Product Features

- Wideband Flat Gain to 1.2GHz
- Higher Gain: 19 typ.
- Higher linearity: 30dBm @ 500MHz/5dBm 2tone
- SOT-89 package
- -58dBc CSO 135 Channels @ +15dBmV/ch
- -80dBc CTB 135 Channels @ +15dBmV/ch
- -81dBc XMD 135 Channels @ +15dBmV/ch

Application

- Low Noise Amplifier forCATV, Satellite
- Cable Modem
- FTTH (G-PON, GE-PON)
- Optical node

Description

OEI Technologies' SG106 is a flat gain, high linearity, low noise, 19 dBm Gain Block with good OIP3 achieved through the use of 0.5um GaAs Enhancement-mode PHEMT process.SG106 is designed as low cost drive amplifiers for many applications including FTTH, CATV System.

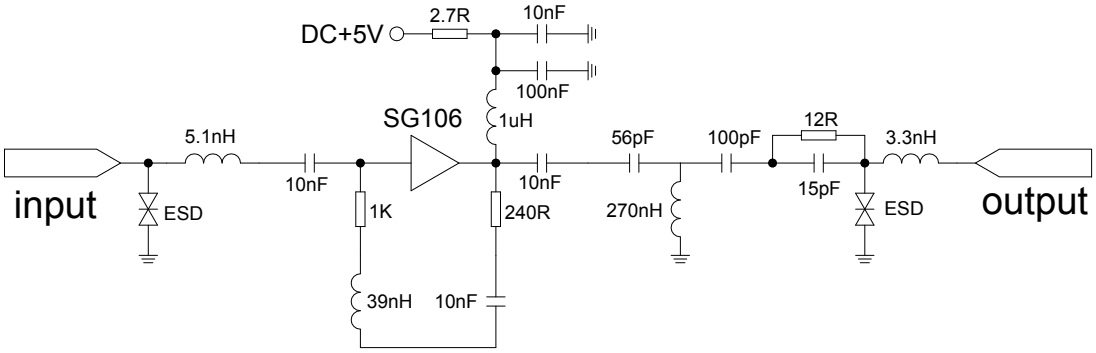
Specifications

PARAMETER		UNIT	MIN	TYP	MAX	Condition
Frequency		MHz	45		1218	
Gain		dB		19		45MHz ~ 1218MHz
				21		30MHz ~ 1000MHz
						5MHz ~ 100MHz
Gain Flatness		dB		0.7		45MHz ~ 1218MHz
Input Return Loss		dB		-18		45MHz ~ 550MHz
				-12		550MHz ~ 1218MHz
Output Return Loss		dB		-18		45MHz ~ 550MHz
				-16		550MHz ~ 1218MHz
Output IP3		dBm		32		At 500MHz/5dBm 2tone
1dB Compression Point		dBm		17		At 500MHz
Noise Figure		dB		1.2	2	45MHz ~ 1218MHz
CSO	45 ~ 1218MHz	dBc			55	135 channel, +15dBmV/ch
CTB		dBc			75	135 channel, +15dBmV/ch
XMOD		dBc			77	135 channel, +15dBmV/ch
DC Current		mA		54		Vdd = 5.0V

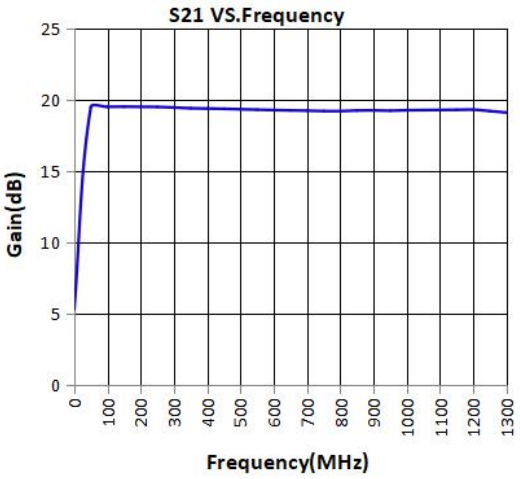
NOTE

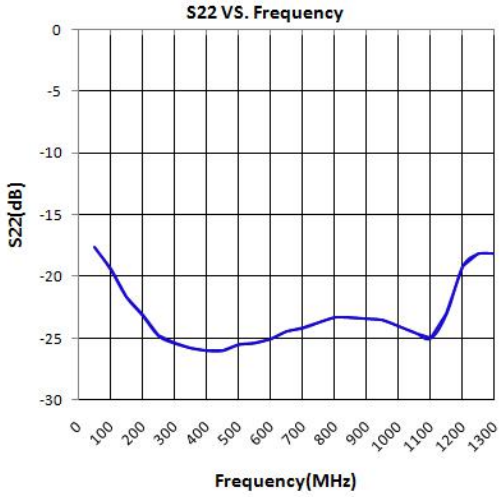
1. Test conditions:Test Freq = 500MHz, T=25℃, Vdd=5V, 75Ω system

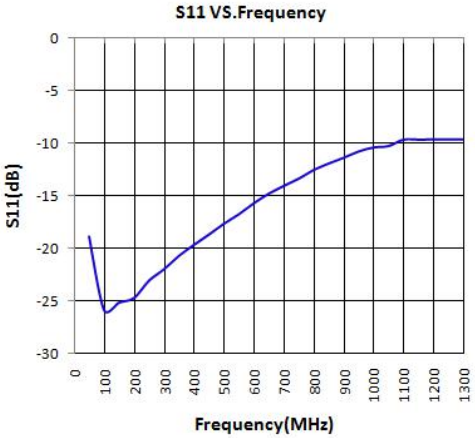
Appication Circuit:45MHz-1218MHz, 75ohm System

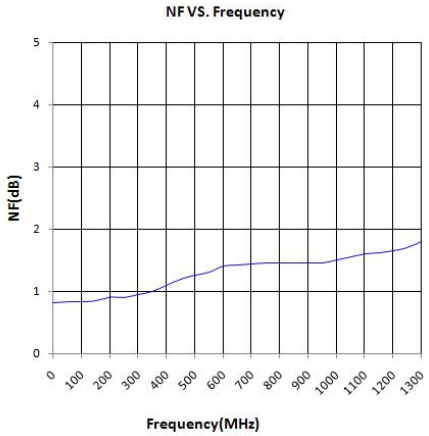


Typical RF Performance :V_{DD}=5V, I_{DS}=54mA, T=25℃,75ohm System

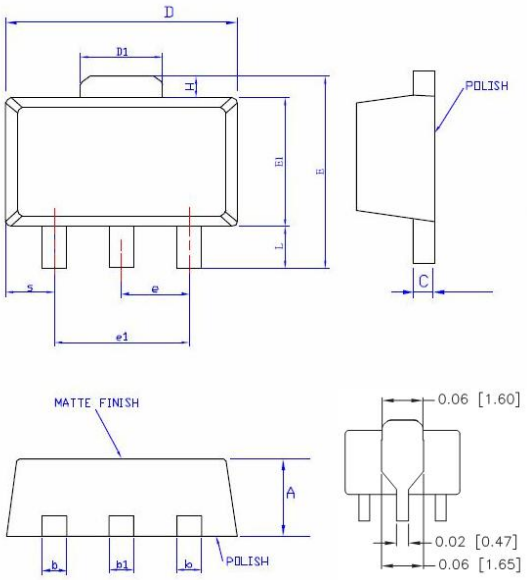








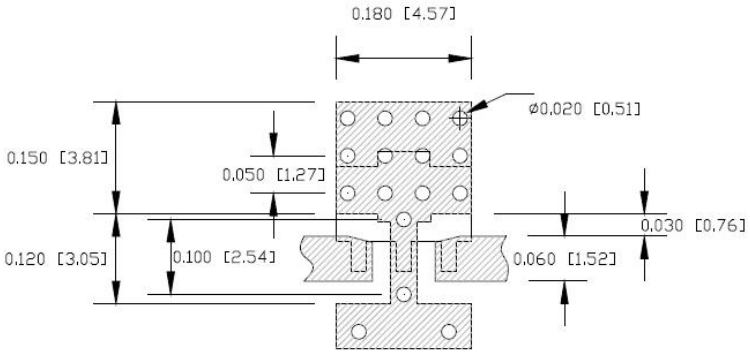
Package DimensionUnits：inch [millimeter]



SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.40	1.50	1.60	0.055	0.059	0.063
L	0.89	1.04	1.20	0.0350	0.041	0.047
b	0.36	0.42	0.48	0.014	0.016	0.018
b1	0.41	0.47	0.53	0.016	0.018	0.020
C	0.38	0.40	0.43	0.014	0.015	0.017
D	4.40	4.50	4.60	0.173	0.177	0.181
D1	1.40	1.60	1.75	0.055	0.062	0.069
E	3.94	—	4.25	0.155	—	0.167
E1	2.40	2.50	2.60	0.094	0.098	0.102
e1	2.90	3.00	3.10	0.114	0.118	0.122
H	0.35	0.40	0.45	0.014	0.016	0.018
S	0.65	0.75	0.85	0.026	0.030	0.034
e	1.40	1.50	1.60	0.054	0.059	0.063

For informational purpose only and is subject to change without notice

PCB Mounting Information



NOTES:

1. Dimensions are in inch [millimeter].
2. Use 1 oz. copper minimum for top and bottom layer metal.
3. Vias are required under GND(2,4) pin for proper RF/DC grounding and thermal dissipation. Via holes could reduce lead inductance as close to ground as possible.
4. Ensure good package backside paddle solder attach for reliable operation and best electrical performance.