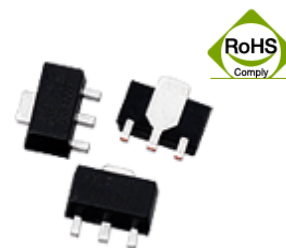


Product Features

- 500 ~ 3000MHz
- GaAs E-pHEMT
- 41dBm Output IP3
- 20dB Gain at 900MHz
- 29dBm P1 dB
- SOT-89 SMT Package
- Single +5V Supply
- Pb Free / RoHS Standard

Application

- Cellular, CDMA, W-CDMA, Wimax Drive or Pre-drive Amplifier
- High Linearity Drive Amplifier



Package Type: SOT-89

Description

AE663 is a drive or pre-drive amplifier designed with GaAs E-pHEMT in a low cost SOT-89 package.

This E-pHEMT amplifier is designed as driver devices for infrastructure equipment in the 500~3000MHz Wireless technologies such as Cellular, GSM, PCS, CDMA, W-CDMA, Wibro, Bluetooth, Wimax.

Specifications

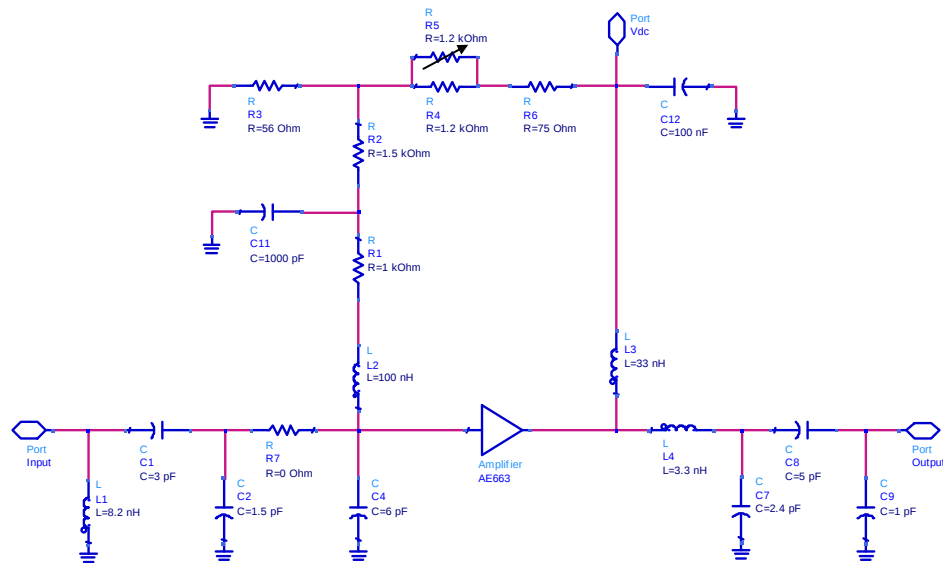
PARAMETER	Units	Min	Typ	Max
Frequency Range	MHz		500- 3000	
Gain (S_{21})	dB	18	20	
Input Return Loss (S_{11})	dB		-10	
Output Return Loss (S_{22})	dB		-10	
Output 3 rd Order Intercept Point (OIP3)	dBm	38	41	
Output 1dB compression Point (P_{1dB})	dBm	26.5	28.5	
Noise Figure	dB		2.5	3.5
DC Operating Current	mA	180	220	260
Supply Voltage	V		+5	

Test Condition

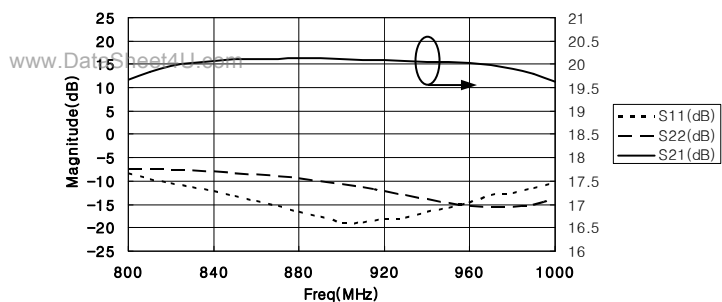
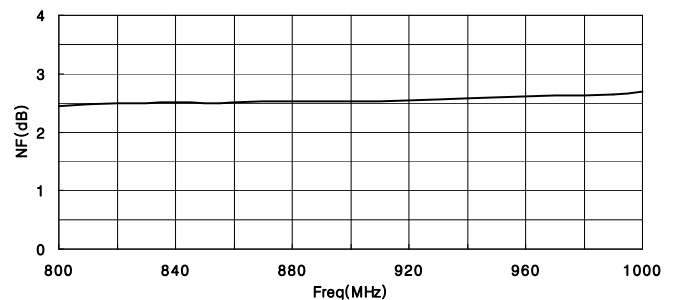
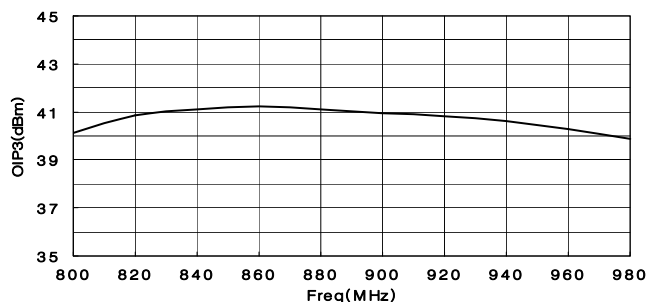
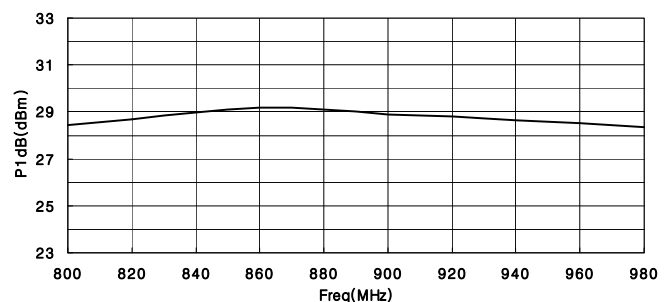
- ① 900MHz, Vdd= +5V at 25°C
- ② OIP3 is measured with two tones, at an output power of +15dBm/tone separated by 1MHz.

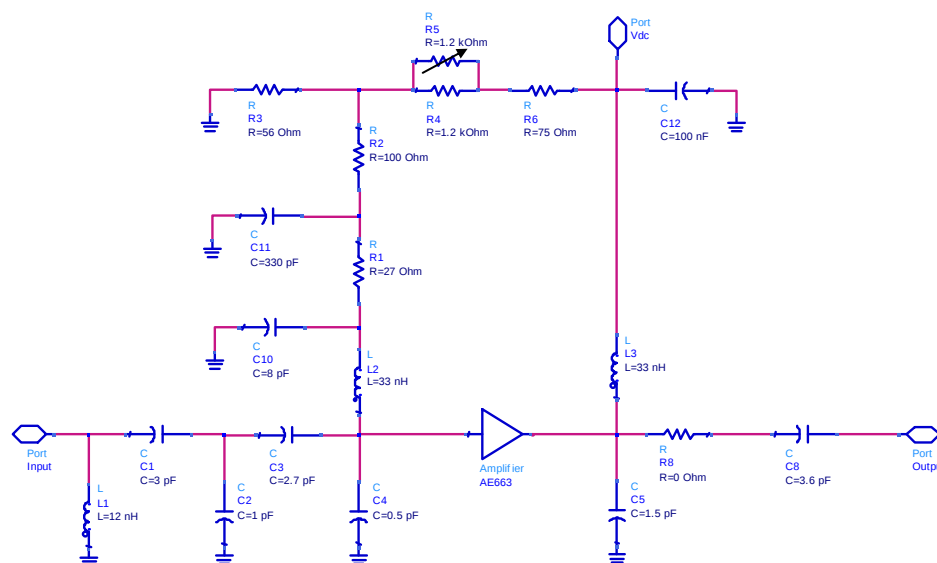
Absolute Maximum Ratings

PARAMETER	Rating	Remark
Operating Case Temperature (°C)	-40 ~ 85	
Storage Temperature (°C)	-50 ~ 125	
Drain-Source Voltage (V)	+7	

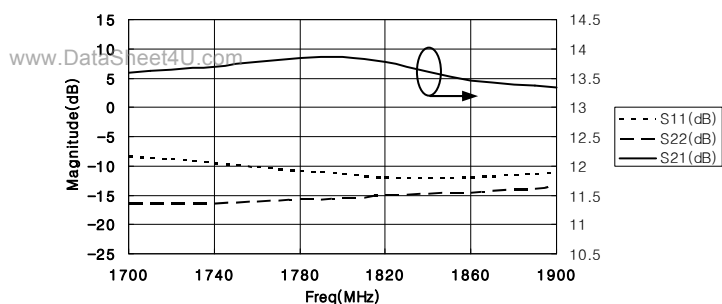
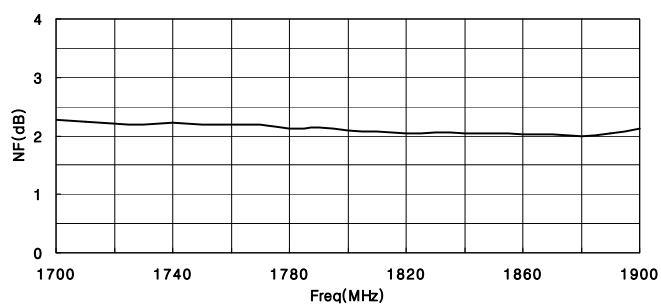
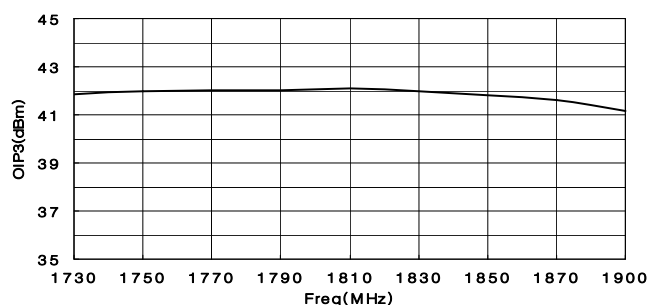
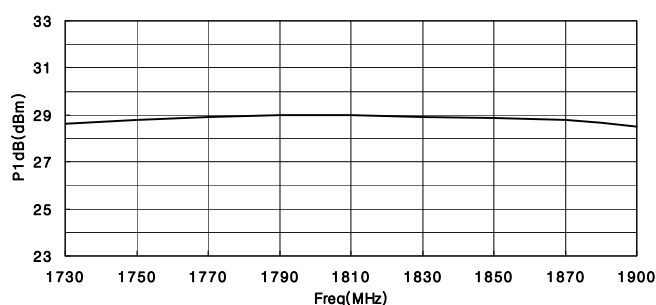
Application Circuit : 900MHz**Cell, GSM, CDMA (824~960MHz) Performance Data ($V_d=5V$, $T_c=25^\circ C$)**

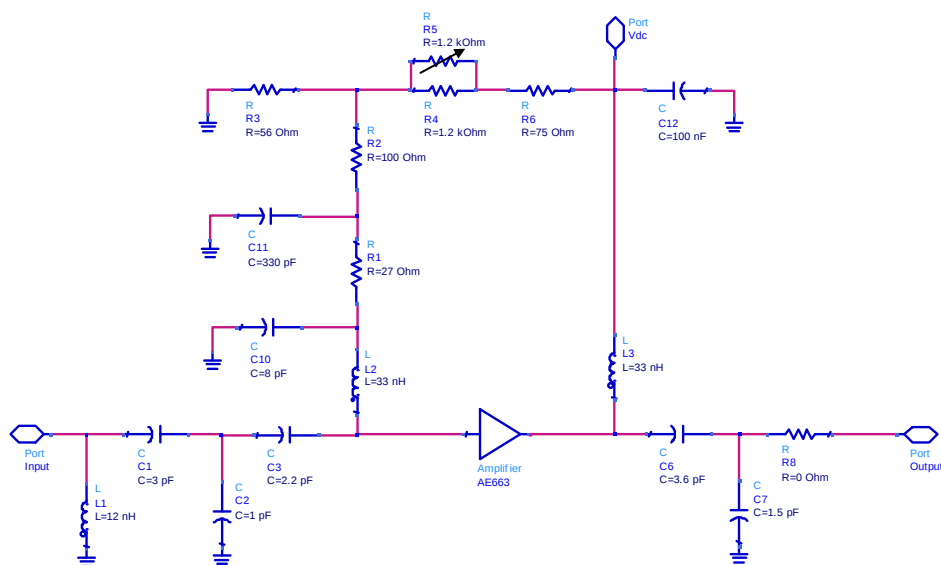
Items	Data	Remarks	Items	Data	Remarks
Gain	20.0 dB	824~960MHz	NF	3 dB	824~960MHz
OIP3	41 dBm	824~960MHz	P1dB	28 dBm	824~960MHz
CDMA 1FA	21.5 dBm	824~960MHz			

S-Parameter vs. Frequency**Noise Figure vs. Frequency****OIP3 vs. Frequency****P1dB vs. Frequency**

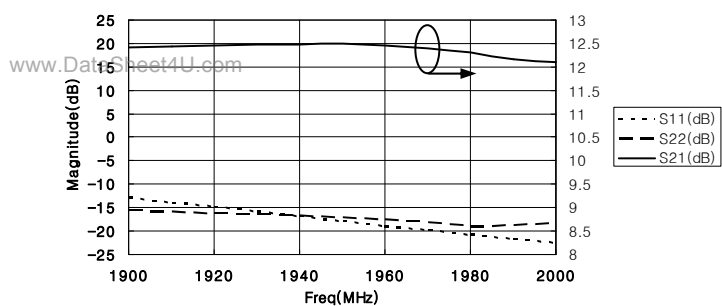
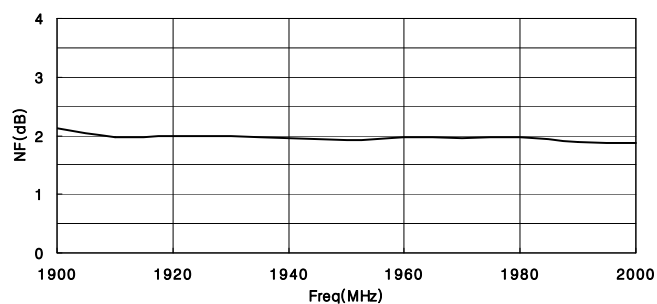
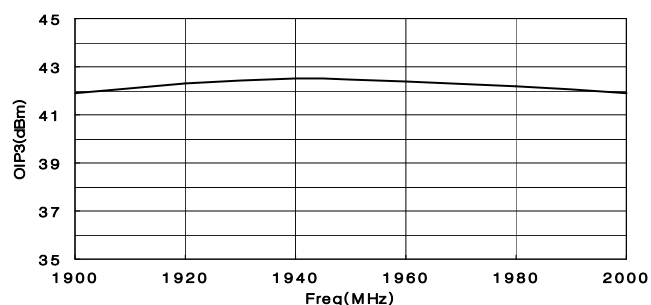
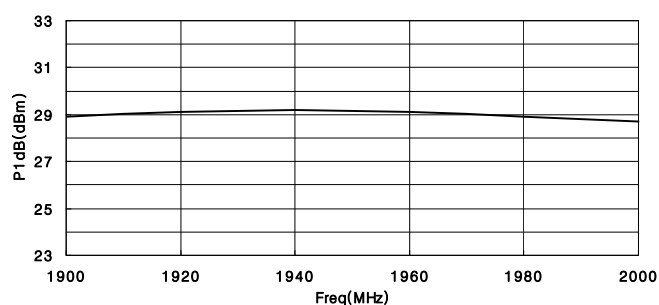
Application Circuit : 1800MHz**PCS, CDMA (1750~1870MHz) Performance Data ($V_d=5V$, $T_c=25^\circ C$)**

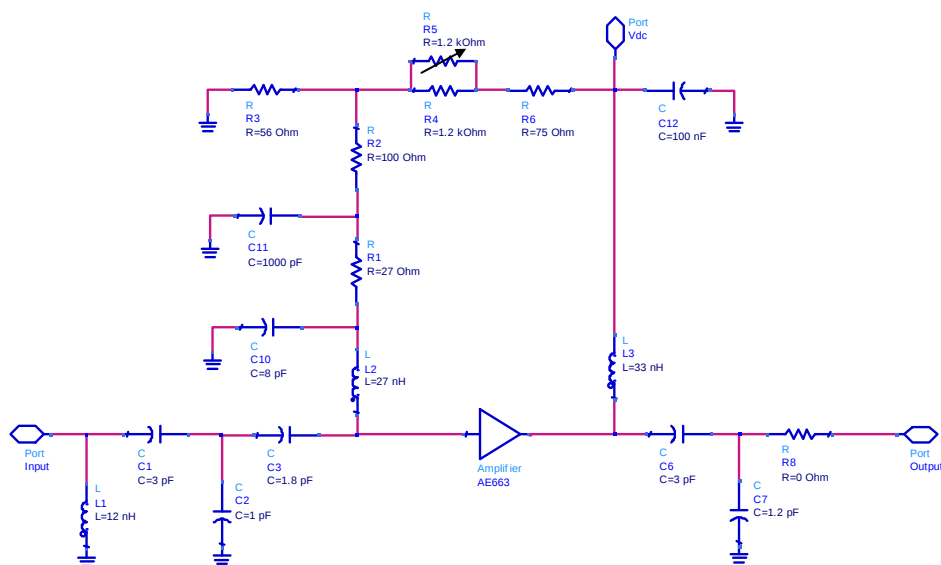
Items	Data	Remarks	Items	Data	Remarks
Gain	14 dB	1750~1870MHz	NF	2.5 dB	1750~1870MHz
OIP3	42 dBm	1750~1870MHz	P1dB	28 dBm	1750~1870MHz
CDMA 1FA	19.5 dBm	1750~1870MHz			

S-Parameter vs. Frequency**Noise Figure vs. Frequency****OIP3 vs. Frequency****P1dB vs. Frequency**

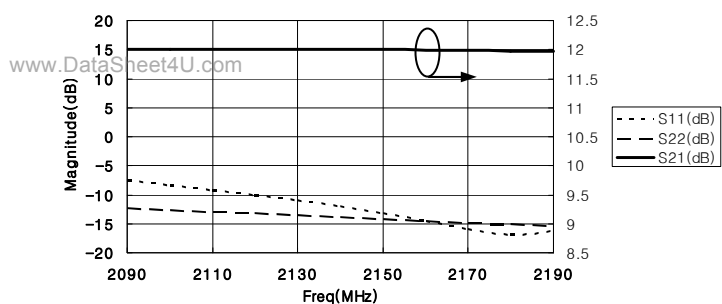
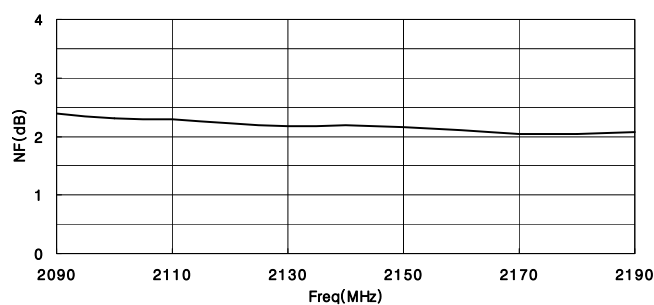
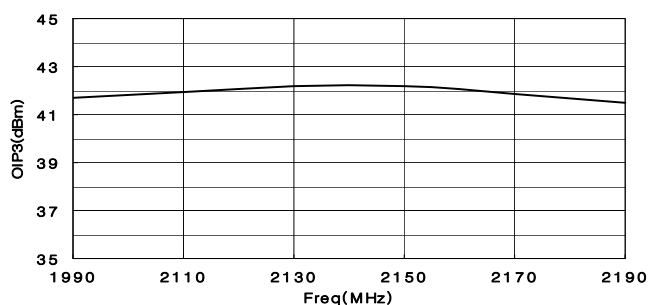
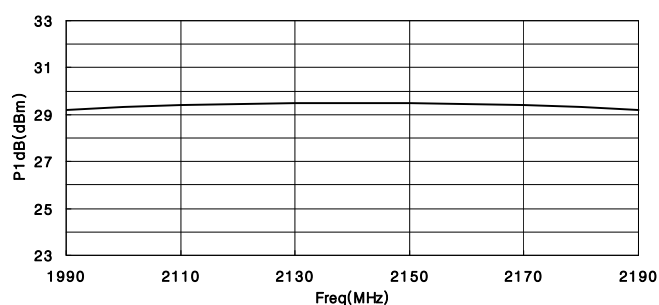
Application Circuit : 1900MHz**IMT, WCDMA (1920~1980MHz) Performance Data ($V_d=5V$, $T_c=25^\circ C$)**

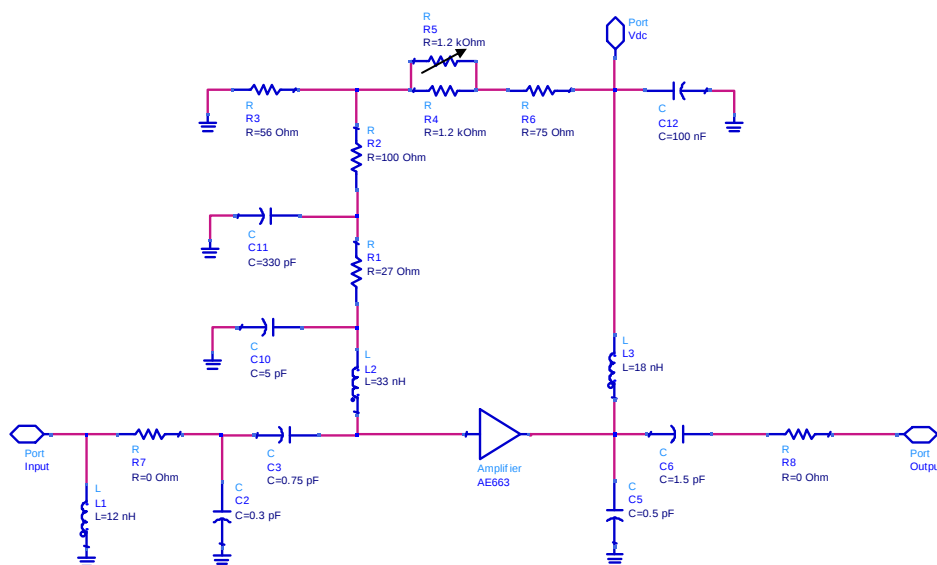
Items	Data	Remarks	Items	Data	Remarks
Gain	12.5 dB	1920~1980MHz	NF	2.5 dB	1920~1980MHz
OIP3	42 dBm	1920~1980MHz	P1dB	28 dBm	1920~1980MHz
WCDMA 1FA	19.5 dBm	1920~1980MHz	WCDMA 4FA	17.5 dBm	1920~1980MHz

S-Parameter vs. Frequency**Noise Figure vs. Frequency****OIP3 vs. Frequency****P1dB vs. Frequency**

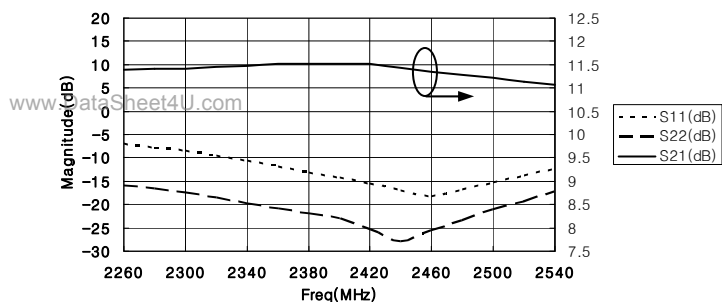
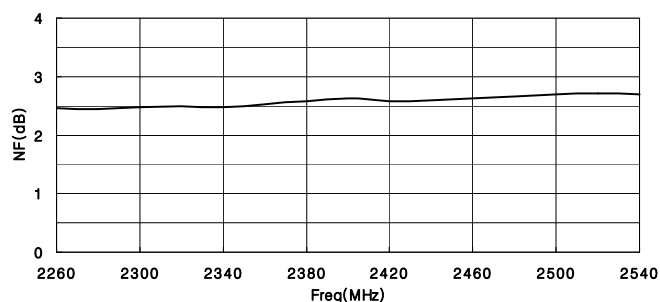
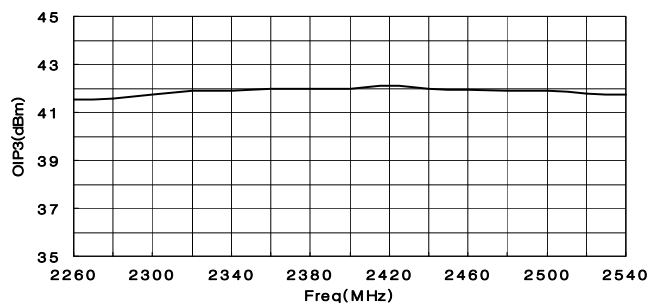
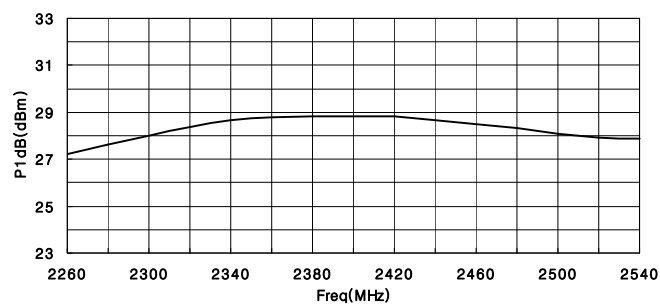
Application Circuit : 2100MHz**IMT, WCDMA (2110~2170MHz) Performance Data ($V_d=5V$, $T_c=25^\circ C$)**

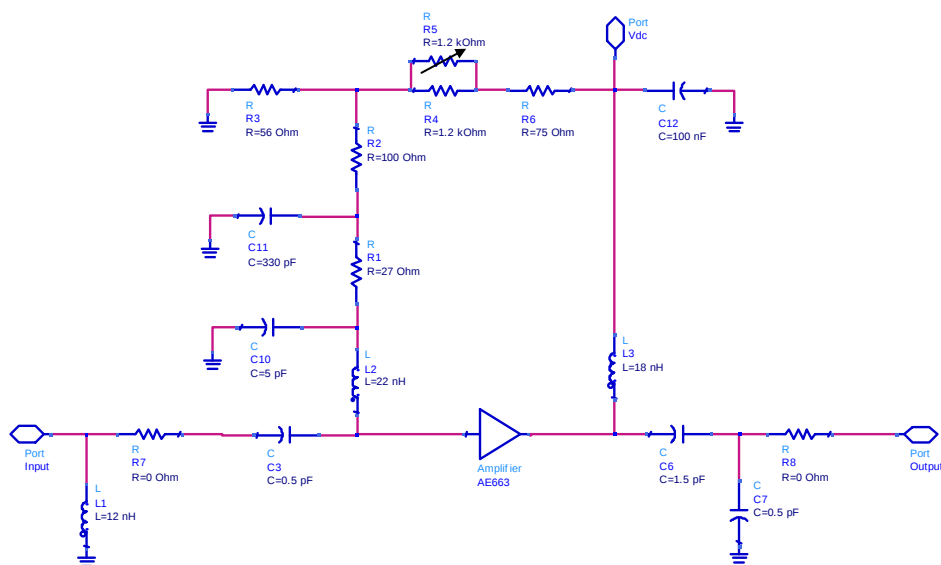
Items	Data	Remarks	Items	Data	Remarks
Gain	12 dB	2110~2170MHz	NF	2.5 dB	2110~2170MHz
OIP3	42 dBm	2110~2170MHz	P1dB	28 dBm	2110~2170MHz
WCDMA 1FA	19.5 dBm	2110~2170MHz	WCDMA 4FA	17.5 dBm	2110~2170MHz

S-Parameter vs. Frequency**Noise Figure vs. Frequency****OIP3 vs. Frequency****P1dB vs. Frequency**

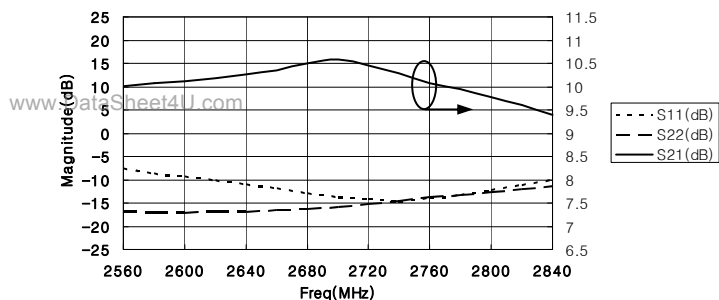
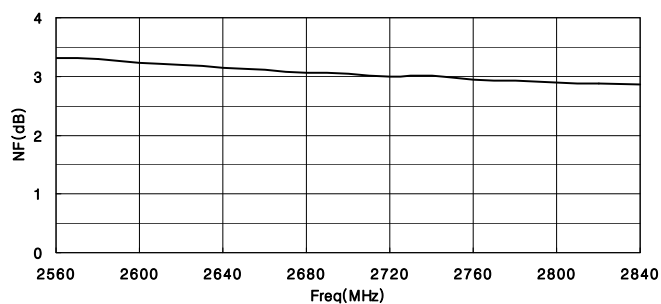
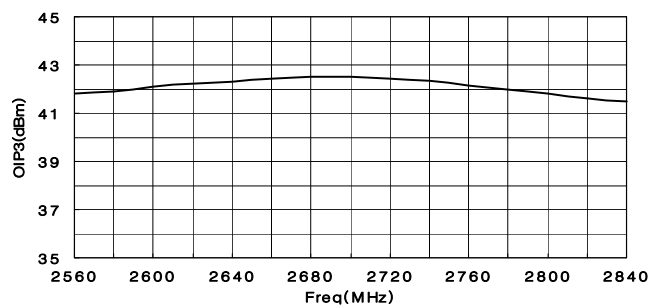
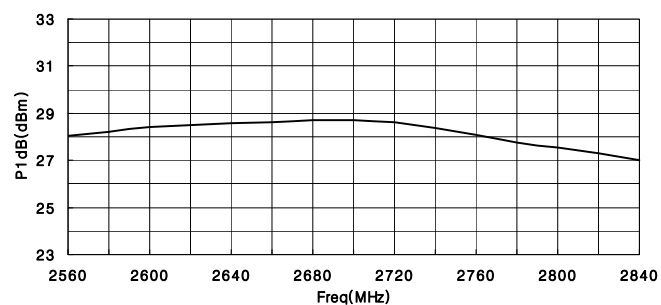
Application Circuit : 2400MHz**Wibro, Bluetooth, OFDM (2300~2500MHz) Performance Data ($V_d=5V$, $T_c=25^\circ C$)**

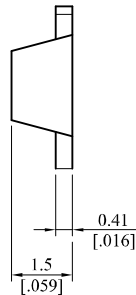
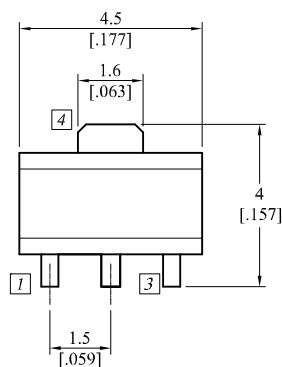
Items	Data	Remarks	Items	Data	Remarks
Gain	11.5 dB	2300~2500MHz	NF	2.5 dB	2300~2500MHz
OIP3	42 dBm	2300~2500MHz	P1dB	28.5 dBm	2300~2500MHz

S-Parameter vs. Frequency**Noise Figure vs. Frequency****OIP3 vs. Frequency****P1dB vs. Frequency**

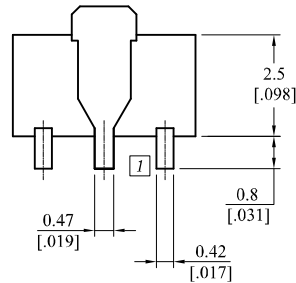
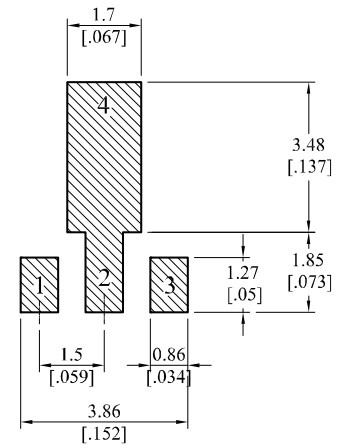
Application Circuit : 2700MHz**Wimax, OFDM (2600~2800MHz) Performance Data ($V_d=5V$, $T_c=25^\circ C$)**

Items	Data	Remarks	Items	Data	Remarks
Gain	10.5 dB	2600~2800MHz	NF	3 dB	2600~2800MHz
OIP3	42 dBm	2600~2800MHz	P1dB	28.5 dBm	2600~2800MHz

S-Parameter vs. Frequency**Noise Figure vs. Frequency****OIP3 vs. Frequency****P1dB vs. Frequency**

E-pHEMT**AE663****RFHIC****Package Dimensions (Type: SOT-89)**

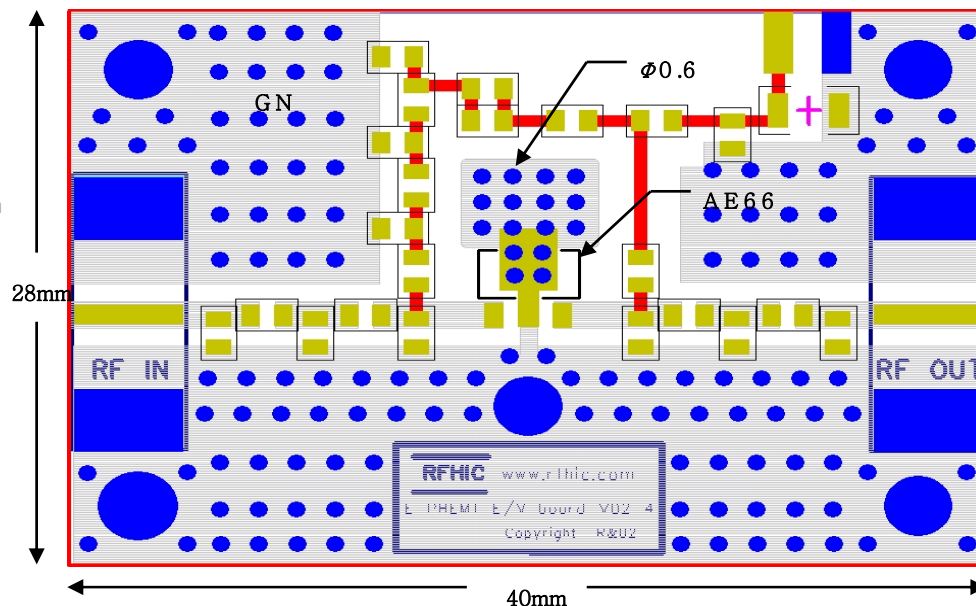
Unit : mm [inch]	Tolerance : ± 0.2 [.008]
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**Recommended Pattern**

Pin No	Function
1	Input
2	Ground
3	Output, Vd
4	Ground

! ESD sensitive

Observe precautions for handling, testing and

PCB Evaluation Board Layout PatternPCB material (FR4), PCB thickness (0.8t), Via hole ($\phi 0.6$), Via space of package bottom (1.3mm)

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