

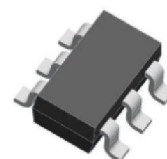
MSW0240D2

20MHz~4GHz GaAs SPDT Switch

MEGSINE 兆讯

FEATURES

- 1, Typical input 1 dB compression point of +30 dBm
- 2, Low insertion loss:
0.35 dB @ 1000 MHZ
0.65 dB @ 3000 MHZ
- 3, 1.8V minimum power supply voltage
- 4, Single-pin or complementary logic control inputs



APPLICATIONS

- 1, 802.11 b/g WLAN Transceivers
- 2, Small Cell & Pico
- 3, Cellular communication module

DESCRIPTION

The MSW0240D2 is designed to cover a broad range of applications from 20 MHz through 4000 MHz. Its a reflective switch manufactured on GaAs process can be controlled using either single-pin or complementary control inputs. Using 1.8V minimum power supply voltage, a typical input 1dB compression point of +33.5 dBm can be achieved. All components are 100% RF tested.

MAXIMUM RATINGS

Symbol		Min	Max	Unit
V_{DD}	Power supply voltage	0	5.0	V
T_{ST}	Storage temperature range	-40	125	°C
T_{OP}	Operating temperature range	-40	105	°C
P_{IN}	Input power	-	27	dBm
V_{ESD}	ESD Voltage (HBM)	-	1000	V

ELECTRICAL SPECIFICATIONS @ +25°C, V_{DD} = 3V 50Ω

Parameter	Condition	Minimum	Typical	Maximum	Unit
Operation frequency		10		4000	MHz
Insertion loss	1000 MHZ	-	0.26	0.32	dB
	3000 MHZ	-	0.35	0.6	dB
Isolation	1000 MHZ	26	30	-	dB
	3000 MHZ	25	27	-	dB
Return loss	1000 MHZ	25	29	-	dB
	3000 MHZ	30	35	-	dB
'ON' switching time	50% CTRL to 0.1 dB of final value, 1 GHz	-	-	30	ns
'OFF' switching time	50% CTRL to 25 dB isolation, 1 GHz	-	-	100	ns
Video feedthrough		-	25	-	mV
IP1dB	1000MHz @ 0-3V	30	-	-	dBm
	3000MHz @ 0-3V	29	-	-	dBm
Input iP3	1000 MHz, 5dBm input power	45	-	-	dBm

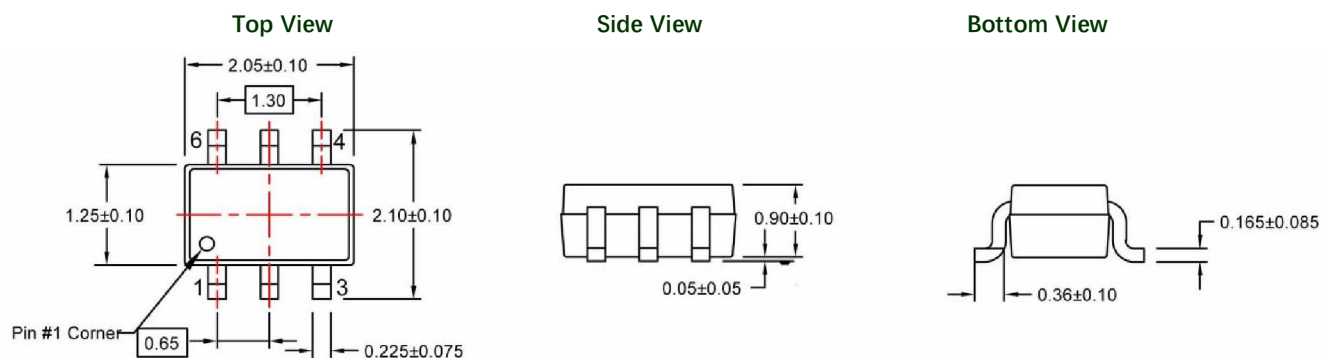
All Use For RF & Microwave

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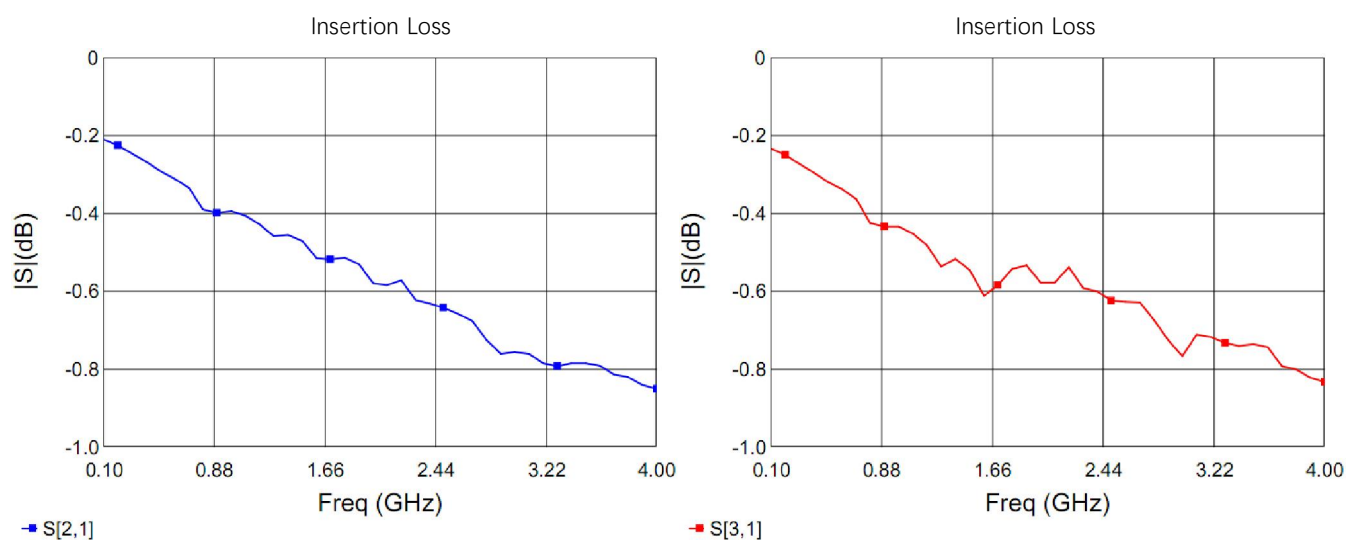
SHAPES AND DIMENSIONS



Terminal Functions

1	RF1	RF Port1
2	GND	Traces should be connected to ground plane for best performance.
3	RF2	RF Port2
4	V1	Switch control input logic level or GND used for SPST switch
5	RFC	RF common.
6	V2	Switch control input logic level or GND used for SPST switch

FREQUENCY CHARACTERISTICS



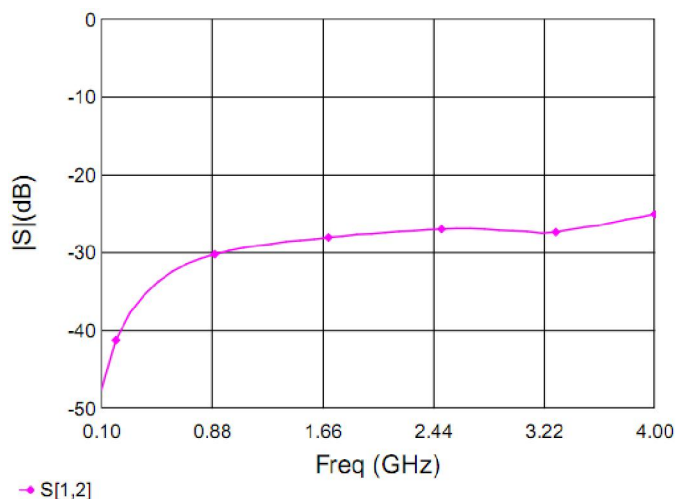
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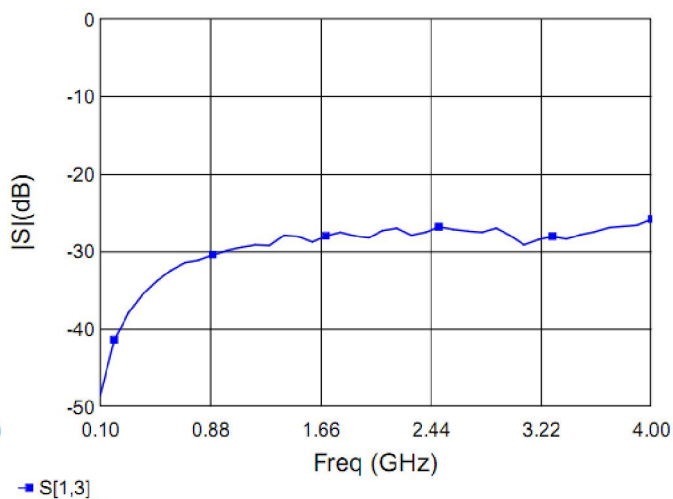
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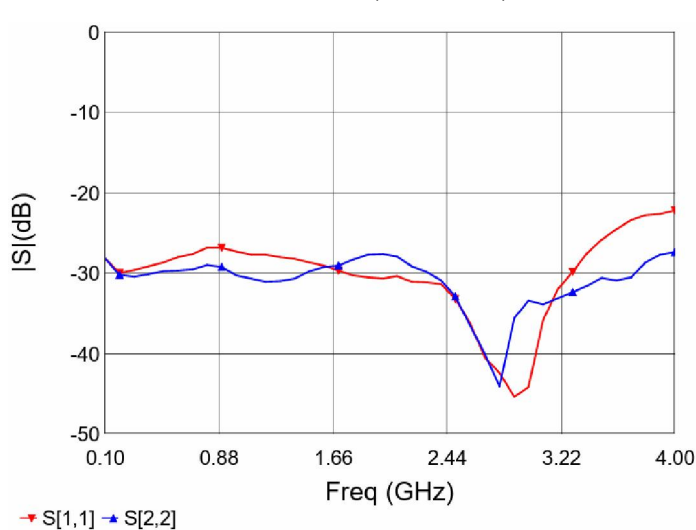
Isolation - Input to Output 1



Isolation - Input to Output 2



Return Loss - Input and Output



CONTROL LOGIC TRUTH TABLE

Single-pin Control Logic

Control Voltages	Signal Path
Pin 6 = V_{DD} Pin 4 = High	RFC to RF1 ON
Pin 6 = V_{DD} Pin 4 = Low	RFC to RF1 OFF

Complementary-pin Control Logic

Control Voltages	Signal Path
Pin 6 = Low Pin 4 = High	RFC to RF1
Pin 6 = High Pin 4 = Low	RFC to RF2

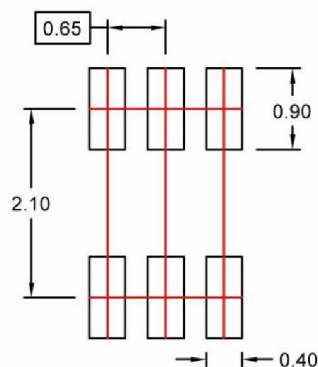
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RECOMMENDED LAND PATTERN



ORDERING INFORMATION

Device	Package	Reel	Shipping
MSW0240D2	SOP6	7"	3000 Reel

Revision	Description	Date
Rev0	Preliminary	2021/2/26
Rev1	Packing	2021/5/22

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