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

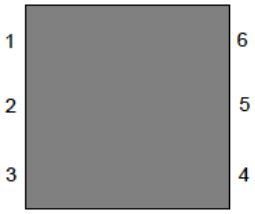
Remark To order evaluation samples, contact your nearby sales office.
Part number for sample order: uPG2163T5N

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

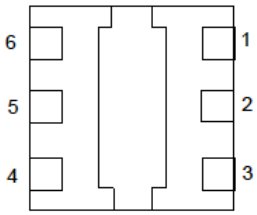
Document No. 1st version
Date Published May 2005 CP(K)
Printed in Japan

PIN CONNECTIONS AND INTERNAL BLOCK DIAGRAM

Top View



Bottom View



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 +85	°C
Storage Temperature	T_{stg}	–55 to +150	°C

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

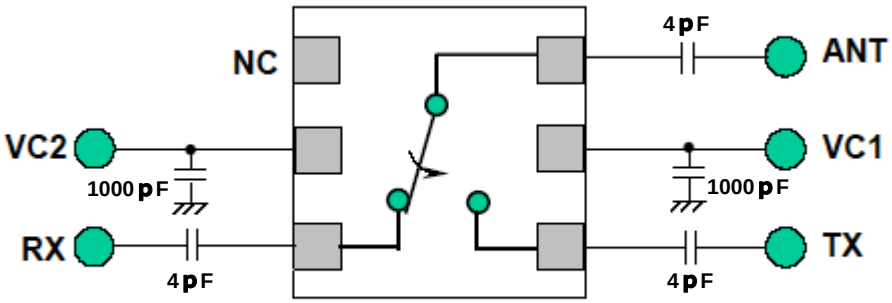
RECOMMENDED OPERATING RANGE (T_A = +25°C)

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	t_{SW}		–	50	–	ns
Control Current	Icont	RF Non	–	0.7	1.5	μA

EVALUATION CIRCUIT

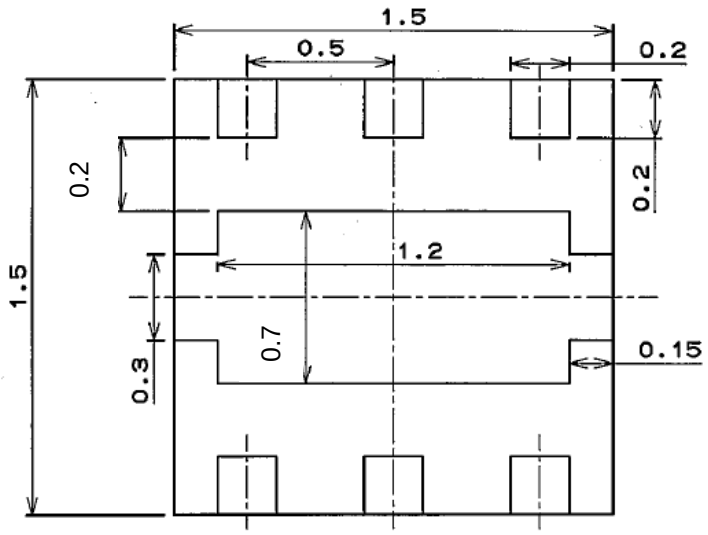


The application circuits and their parameters are for reference only and are not intended for use in actual design-ins.

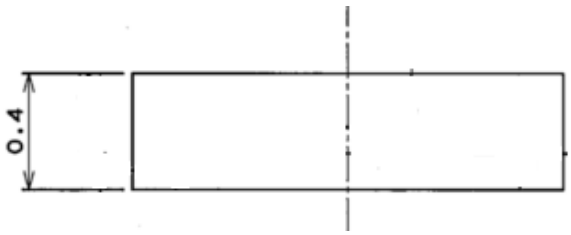
PACKAGE DIMENSIONS

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

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