

GN01032N

GaAs IC

For PHS receiving front-end amplifier

■ Features

- Low-voltage, positive power supply operation
- Low current operation
- Low noise

■ Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

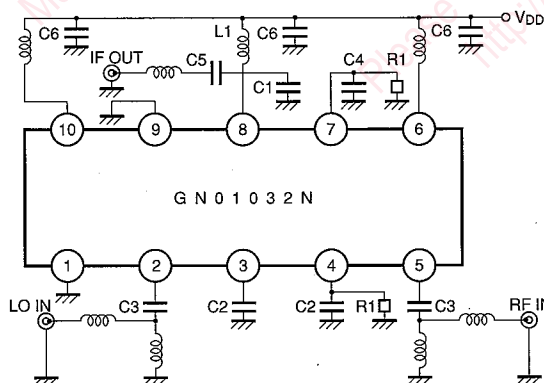
Parameter	Symbol	Rating	Unit
Power supply voltage	V_{DD}	5	V
Circuit current	I_{DD}	10	mA
Max input power	P_{in}	10	dBm
Allowable power dissipation	P_D	50	mW
Operating temperature	T_{opr}	-30 to +90	$^\circ\text{C}$
Storage temperature	T_{stg}	-30 to +90	$^\circ\text{C}$

■ Electrical Characteristics ($V_{DD}=3\text{V}$, $T_a=25\pm 2^\circ\text{C}$)

Parameter	Symbol	Test method	Condition	Min	Typ	Max	Unit
Circuit current	I_{DD}			3.5	5.5	7	mA
Conversion gain	CG	(1)	$f_{LO}=1.66\text{GHz}$, $P_{LO}=-15\text{dBm}$ $f_{RF}=1.90\text{GHz}$, $P_{RF}=-35\text{dBm}$	15	17		dB
Noise figure	NF	(1)	$f_{LO}=1.66\text{GHz}$, $P_{LO}=-15\text{dBm}$ $f_{RF}=1.90\text{GHz}$, $P_{RF}=-35\text{dBm}$ $f_{IF}=0.24\text{GHz}$		4	6	dB

Test method (1) : Design-guaranteed value

For measurement, use the circuit shown below.



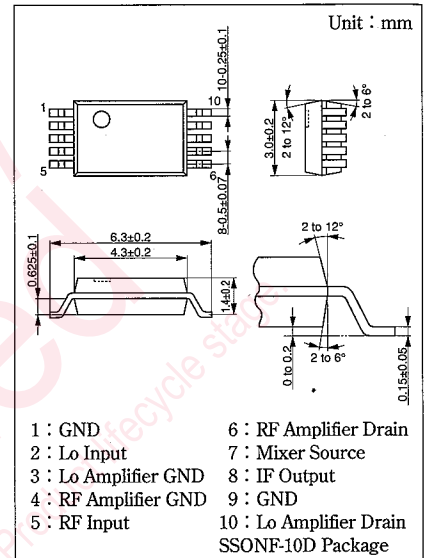
< Value of each part >

R1=1.5k Ω C1=2.5pF

C2=10pF C3=51pF

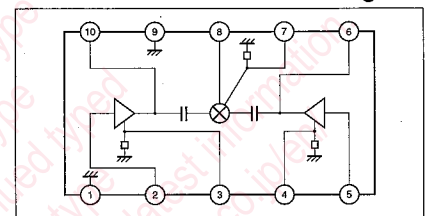
C4=100pF C5=1000pF

C6=100pF, 1000pF

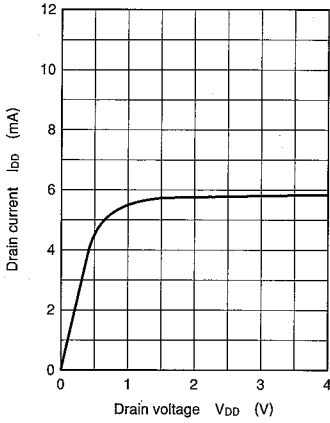


- Unit : mm
- 1 : GND
2 : Lo Input
3 : Lo Amplifier GND
4 : RF Amplifier GND
5 : RF Input
6 : RF Amplifier Drain
7 : Mixer Source
8 : IF Output
9 : GND
10 : Lo Amplifier Drain
- SSONF-10D Package

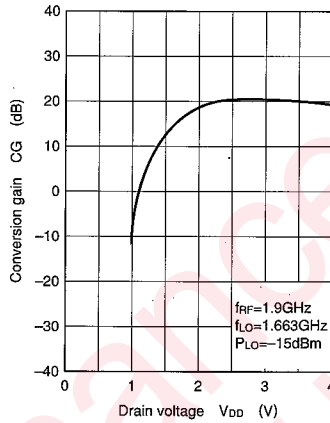
■ Circuit-function Block Diagram



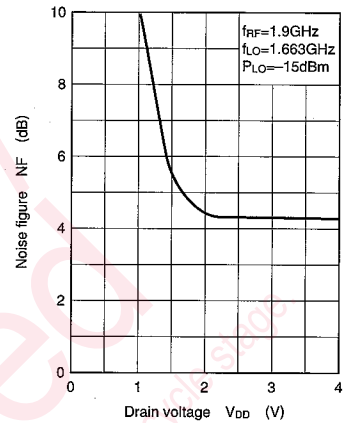
$I_{DD} - V_{DD}$



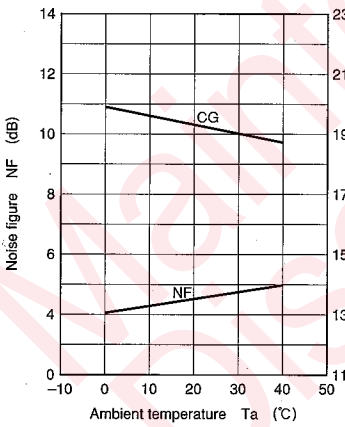
$CG - V_{DD}$



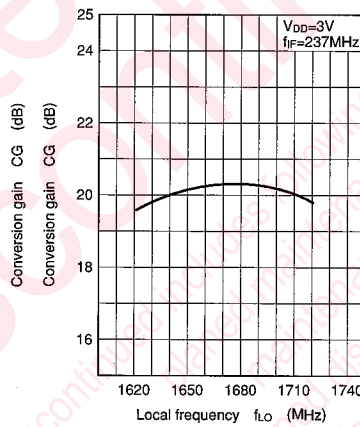
$NF - V_{DD}$



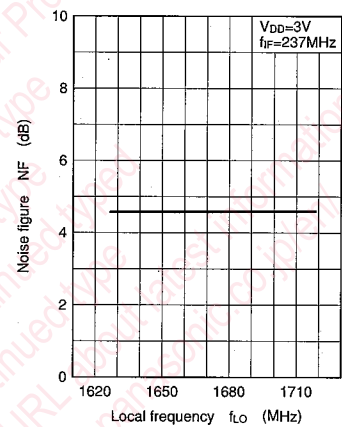
$CG, NF - T_a$



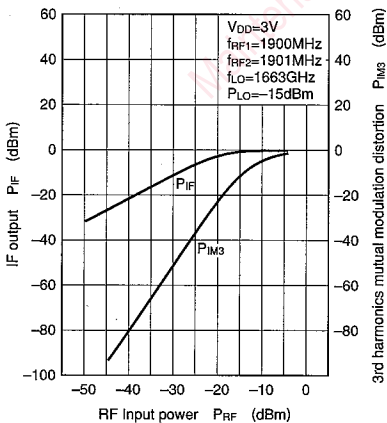
$CG - f_{LO}$



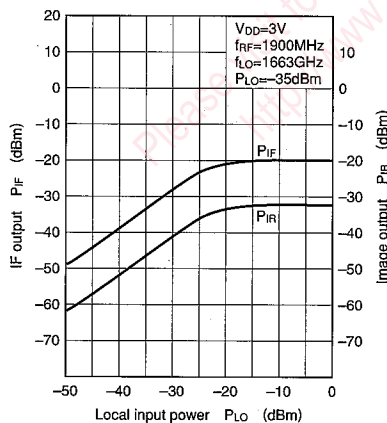
$NF - f_{LO}$



$P_{IF}, P_{IM3} - P_{RF}$



$P_{IF}, P_{IR} - P_{LO}$



GaAs
MMICs

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