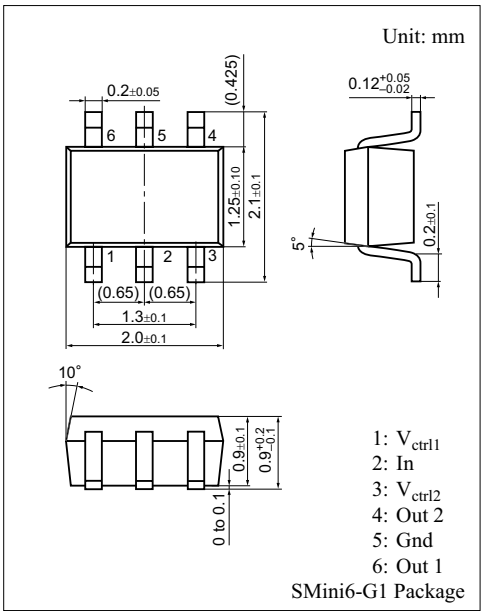
GN04054N

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°C

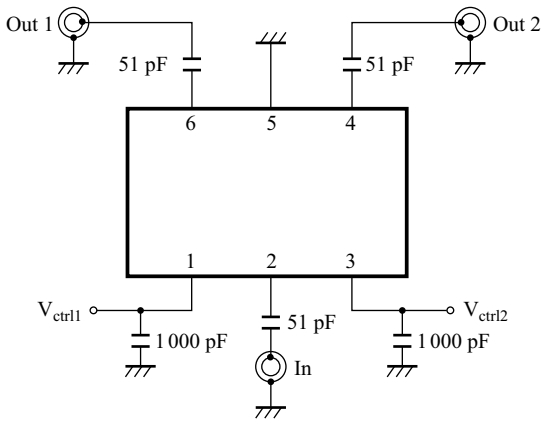
Parameter	Symbol	Rating	Unit
Power dissipation	P_D	150	mW
Control voltage	$V_{ctrl(H)}$ - $V_{ctrl(L)}$	+5	V
Maximum control voltage	$V_{ctrl(H)max}$	+5	V
Minimum control voltage	$V_{ctrl(L)min}$	–1	V
Maximum input power	P_{IN}	35	dBm
Operating ambient temperature	T_{opr}	–30 to +90	°C
Storage temperature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

■ Electrical Characteristics $V_{ctrl(L)}$ = 0 V, $V_{ctrl(H)}$ = 3.0 V, f = 1 920 MHz to 2 170 MHz, T_a = 25°C±3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Insertion loss	LOSS	In - Out 1, 2 (P_{IN} = 26.0 dBm)		0.28	0.45	dB
Isolation	ISO	In - Out 1, 2 (P_{IN} = 26.0 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	$P_{IN(0.1\ dB)}$			31	30	dBm
Adjacent channel leakage power suppression *	ACPR1	In - Out 1, 2 (P_{IN} = 26.0 dBm) HPSK modulation, ±5 MHz offset from the carrier, 3.84 MHz Bandwidth, Load VSWR ≤ 3.0 , All phase		–59	–43	dBc
	ACPR2	In - Out 1, 2 (P_{IN} = 26.0 dBm) HPSK modulation, ±10 MHz offset from the carrier, 3.84 MHz Bandwidth, Load VSWR ≤ 3.0 , All phase		–63	–55	
2nd harmonics *	$2f_O$	In - Out 1, 2 (P_{IN} = 26.0 dBm) Non-modulation signal		–74	–65	dBc
3rd harmonics *	$3f_O$			–80	–70	dBc
IMD3 *	IMD3	f_{TX} = 1 950 MHz, P_{IN} = 20 dBm f_{jammer} = 1 760 MHz, P_{IN} = 20 dBm 2 tone CW, f_{RX} = 2 140 MHz		–108.8	–105	dBm/ 1.2 MHz
Control current	I_{ctrl}	In - Out 1, 2		1	8	μA

Note) *: Designed specification

■ Test Circuit



■ Logic Table

ON Course	V_{ctrl1}	V_{ctrl2}
In - Out 1	H	L
In - Out 2	L	H

⚠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.

Request for your special attention and precautions in using the technical information and semiconductors described in this book

(1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.

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 Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.

(6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.