

# GN04054N

## GaAs N-Channel IC

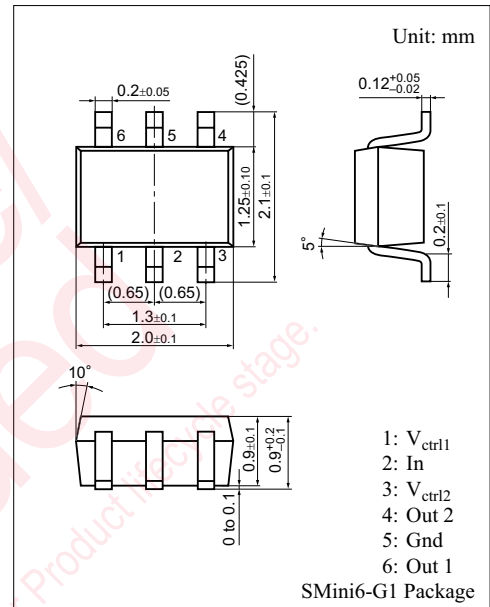
High handling power SPDT SW-IC for UMTS mobile phone

### ■ Features

- Handling power: 1 W
- Low insertion LOSS: 0.28 dB (typ.)
- Ultra small package (1.25 mm × 2.0 mm × 0.9 mm)

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

Parameter	Symbol	Rating	Unit
Power dissipation	$P_D$	150	mW
Control voltage	$V_{\text{ctrl(H)}} - V_{\text{ctrl(L)}}$	+5	V
Maximum control voltage	$V_{\text{ctrl(H)max}}$	+5	V
Minimum control voltage	$V_{\text{ctrl(L)min}}$	-1	V
Maximum input power	$P_{\text{IN}}$	35	dBm
Operating ambient temperature	$T_{\text{opr}}$	-30 to +90	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-40 to +120	$^\circ\text{C}$

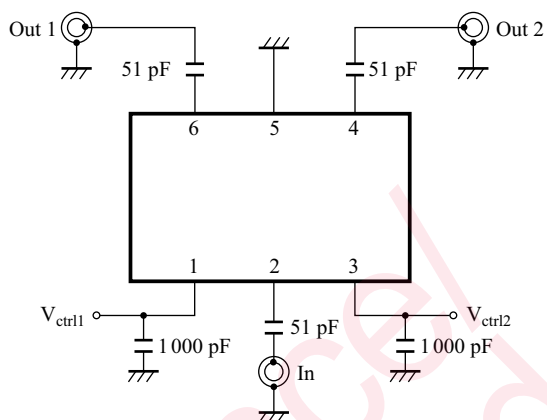


### ■ Electrical Characteristics $V_{\text{ctrl(L)}} = 0\text{ V}$ , $V_{\text{ctrl(H)}} = 3.0\text{ V}$ , $f = 1920\text{ MHz to } 2170\text{ MHz}$ , $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Insertion loss	LOSS	In - Out 1, 2 ( $P_{\text{IN}} = 26.0\text{ dBm}$ )		0.28	0.45	dB
Isolation	ISO	In - Out 1, 2 ( $P_{\text{IN}} = 26.0\text{ dBm}$ ) (Correspond of In - Out 2, 1 ON)	21	27		dB
Voltage standing wave ratio *	VSWR	In - Out 1, 2		1.10	1.30	—
Input 0.1 dB compression	$P_{\text{IN}(0.1\text{ dB})}$			31	30	dBm
Adjacent channel leakage power suppression *	ACPR1	In - Out 1, 2 ( $P_{\text{IN}} = 26.0\text{ dBm}$ ) HPSK modulation, $\pm 5\text{ MHz}$ offset from the carrier, 3.84 MHz Bandwidth, Load VSWR $\leq 3.0$ , All phase		-59	-43	dBc
	ACPR2	In - Out 1, 2 ( $P_{\text{IN}} = 26.0\text{ dBm}$ ) HPSK modulation, $\pm 10\text{ MHz}$ offset from the carrier, 3.84 MHz Bandwidth, Load VSWR $\leq 3.0$ , All phase		-63	-55	
2nd harmonics *	$2f_0$	In - Out 1, 2 ( $P_{\text{IN}} = 26.0\text{ dBm}$ )		-74	-65	dBc
3rd harmonics *	$3f_0$	Non-modulation signal		-80	-70	dBc
IMD3 *	IMD3	$f_{\text{TX}} = 1950\text{ MHz}$ , $P_{\text{IN}} = 20\text{ dBm}$ $f_{\text{jammer}} = 1760\text{ MHz}$ , $P_{\text{IN}} = 20\text{ dBm}$ 2 tone CW, $f_{\text{RX}} = 2140\text{ MHz}$		-108.8	-105	dBm/ 1.2 MHz
Control current	$I_{\text{ctrl}}$	In - Out 1, 2		1	8	$\mu\text{A}$

Note) \*: Designed specification

■ Test Circuit



■ Logic Table

ON Course	V <sub>ctrl1</sub>	V <sub>ctrl2</sub>
In - Out 1	H	L
In - Out 2	L	H

Maintenance/Discontinued

Discontinued includes following four Product lifecycle stage.  
 planned maintenance type  
 maintenance type  
 planned discontinued type  
 discontinued type  
 Please visit following URL about latest information.  
<http://www.semicon.panasonic.co.jp/en/>

# 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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