

NJG1312PC1

■ABSOLUTE MAXIMUM RATINGS

($T_a=+25^{\circ}\text{C}$, $Z_s=Z_i=50\Omega$)

PARAMETER	SYMBOL	CONDITIONS	RATINGS	UNITS
Drain Voltage	V_{DD}		6	V
Control Voltage	V_{CTL}		6	V
Input Power	P_{in}	$V_{DD}=2.9\text{V}$	15	dBm
Power Dissipation	P_D		400	mW
Operating Temperature	T_{opr}		-40~+85	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55~+125	$^{\circ}\text{C}$

■ELECTRICAL CHARACTERISTICS

($V_{DD}=2.9\text{V}$, $V_{CTR}=2.7\text{V}$, $f=900\text{MHz}$, $T_a=-20\sim+80^{\circ}\text{C}$, $Z_s=Z_i=50\Omega$, R_s (External)=180 Ω)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Operating Frequency	Freq		887	900	925	MHz
Drain Voltage	V_{DD}		2.7	2.9	5.0	V
Operating Current	I_{DD}	RF SW ON $P_{out}=+5.6\text{dBm}$	-	17	22	mA
Control Current	I_{CTL}		-	1.0	2.0	μA
Control Voltage(LOW)	$V_{CTL(L)}$		-0.2	0	0.2	V
Control Voltage(HIGH)	$V_{CTL(H)}$		2.5	2.7	5.5	V
Small Signal Gain	Gain	RF SW ON $P_{in}=-15\text{dBm}$	17	19	22	dB
Gain Flatness	G_{flat}	RF SW ON $P_{in}=-15\text{dBm}$ $f=887\sim 925\text{MHz}$	-	0.5	-	dB
Gain Control Range	G_{cont}	$P_{in}=-15\text{dBm}$	-28.5	-27	-25.5	dB
Pout at 1dB Gain Compression point	P_{-1dB}	RF SW ON	-	+10	-	dBm
IN-Band Spurious1	IBS1	RF SW ON, $P_{out}=+5.6\text{dBm}$ OFFSET 900kHz	-	-55	-51	dBc
IN-Band Spurious2	IBS2	RF SW ON, $P_{out}=+5.6\text{dBm}$ OFFSET 1.98MHz	-	-73	-68	dBc
Input VSWR	$VSWR_i$	RF SW ON	-	2.4	3.0	
Output VSWR	$VSWR_o$	RF SW ON	-	1.4	2.0	

Note) RF SW ON/OFF in the table above: Control voltages (V_{CTL1} , V_{CTL2}) are as follows

RF SW ON	P1: $V_{CTL1}=0\text{V}$, $V_{CTL2}=2.7\text{V}$
	P2: $V_{CTL1}=2.7\text{V}$, $V_{CTL2}=0\text{V}$
RF SW OFF	P1: $V_{CTL1}=2.7\text{V}$, $V_{CTL2}=0\text{V}$
	P2: $V_{CTL1}=0\text{V}$, $V_{CTL2}=2.7\text{V}$

■ TERMINAL INFORMATION

No.	SYMBOL	DESCRIPTIONS
1	PC	RF output terminal of SW.
2	GND	Ground terminal.
3	GND	Ground terminal.
4	RF _{in}	RF signal input terminal of driver amplifier.
5	NC	Neutral terminal. Should be connected to the ground.
6	GND	Ground terminal.
7	GND	Ground terminal.
8	BPC	Source electrode terminal of driver amplifier. The operating current is chosen by a resistor connected between this terminal and ground.
9	RF _{out}	RF signal output terminal of driver amplifier. Please use choke coil for power supply of driver amplifier at this terminal.
10	GND	Ground terminal.
11	P2	RF input terminal 2 of SW.
12	V _{CTL2}	Control terminal 2 of RF signal. Please see the truth table.
13	V _{CTL1}	Control terminal 1 of RF signal. Please see the truth table.
14	P1	RF input terminal 1 of SW.
15	GND	Ground terminal.
16	GND	Ground terminal.

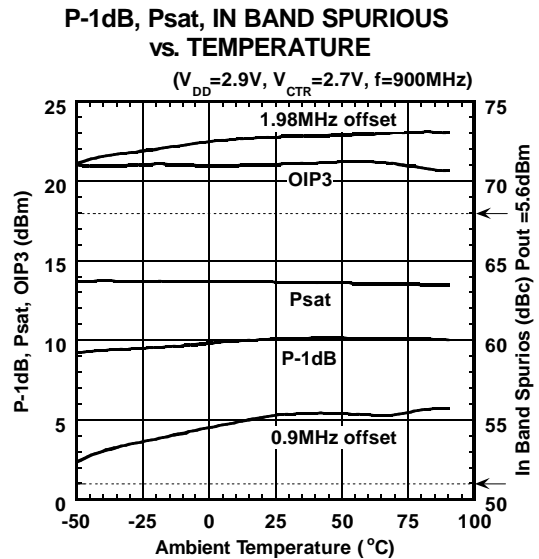
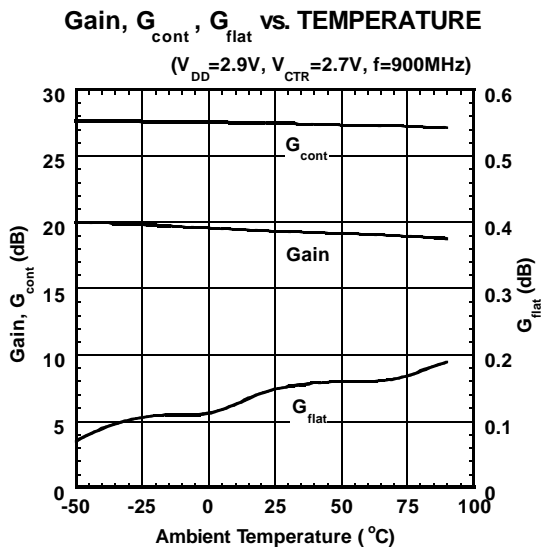
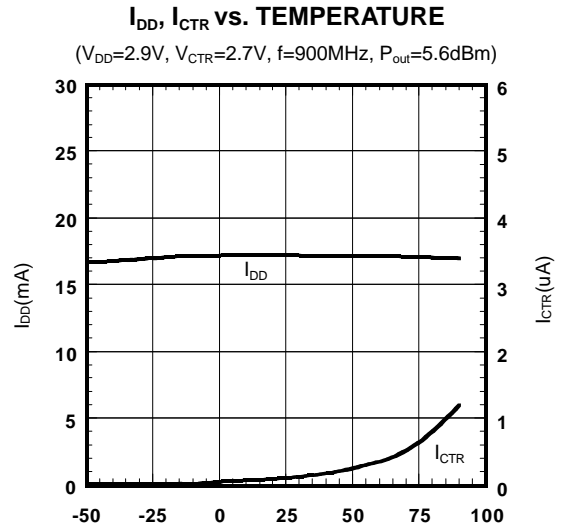
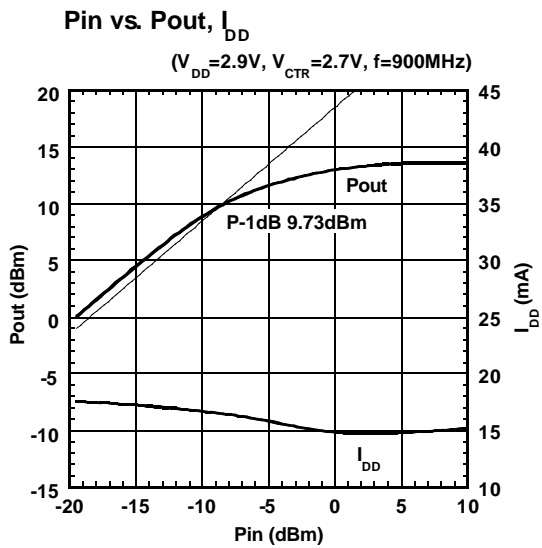
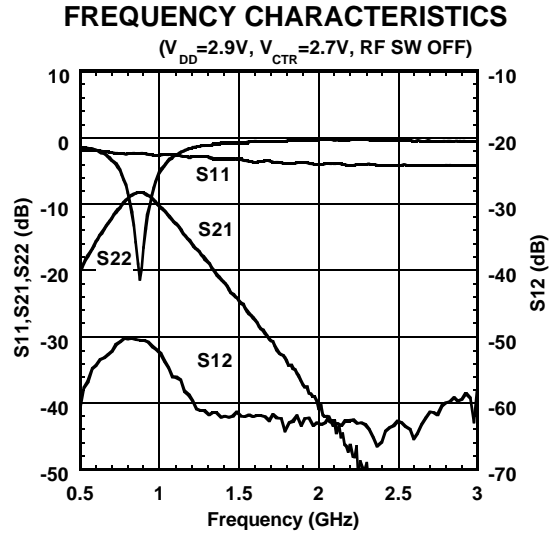
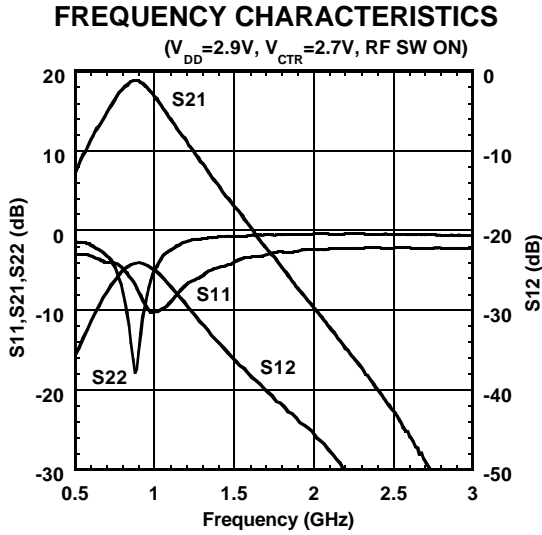
Notice: PC terminal at pin 1 should be connected to the GND through high resistance for pull-down (Max 560KΩ).

■ TRUTH TABLE

V _{CTL1}	V _{CTL2}	P1-PC	P2-PC
0V	2.7V	ON	OFF
2.7V	0V	OFF	ON

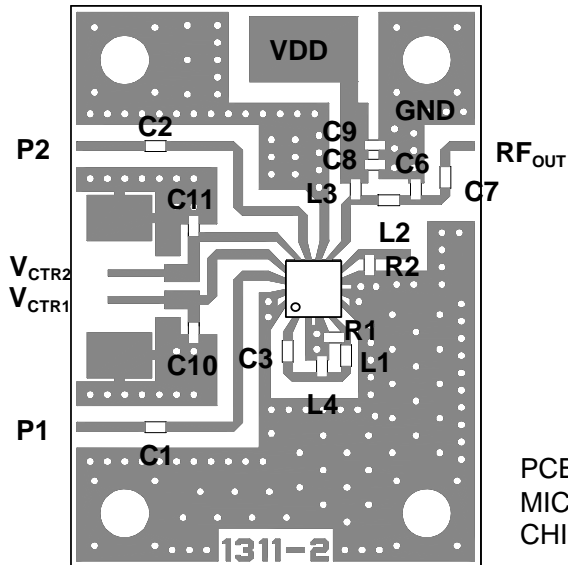
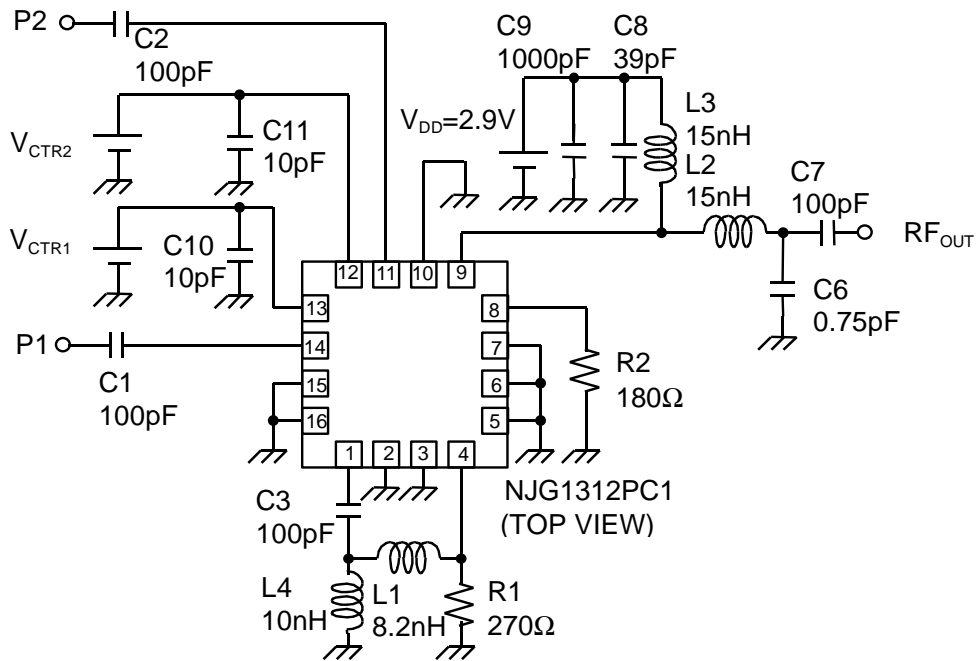
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TYPICAL CHARACTERISTICS



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APPLICATION CIRCUIT

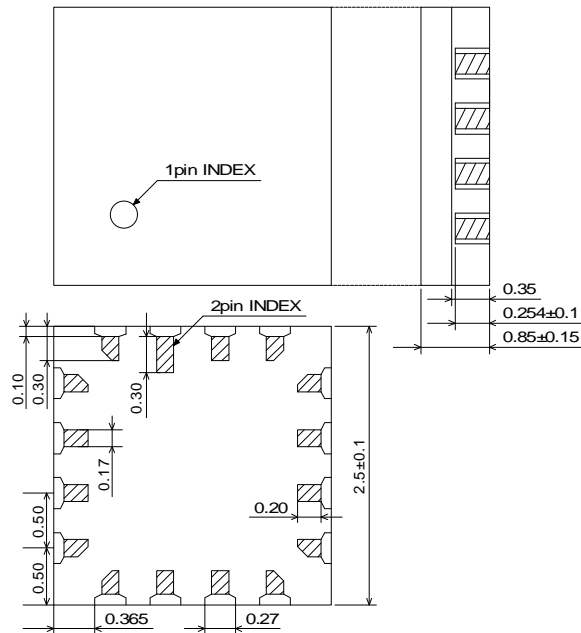


PCB: FR-4 19.0x26.0mm, t=0.2mm
 MICROSTRIP LINE WIDTH=0.4mm ($Z_0=50\Omega$)
 CHIP SIZE:1005

[1] Chip parts list

Parts ID	Comment
C1~C11	MURATA GRM36 Series
L1~L4	TAIYO-YUDEN HK1005 Series

PACKAGE OUTLINE (FFP16-C1)



UNIT	: mm
PCB	: Ceramic
OVER COAT	: Epoxy resin
TERMINAL TREAT	: Au
WEIGHT	: 15mg

Cautions on using this product

This product contains Gallium-Arsenide (GaAs) which is a harmful material.

- Do NOT eat or put into mouth.
- Do NOT dispose in fire or break up this product.
- Do NOT chemically make gas or powder with this product.
- To waste this product, please obey the relating law of your country.

[CAUTION]

The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.

This product may be damaged with electric static discharge (ESD) or spike voltage. Please handle with care to avoid these damages.