

# XMSS1R6G0PA-001

XM001-STD

## CMOS Very Small 1 bit Control SPDT Switch for 0.01~6.0GHz

### ■ Applications

SPDT Switch for Rx portion.

### ■ Features

- Small Package..... 6 pin Leadless Package  
(1mm×1mm×0.4mm|max, RoHS Compliant)
- MSL ..... 3
- HBM..... 1kV

### ■ Absolute Maximum Ratings

Symbol	Parameter	Conditions	Rating	Unit
Vdd	Supply Voltage	Ta = 25°C	4	V
CTL	Control Voltage	Ta = 25°C	4	V
Pin	RF Input Power	Ta = 25°C Vdd = 2.7V CTL(H) = 1.8V, CTL(L) = 0V	20	dBm
Top	Operating Temperature	-	-40 to 90	°C
Tstg	Storage Temperature	-	-55 to 150	°C

### ■ DC Electrical Specifications

Symbol	Parameter	Conditions		Min.	Typ.	Max.	Unit
Vdd	Supply Voltage			1.6	-	3	V
Idd	Supply Current	Ta = 25°C, Vdd = 2.7V CTL(H) = 1.8V, CTL(L) = 0V		-	0.6	2	uA
CTL(H)	Control Voltage (High)	Ta = -40~90°C, VDD = 1.6~3V		1.3	1.8	3	V
CTL(L)	Control Voltage (Low)	Ta = -40~90°C	1.6V≤Vdd<2.3V	-0.2	0	0.3	V
			2.3V≤Vdd≤3V	-0.2	0	0.45	V
Ictl	Control Current	Ta = 25°C, Vdd = 2.7V CTL(H) = 1.8V, CTL(L) = 0V		-	0.01	0.2	uA

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## ■ Electrical Specifications (Ta=25°C, VDD=2.7V, VCTL(H)=1.8V, VCTL(L)=0V, Pin=0dBm)

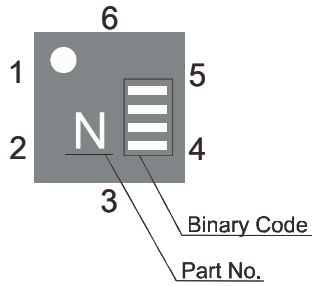
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
IL	ANT to Port1 ANT to Port2	1GHz	-	0.20	0.40	dB
		2GHz	-	0.24	0.45	dB
		2.2GHz	-	0.25	0.50	dB
		2.7GHz	-	0.27	0.50	dB
		3GHz	-	0.28	0.50	dB
		4GHz	-	0.35	0.55	dB
		6GHz	-	0.50	0.70	dB
ISO	ANT to Port1 ANT to Port2	1GHz	33	35	-	dB
		2GHz	25.5	28	-	dB
		2.2GHz	23.5	26.5	-	dB
		2.7GHz	21	24	-	dB
		3GHz	20.5	23	-	dB
		4GHz	16.5	19	-	dB
		6GHz	14	17	-	dB
	Port1 to Port2	1GHz	41	45	-	dB
		2GHz	32	35	-	dB
		2.2GHz	29.5	32.5	-	dB
		2.7GHz	26	29	-	dB
		3GHz	25	28	-	dB
		4GHz	18	21	-	dB
		6GHz	14	17	-	dB

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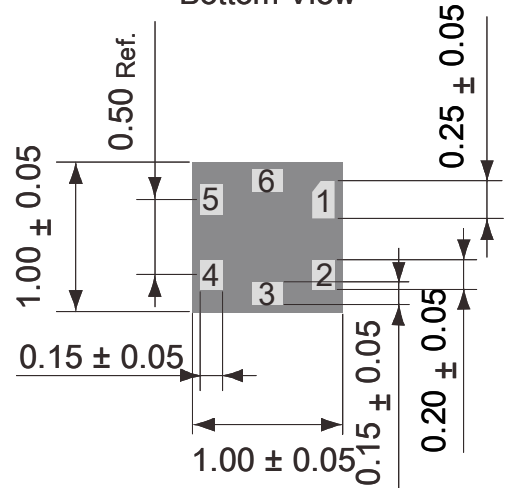
## Package Outline and Pin Connections

Top View

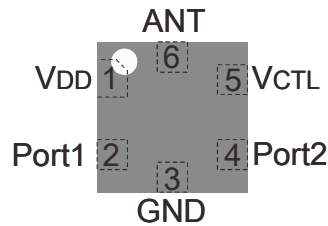


0.40 Max.

Bottom View

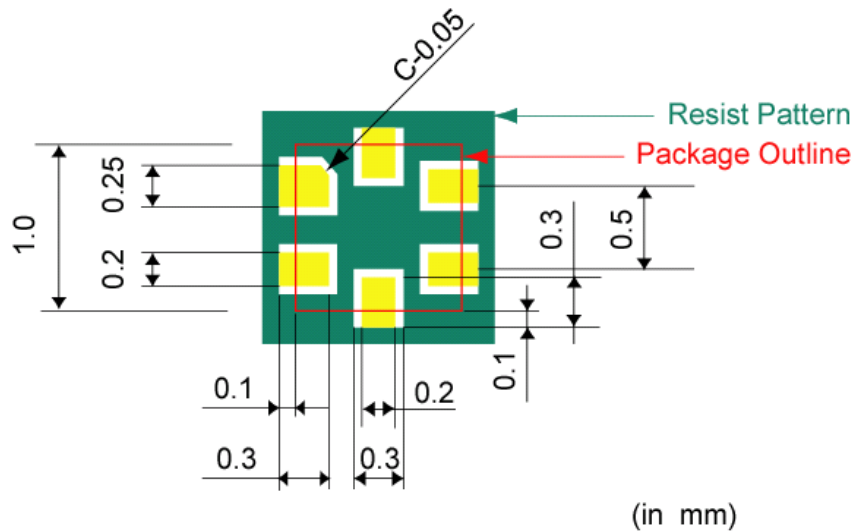


Top View



(in mm)

## Land Pattern



(in mm)

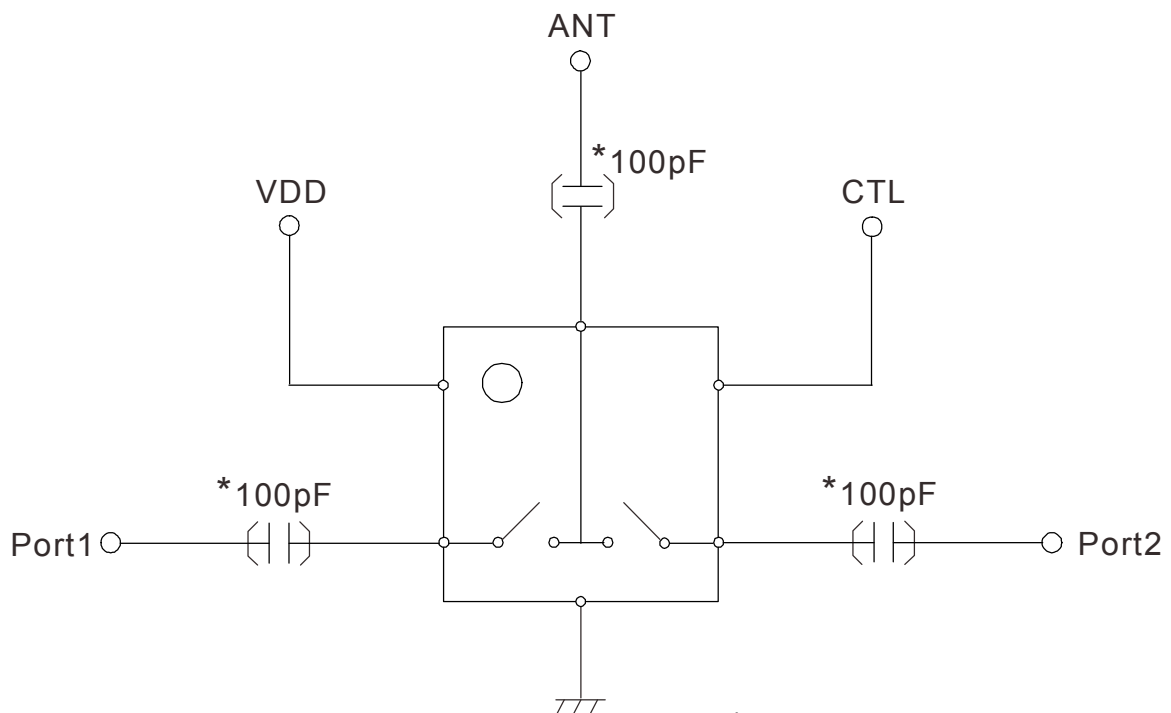
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## ■ Truth Table

Mode	Vdd	CTL
ANT-Port1	H	H
ANT-Port2	H	L

## ■ Evaluation Circuit



\* DC blocking capacitor = 100pF  
for Cellular Band usage

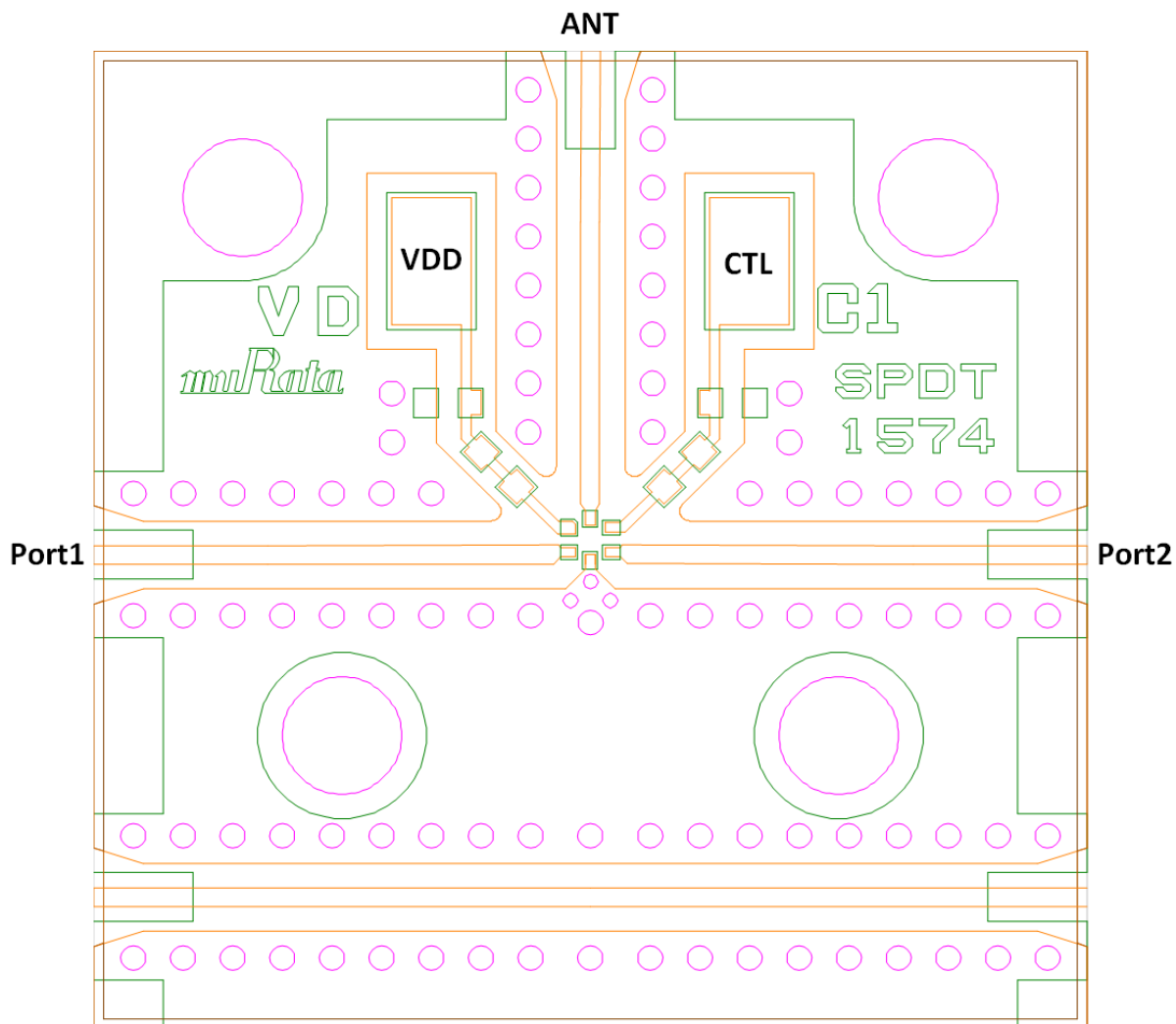
These additional parts below are NOT required.

1. DC blocking capacitors on RF ports can be removed if DC Voltage from external = 0V.
2. DC bypass capacitors on Vdd & control lines are not required.

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## ■ Evaluation Board



Substrate  
Material : FR4 (  $\epsilon_r=4.4$  )  
Size : 30mm  $\square$  30mm  
Thickness : 0.2mm + Dummy 0.4mm

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Preliminary

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## Change History

Version	Date	Author	Comment
-	Apr. 23. 2013	Y. Tannan	Initial