

# GN1010

## GaAs N-Channel MES IC

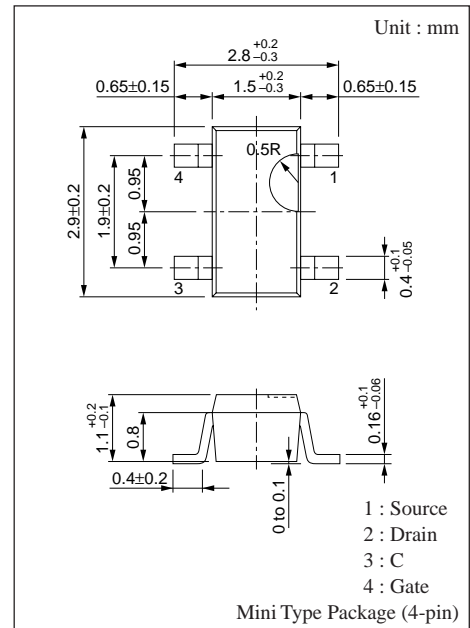
For high-output high-gain amplification

### ■ Features

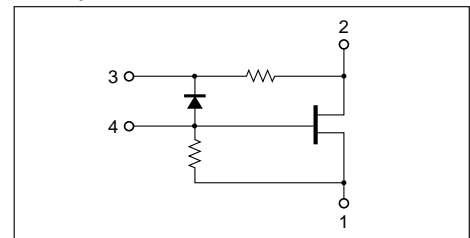
- General-use wide-band amplifier
- Low noise
- With bandwidth control pin

### ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Power supply voltage	V <sub>DS</sub>	6	V
	V <sub>GS</sub>	-4	V
Drain current	I <sub>D</sub>	45	mA
Gate current	I <sub>G</sub>	3	mA
Allowable power dissipation	P <sub>D</sub>	200	mW
Channel temperature	T <sub>ch</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C



### ■ Equivalent Circuit



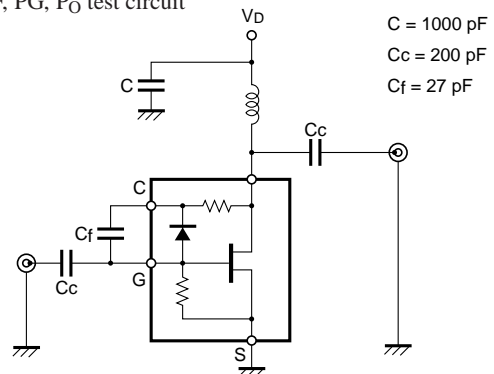
### ■ Electrical Characteristics (Ta = 25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain current	I <sub>DD</sub> *1	V <sub>DS</sub> = 3V	5	30	45	mA
Noise figure	NF *2	V <sub>DS</sub> = 3V, f = 0.5GHz		2	3	dB
		V <sub>DS</sub> = 3V, f = 1.8GHz				
Power gain	PG *2	V <sub>DS</sub> = 3V, f = 0.5GHz	5	10		dB
		V <sub>DS</sub> = 3V, f = 1.8GHz		9		
I <sub>dB</sub> compression output	P <sub>O</sub> *2	V <sub>DS</sub> = 3V, f = 0.5GHz	8	15		dBm
		V <sub>DS</sub> = 3V, f = 1.8GHz				

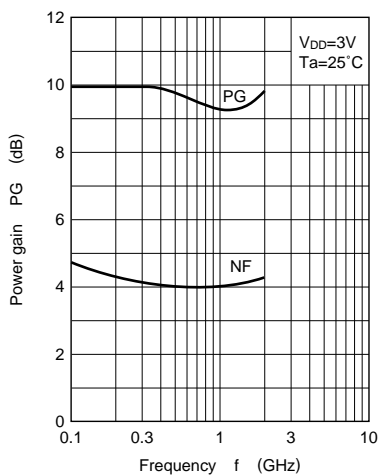
\*1 I<sub>DD</sub> rank classification

Rank	P	Q	R
I <sub>DD</sub> (mA)	5 to 20	15 to 30	25 to 45

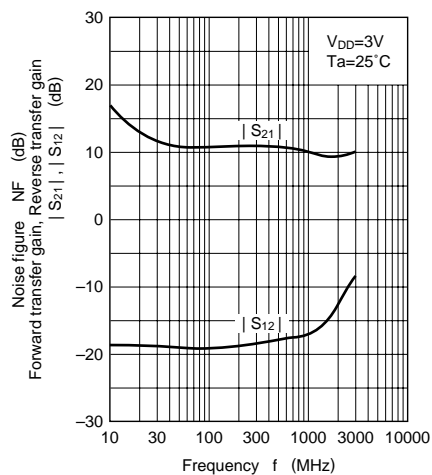
\*2 NF, PG, P<sub>O</sub> test circuit



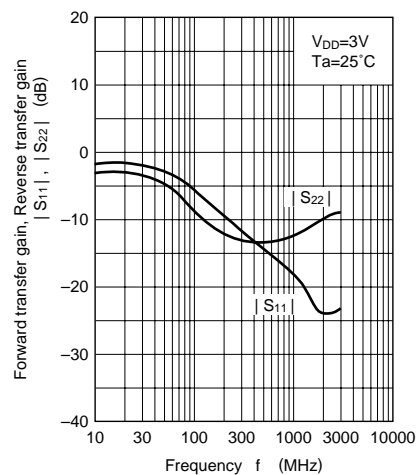
PG, NF – f



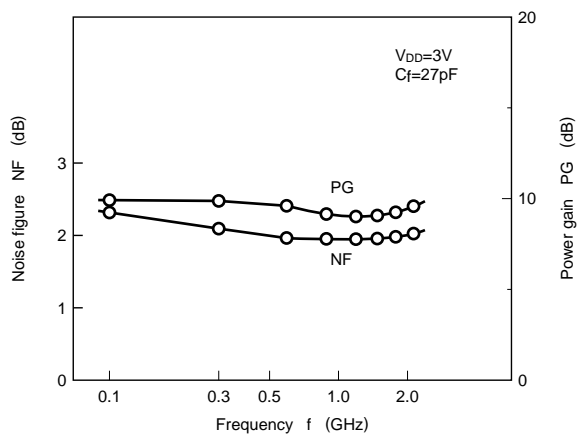
$|S_{21}|, |S_{12}| - f$



$|S_{11}|, |S_{22}| - f$



NF, PG – f



$P_{out}, IM_2, IM_3 - P_{in}$

