

GN04042N

GaAs N-Channel IC

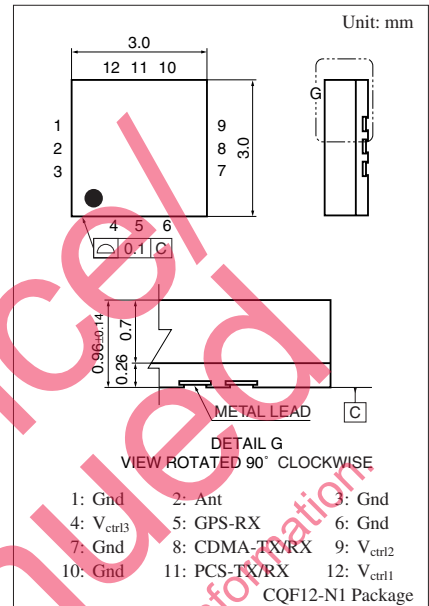
High-frequency high-power output SP3T switch
for Mobile Communication
The terminal for CDMA/PCS/GPS

■ Features

- Low insertion: LOSS = 0.27 dB (CDMA)
- High isolation: ISO = 30 to 35 dB (CDMA)
- Small package

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

Parameter	Symbol	Rating	Unit
Power dissipation	P_D	150	mW
Control current	$V_{ctrl(H)} - V_{ctrl(L)}$	+5	V
Maximum input power	CDMA, PCS	35	dBm
	GPS	20	
Operating ambient temperature	T_{opr}	-30 to +90	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +120	$^\circ\text{C}$



■ Electrical Characteristics

- CDMA ($V_{ctrl(L)} = 0\text{ V}$, $V_{ctrl(H)} = 3.0\text{ V}$, $f = 824\text{ MHz to } 894\text{ MHz}$, $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Insertion loss	LOSS	ANT-CDMA_TX/RX ($P_{IN} = 26\text{ dBm}$)		0.27	0.50	dB
Isolation	ISO	ANT-PCS_TX/RX (Correspond of ANT-CDMA_TX/RX ON)	25.0	30.0		dB
		ANT-GPS_RX (Correspond of ANT-CDMA_TX/RX ON)	30.0	34.8		
Voltage standing wave ratio *	VSWR	ANT-CDMA_TX/RX		1.20	1.35	—
Input 0.1 dB compression	$P_{IN(0.1\text{ dB})}$	ANT-CDMA_TX/RX	30	33		dBm
2nd harmonics *	$2f_O$	ANT-CDMA_TX/RX ($P_{IN} = 26\text{ dBm}$) Non-modulation signal		-76	-65	dBc
3rd harmonics *	$3f_O$	ANT-CDMA_TX/RX ($P_{IN} = 26\text{ dBm}$) Non-modulation signal		-75	-68	dBc
Control current	I_{ctrl}	ANT-CDMA_TX/RX		0.16	9.0	μA

Note) *: Designed specification

■ Electrical Characteristics (continued)

- PCS ($V_{ctrl(L)} = 0\text{ V}$, $V_{ctrl(H)} = 3.0\text{ V}$, $f = 1\,850\text{ MHz}$ to $1\,990\text{ MHz}$, $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Insertion loss *	LOSS	ANT-PCS_TX/RX ($P_{IN} = 24.0\text{ dBm}$)		0.33	0.50	dB
Isolation *	ISO	ANT-CDMA_TX/RX (Correspond of ANT-PCS_TX/RX ON)	19.0	22.0		dB
		ANT-GPS_RX (Correspond of ANT-PCS_TX/RX ON)	20.0	26.0		
Voltage standing wave ratio *	VSWR	ANT-PCS_TX/RX		1.10	1.30	—
Input 0.1 dB compression *	$P_{IN(0.1\text{ dB})}$	ANT-PCS_TX/RX	30	33		dBm
2nd harmonics *	$2f_O$	ANT-PCS_TX/RX ($P_{IN} = 24.0\text{ dBm}$) Non-modulation signal		-76	-65	dBc
3rd harmonics *	$3f_O$	ANT-PCS_TX/RX ($P_{IN} = 24.0\text{ dBm}$) Non-modulation signal		-78	-74	dBc
Control current *	I_{ctrl}	ANT-PCS_TX/RX		0.14	9.0	μA

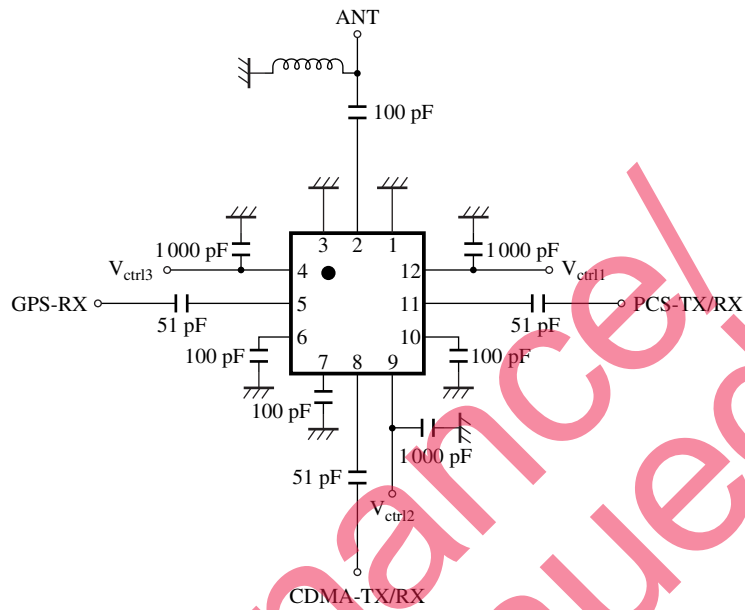
Note) *: Designed specification

- GPS ($V_{ctrl(L)} = 0\text{ V}$, $V_{ctrl(H)} = 3.0\text{ V}$, $f = 1\,574\text{ MHz}$ to $1\,577\text{ MHz}$, $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Insertion loss *	LOSS	ANT-GPS_RX ($P_{IN} = 10.0\text{ dBm}$)		0.32	0.55	dB
Isolation *	ISO	ANT-CDMA_TX/RX (Correspond of ANT-GPS_RX ON)	20.0	24.0		dB
		ANT-PCS_TX/RX (Correspond of ANT-GPS_RX ON)	20.0	25.0		
Voltage standing wave ratio *	VSWR	ANT-GPS_RX		1.1	1.35	—
Control current *	I_{ctrl}	ANT-GPS_RX		0.16	9.0	μA

Note) *: Designed specification

■ Test Circuit



■ Logic Table

ON Course	V _{ctrl1}	V _{ctrl2}	V _{ctrl3}
ANT-CDMA_TX/RX	L	H	L
ANT-PCS_TX/RX	H	L	L
ANT-GPS_RX	L	L	H

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