

GN01067B

GaAs IC (with built-in ferroelectric)

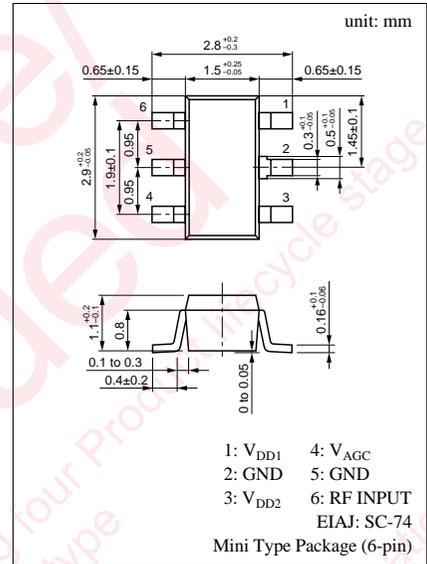
For the preamplifier of the transmitting section in a cellular phone

■ Features

- Amplifier with high-gain AGC function
- Low distortion
- Small package: Mini 6pin

■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Power supply voltage	V _{DD}	8	V
Gate control voltage	V _{AGC}	0 to 3	V
Circuit current	I _{DD}	80	mA
Max input power	P _{in}	-3	dBm
Allowable power dissipation	P _D	200	mW
Operating ambient temperature	T _{opr}	-30 to +90	°C
Storage temperature	T _{stg}	-40 to +120	°C



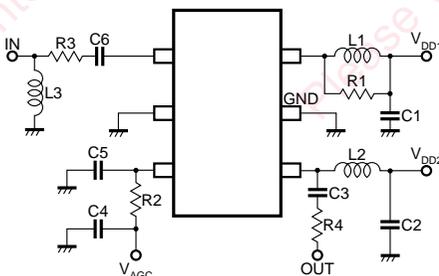
■ Electrical Characteristics (V_{DD1} = 3.0V, V_{DD2} = 3.5V, f = 940MHz, Ta = 25 ± 3°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Circuit current	I _{DD}	V _{AGC} = 2V, P _{in} = -20dBm		36	40	mA
Power gain 1	PG ₁ ^{*1}	V _{AGC} = 2V, P _{in} = -20dBm	23	26		dB
Power gain 2	PG ₂ ^{*1}	V _{AGC} = 0.5V, P _{in} = -20dBm		-21	-14	dB
Dynamic range	DR	PG ₁ - PG ₂	37	47		dB
Adjacent channel leakage power (ACP)	DM ^{*1, 2}	P _{in} = -8dBm, P _{out} = 10dBm ±50kHz Detuning, 21kHz Bandwidth		-60	-55	dBc

^{*1} Measurement circuit is shown in the following diagram.

^{*2} Sampling guaranteed items.

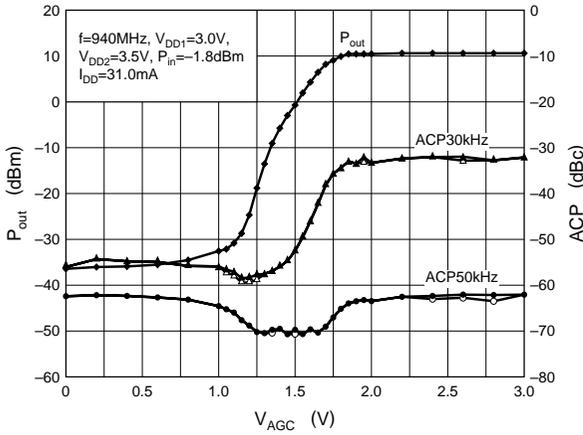
■ Measurement Circuit



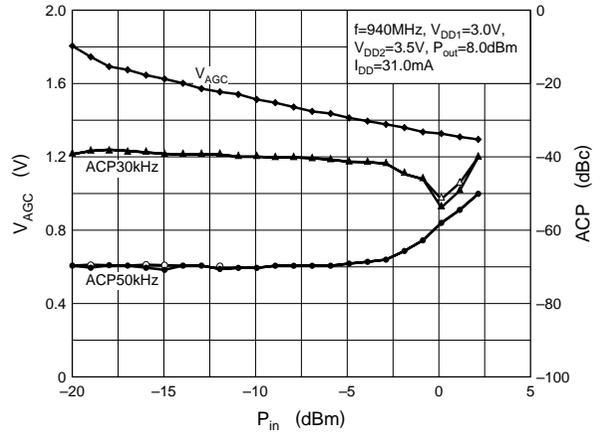
(Component values)

C1 = 100pF + 1000pF	L1 = 12nH	R1 = 33kΩ
C2 = 100pF + 47nF	L2 = 33nH	L3 = 4.7kΩ
C3 = 18pF	L3 = 12nH	R3 = 15kΩ
C4 = 1000pF		R4 = 15kΩ
C5 = 1000pF		
C6 = 27pF		

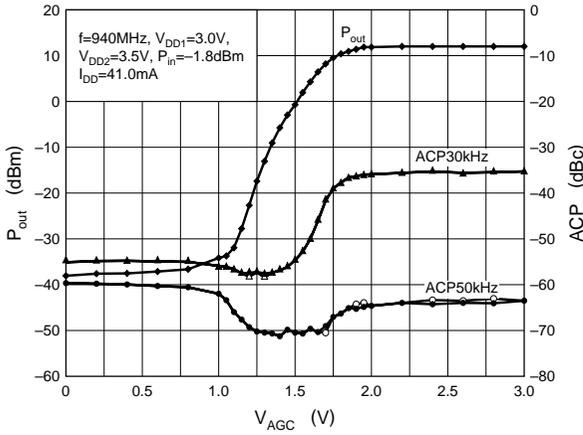
P_{out} , ACP — V_{AGC}



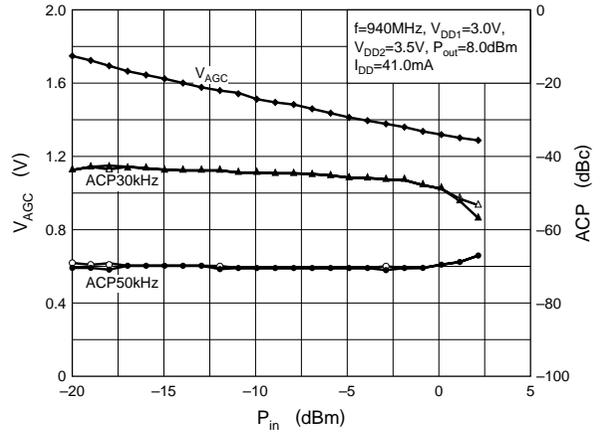
V_{AGC} , ACP — P_{in}



P_{out} , ACP — V_{AGC}



V_{AGC} , ACP — P_{in}



Caution for Safety

 **DANGER**

■ This product contains Gallium Arsenide (GaAs).

GaAs powder and vapor are hazardous to human health if inhaled or ingested. Do not burn, destroy, cut, cleave off, or chemically dissolve the product. Follow related laws and ordinances for disposal. The product should be excluded from general industrial waste or household garbage.

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