

GaAs Very Small Balanced SPDT (DP4T) Switch for 0.8~6.0GHz

Applications

Balanced SPDT (DP4T) for General Purpose

Features

- Positive Voltage Control.....+2.8V
- Low Insertion Loss.....0.45dB@0.9GHz / 0.48dB@1.9GHz
- High Isolation30.0dB@0.9GHz / 23.0dB@1.9GHz (Port 1 – Port 2 or Port3)
.....33.0dB@0.9GHz / 26.0dB@1.9GHz (Port 2 – Port 3)
- Small / Thin Package8 pin Leadless Package (1.5×1.5×0.4mm|max, RoHS Compliant)
- MSL3

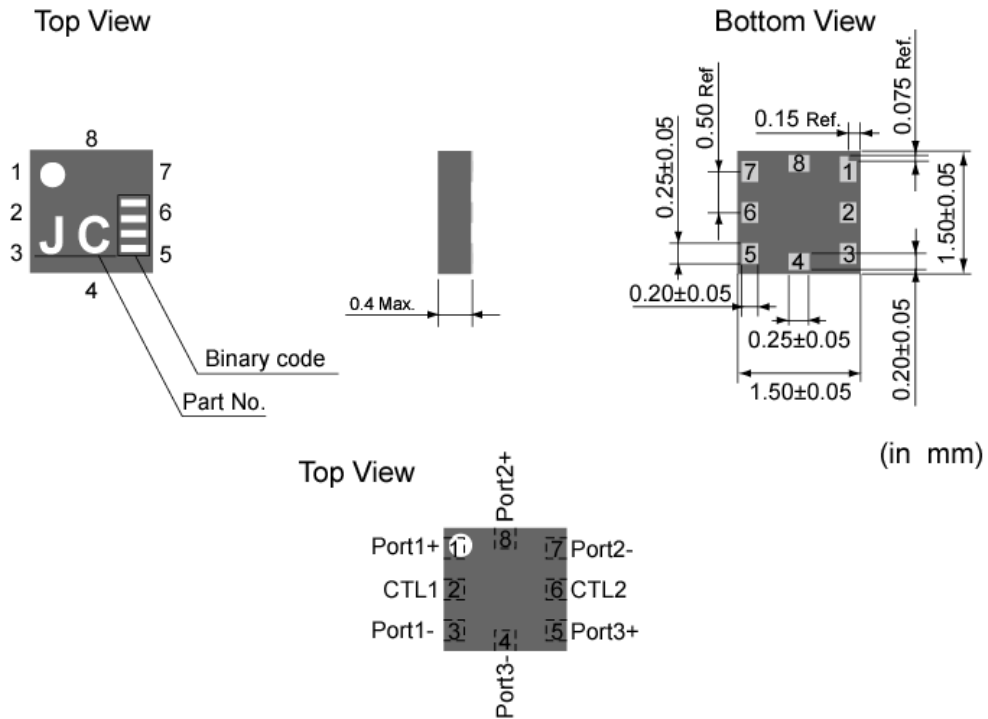
Absolute Maximum Ratings

Symbol	Parameter	Conditions	Rating	Unit
VCTL(H)	Control Voltage (High)	Ta = 25°C 1.7≤VCTL(H)-VCTL(L)≤4.0	1.7 to 4.0	V
VCTL(L)	Control Voltage (Low)		-0.2 to 0.2	V
Pin	RF Input Power	Ta = 25°C VCTL(H)=2.8V, VCTL(L)=0V	23	dBm
Top	Operating Temperature	-	-40 to 85	°C
Tstg	Storage Temperature	-	-55 to 150	°C

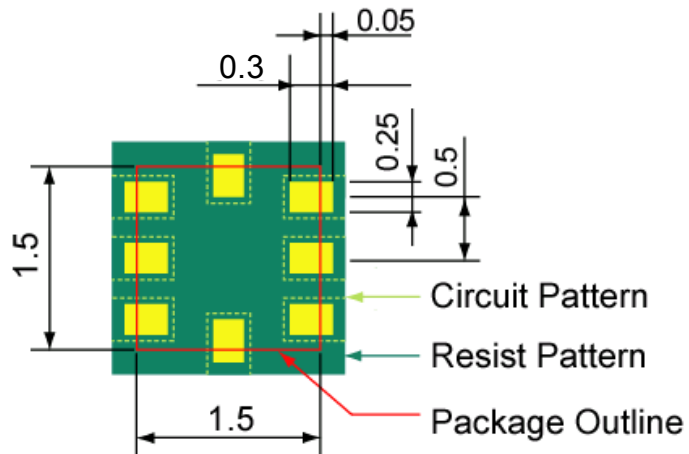
Electrical Specifications (Ta=25°C, VCTL(H)=2.8V, VCTL(L)=0V)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
ICTL	Control Current	Either State	-	0.1	1	μA
f ₀	Operation Frequency	-	0.8	-	3.0	GHz
IL	Insertion Loss	1.0GHz	-	0.6	0.8	dB
		2.0GHz	-	0.6	0.8	dB
ISO	Isolation (Port1 – Port2 or Port3)	1.0GHz	25	29.0	-	dB
		2.0GHz	20	23.0	-	dB

Package Outline and Pin Connections



Land Pattern



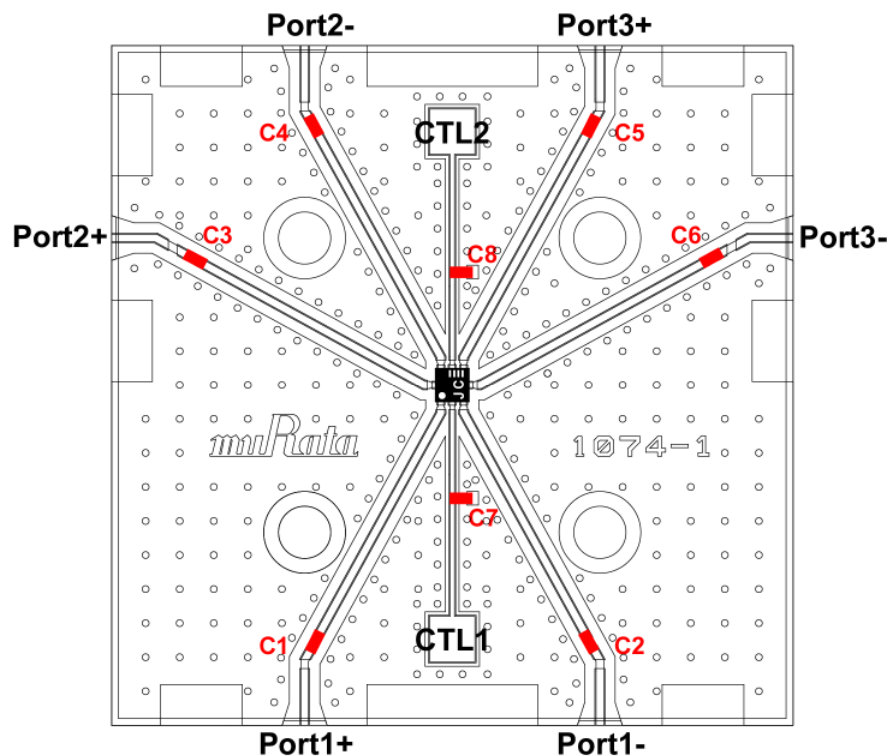
Truth Table

Path	CTL1	CTL2
Port1+/- – Port3+/-	H	L
Port1+/- – Port2+/-	L	H

H: 2.8V

L: 0V

Evaluation Board



Parts List

Part No.	Products	Value
C1-C6	GRM155(Murata)	47 pF
C7, C8		100 pF

Substrate

FR4,

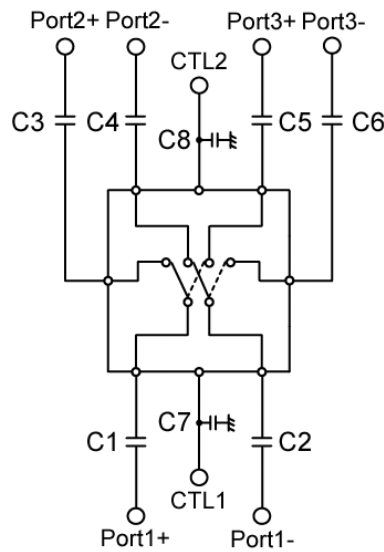
 $\epsilon_r = 4.4$

Thickness = 0.2mm + 0.6mm(dummy)

Metal Thickness: 18um

Size=30mm x 30mm

□ Evaluation Circuit



*Note: C1,C2,C3,C4,C5,C6: must be supplied as DC blocking cap.

□ Typical Performance Data (On Evaluation Board, Fixture's loss de-embedded)

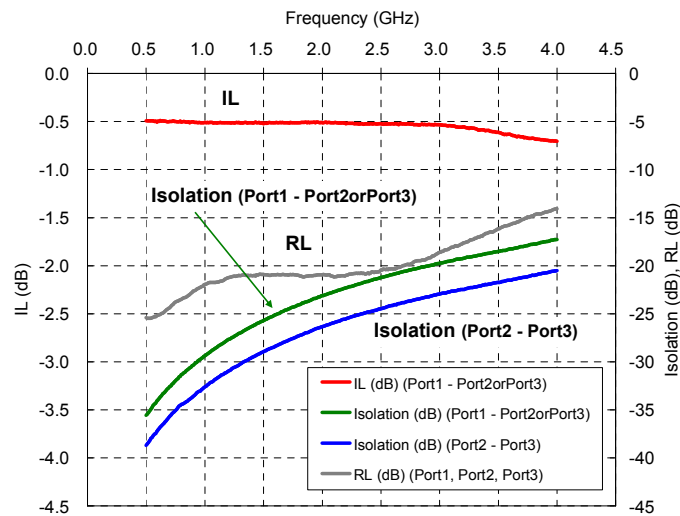


Fig.1 IL, RL and Isolation (VCTL(H)=2.8V)

□ Typical Performance Data (On Evaluation Board, Fixture's loss de-embedded)

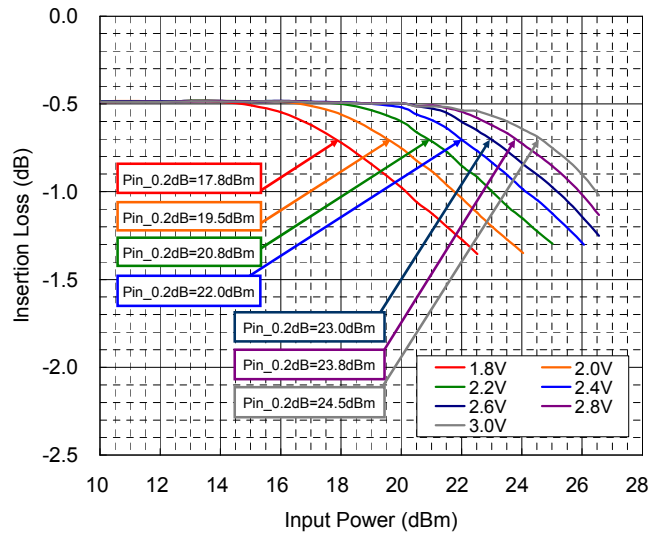


Fig.2 Power Characteristics (f=1.9GHz)

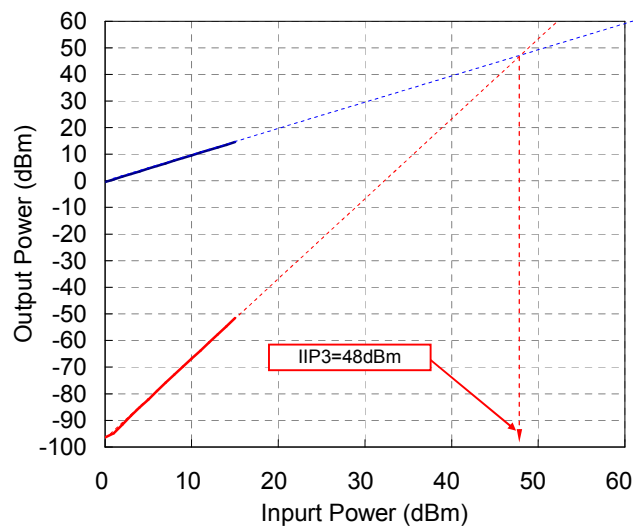


Fig.3 Input IIP3 (f=1.9GHz, VCTL=2.8V)

**CAUTION -Limitation of Applications-**

The product is designed and manufactured for consumer application only and is not available for any application listed below which requires especially high reliability for the prevention of such defect as may directly cause damage to the third party's life, body or property.

- Aircraft equipment.
- Aerospace equipment.
- Undersea equipment.
- Medical equipment.
- Transportation equipment (vehicles, trains, ships, etc.).
- Traffic signal equipment.
- Disaster prevention / crime prevention equipment.
- Application of similar complexity and/ or reliability requirements to the applications listed in the above.

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