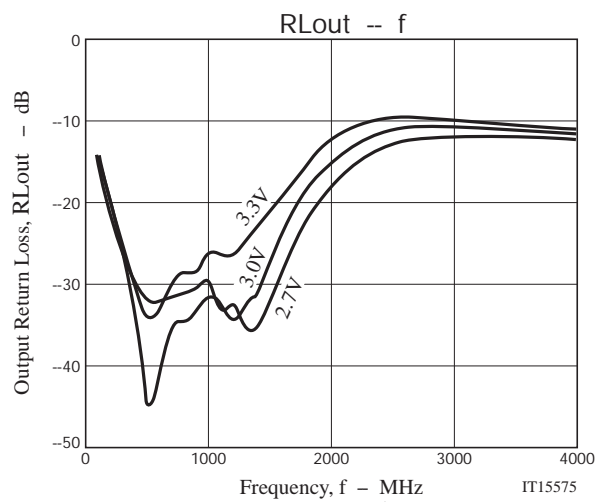
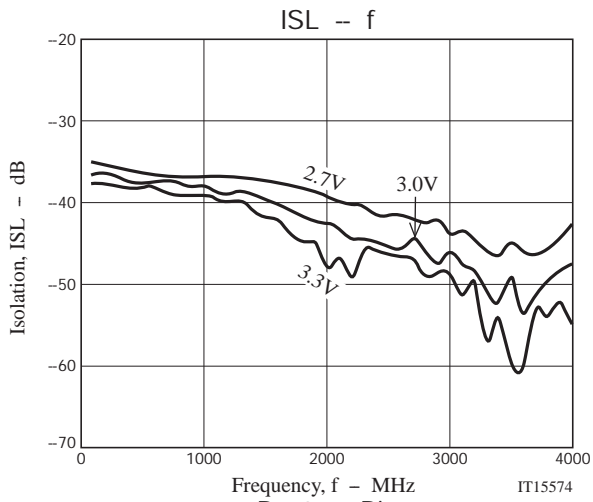
Evaluation Board



Symbol	Value
C1, C2	100pF
C3	1000pF

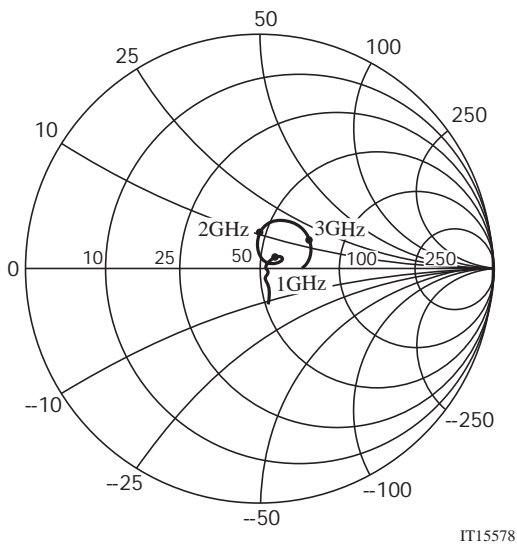


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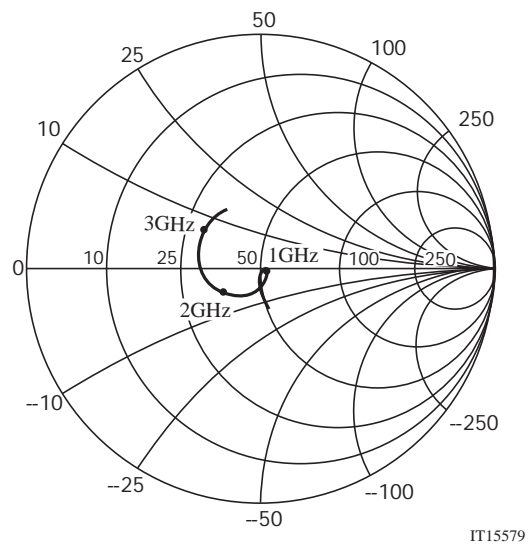


## S Parameter

S11



S22



# SMA3107

## Embossed Taping Specification

SMA3107-TL-E

### 1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
MCPH6	MCP4	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

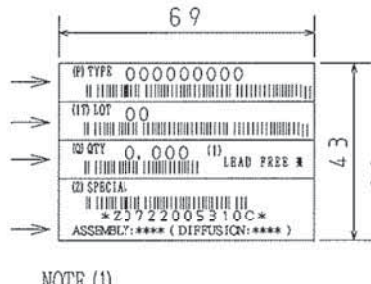
#### Packing method



Reel label

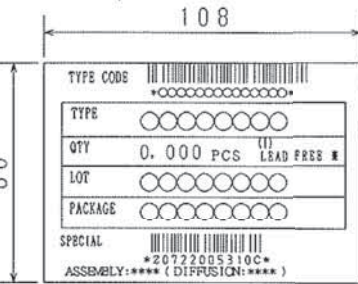
Type No.  
LOT No.  
Quantity  
Origin

Reel label, Inner box label  
(unit:mm)



Outer box label

(It is a label at the time of factory shipments. The form of a label may change in physical distribution process.)



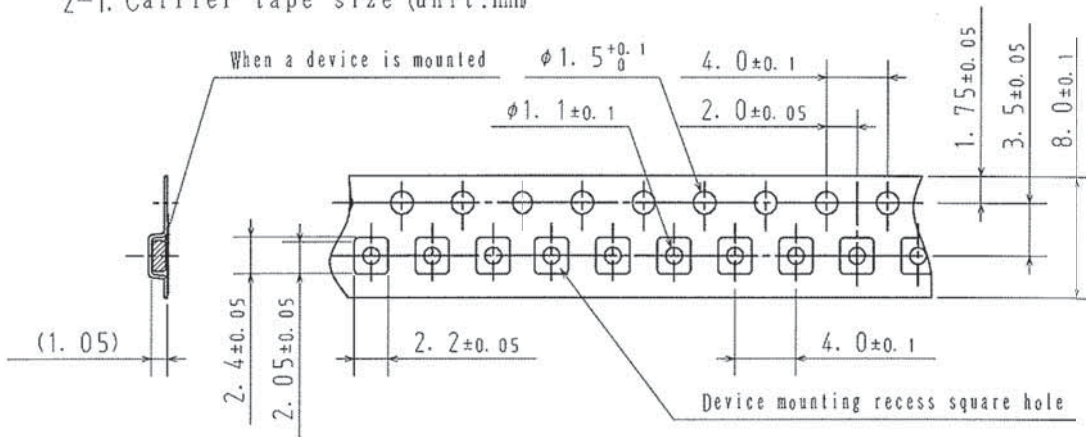
NOTE (1)

The LEAD FREE \* description shows that the surface treatment of the terminal is lead free.

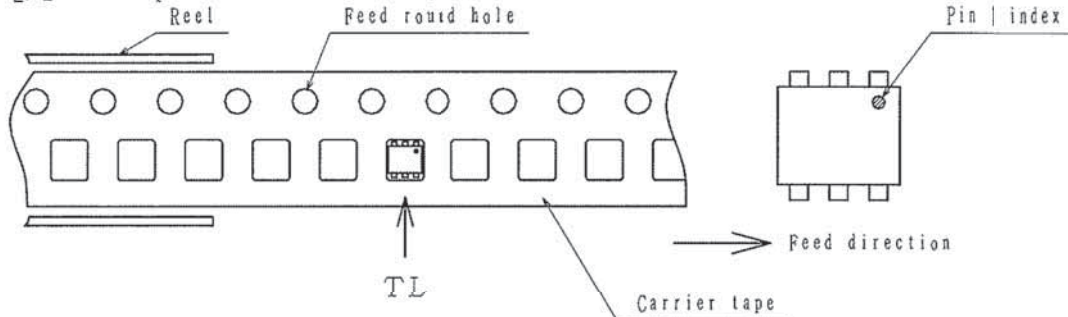
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

### 2. Taping configuration

#### 2-1. Carrier tape size (unit:mm)



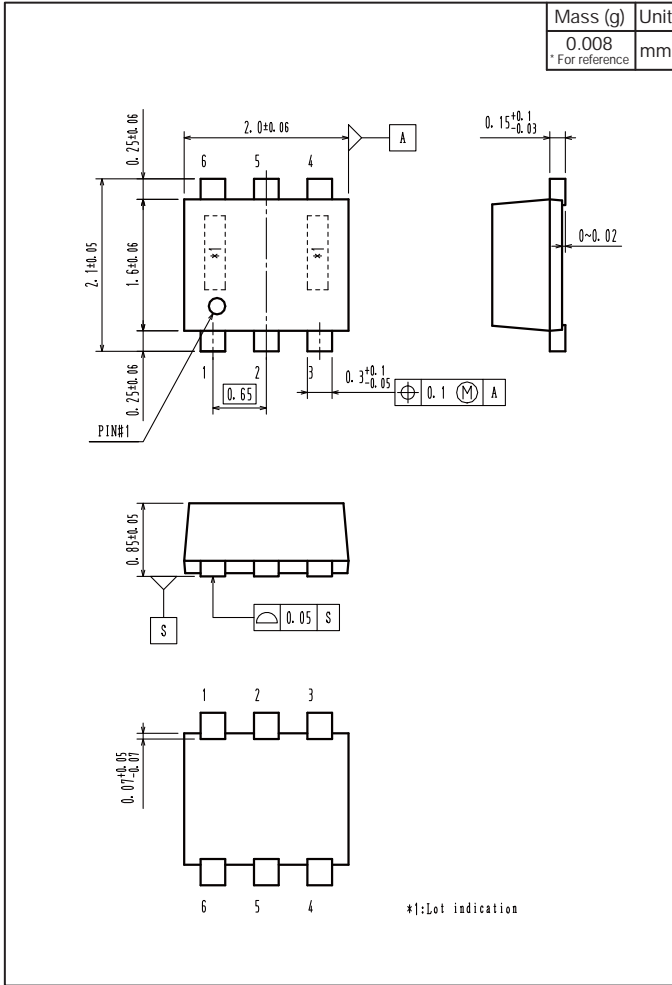
#### 2-2. Device placement direction



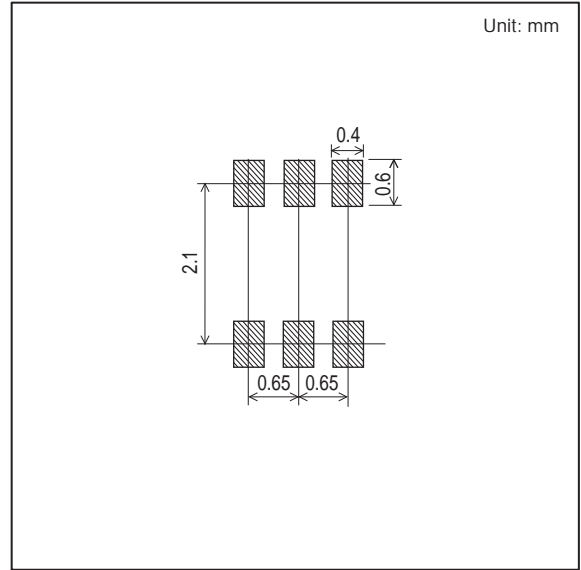
Those with pin | index on the feed hole side.....TL

# SMA3107

## Outline Drawing SMA3107-TL-E



## Land Pattern Example



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