NEC

GaAs INTEGRATED CIRCUIT

uPG2163T5N

GaAs MMIC SPDT SWITCH FOR 2.4 GHz AND 5 GHz DUALBAND WIRELESS LAN

DESCRIPTION

The uPG2163T5N is a GaAs MMIC SPDT switch for 2.4 GHz and 5 GHz dualband wireless LAN. Low insertion loss and dual band operations suit to dualband wireless LAN system.

FEATURES

- Operating frequency : f = 2.4 to 2.5 GHz and 4.9 to 6.0 GHz
- Low insertion loss : L_{INS} = 0.4 dB TYP. @ f = 2.4 to 2.5 GHz
  : L_{INS} = 0.5 dB TYP. @ f = 4.9 to 6.0 GHz
- Handling power : $P_{in\ (1\ dB)}$ = +31 dBm TYP. @ f = 2.5 GHz
  +29 dBm TYP. @ f = 6.0 GHz
- High isolation : ISL = 35 dB TYP. @ f = 2.4 to 2.5 GHz
  : ISL = 30 dB TYP. @ f = 4.9 to 6.0 GHz
- Input/output return loss : RL_{in}/RL_{out} = 15 dB TYP. @ f = 2.4 to 2.5 GHz
  : RL_{in}/RL_{out} = 15 dB TYP. @ f = 4.9 to 6.0 GHz
- 6-pin plastic TSON package (1.5 × 1.5 × 0.4 mm)

APPLICATION

- 2.4 GHz and 5 GHz dualband wireless LAN : IEEE802.11a+b/g

ORDERING INFORMATION

Part Number	Package	Marking	Supplying Form
uPG2163T5N-E2	6pinTSON	TBD	• Embossed tape 8 mm wide • Pin 1.6 face to tape perforation side • Qty TBD kpcs/reel

Remark To order evaluation samples, contact your nearby sales office.
Part number for sample order: uPG2163T5N

Caution Observe precautions when handling because these devices are sensitive to electrostatic discharge.

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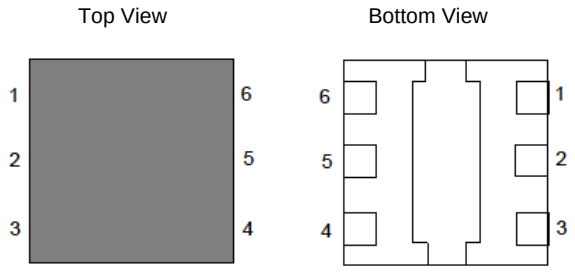
PIN CONNECTIONS AND INTERNAL BLOCK DIAGRAM



Pin No.	Pin Name
1	NC (GND)
2	Vcont2
3	RX
4	TX
5	Vcont1
6	ANT
EXPOSED PAD	GND

Remark NC is functionally non-connection pin but actually grounding is recommended.

TRUTH TABLE

V_{cont1}	V_{cont2}	ANT-RX	ANT-TX
High	Low	ON	OFF
Low	High	OFF	ON

ABSOLUTE MAXIMUM RATINGS (T_A = +25°C, unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Switch Control Voltage	V_{cont}	–6.0 to +6.0 Note 1	V
Input Power	P_{in}	TBD	dBm
Operating Ambient Temperature	T_A	–45 to +45	°C
Storage Temperature	T_{stg}	–55 to +150	°C

Notes 1. $|V_{cont1} - V_{cont2}| \leq 6.0$ V

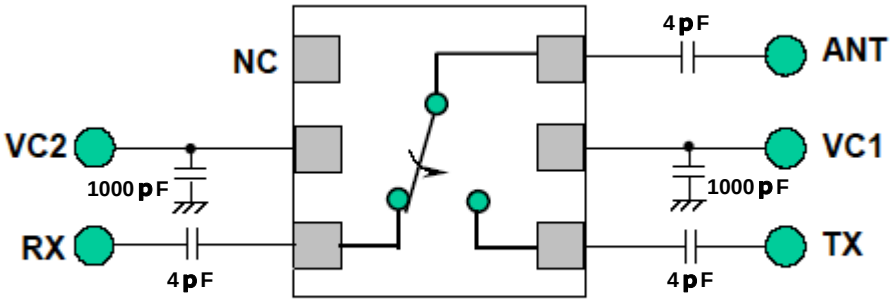
RECOMMENDED OPERATING RANGE (T_A = +25°C)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Operating Frequency 1	f1	2.4	–	2.5	GHz
Operating Frequency 2	f2	4.9	–	6.0	GHz
Switch Control Voltage (H)	$V_{cont (H)}$	2.7	3.0	5.0	V
Switch Control Voltage (L)	$V_{cont (L)}$	–0.2	0	0.2	V

ELECTRICAL CHARACTERISTICS (T_A = +25°C, V_{cont} = 3.0 V/0 V, Z_O = 50 Ω, DC blocking capacitors value: 4 pF, Each port, unless otherwise specified)

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
Insertion Loss	Lins	f = 2.4 to 2.5 GHz	–	0.4	TBD	dB
		f = 4.9 to 6.0 GHz	–	0.5	TBD	dB
Isolation	ISL	f = 2.4 to 2.5 GHz	TBD	35	–	dB
		f = 4.9 to 6.0 GHz	TBD	30	–	dB
Input Return Loss	RLin	f = 2.4 to 2.5 GHz	–	15	–	dB
		f = 4.9 to 6.0 GHz	–	15	–	dB
Output Return Loss	RLout	f = 2.4 to 2.5 GHz		15	–	dB
		f = 4.9 to 6.0 GHz	–	15	–	dB
1 dB Gain Compression Input Power	$P_{in (1 dB)}$	f = 2.5 GHz	–	31	–	dBm
		f = 6.0 GHz	–	29	–	dBm
Switch Control Speed	tsw		–	50	–	ns
Control Current	Icont	RF Non	–	0.7	1.5	μA

EVALUATION CIRCUIT

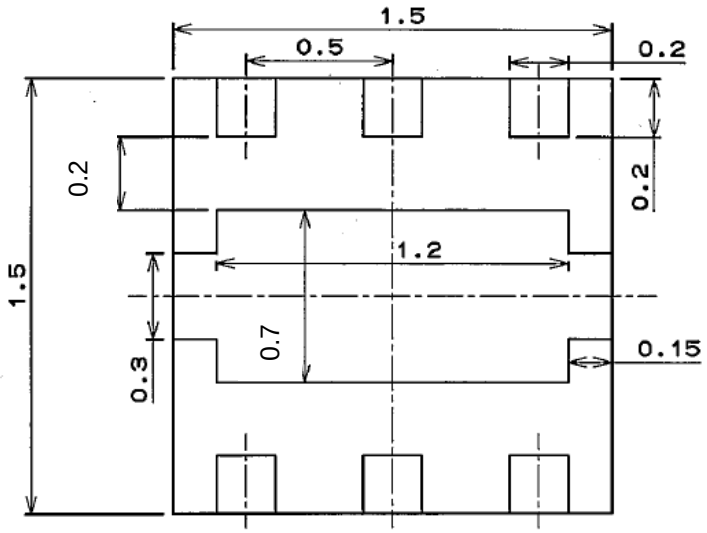


The application circuits and their parameters are for reference only and are not intended for use in actual design-ins.

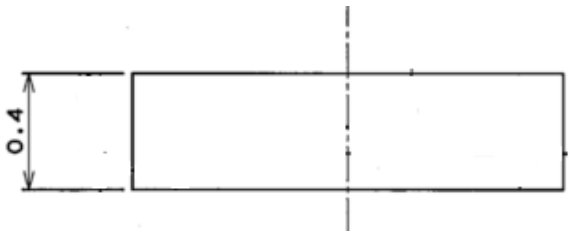
PACKAGE DIMENSIONS

6-PIN PLASTIC TSON (UNIT: mm)

（Bottom View）



（Side View）



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M8E 00.4-0110

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▶For further information, please contact

NEC Compound Semiconductor Devices, Ltd. http://www.ncsd.necel.com/
E-mail: salesinfo@ml.ncsd.necel.com (sales and general)
techinfo@ml.ncsd.necel.com (technical)
5th Sales Group, Sales Division TEL: +81-44-435-1588 FAX: +81-44-435-1579

NEC Compound Semiconductor Devices Hong Kong Limited
E-mail: ncsd-hk@elhk.nec.com.hk (sales, technical and general)
Hong Kong Head Office TEL: +852-3107-7303 FAX: +852-3107-7309
Taipei Branch Office TEL: +886-2-8712-0478 FAX: +886-2-2545-3859
Korea Branch Office TEL: +82-2-558-2120 FAX: +82-2-558-5209

NEC Electronics (Europe) GmbH http://www.ee.nec.de/
TEL: +49-211-6503-0 FAX: +49-211-6503-1327

California Eastern Laboratories, Inc. http://www.cel.com/
TEL: +1-408-988-3500 FAX: +1-408-988-0279