

HPS Series

30 – 512MHz 75W SPDT RF Switch

Features

- Frequency Range: 30 - 512MHz
- Insertion Loss: 0.8dB
- Isolation: 75dB
- Maximum P_{in} TX: 75W; RX: 25W
- DC Power 1: +5V/200mA,
- DC Power 2: +28V/200mA
- Asymmetric Design
- SMA Connector

Picture



Description

HPS-512 is a 75W Single Pole Double Throw (SPDT) Asymmetric High Power RF Silicon PIN Diode Switch designed for frequency range from 30MHz to 512MHz.

Electrical Specifications @ +25 °C, 50 Ω System, DC1=+5V, DC2=+28V

Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	MHz	30		512
Insertion Loss	dB		0.8	1.0
Isolation (J1 to J2, J1 to J3)	dB	65	75	
Isolation (J2 to J3)	dB	65	75	
VSWR			1.2:1	1.7:1
Maximum Input P_{in} (J2 to J1) TX	W		75	
P_{in} (J1 to J3) RX	W		25	
Switching Time ANT-RX to ANT-TX	μ s		15	
ANT-TX to ANT-RX	μ s		2	
Control Voltage T/R SW (HCMOS)	V	0		5
DC Power Supply 1	V		5	
Supply Current 1	mA		100 - 160	200
DC Power Supply 2	V		28	
Supply Current 2	mA		90 - 170	200

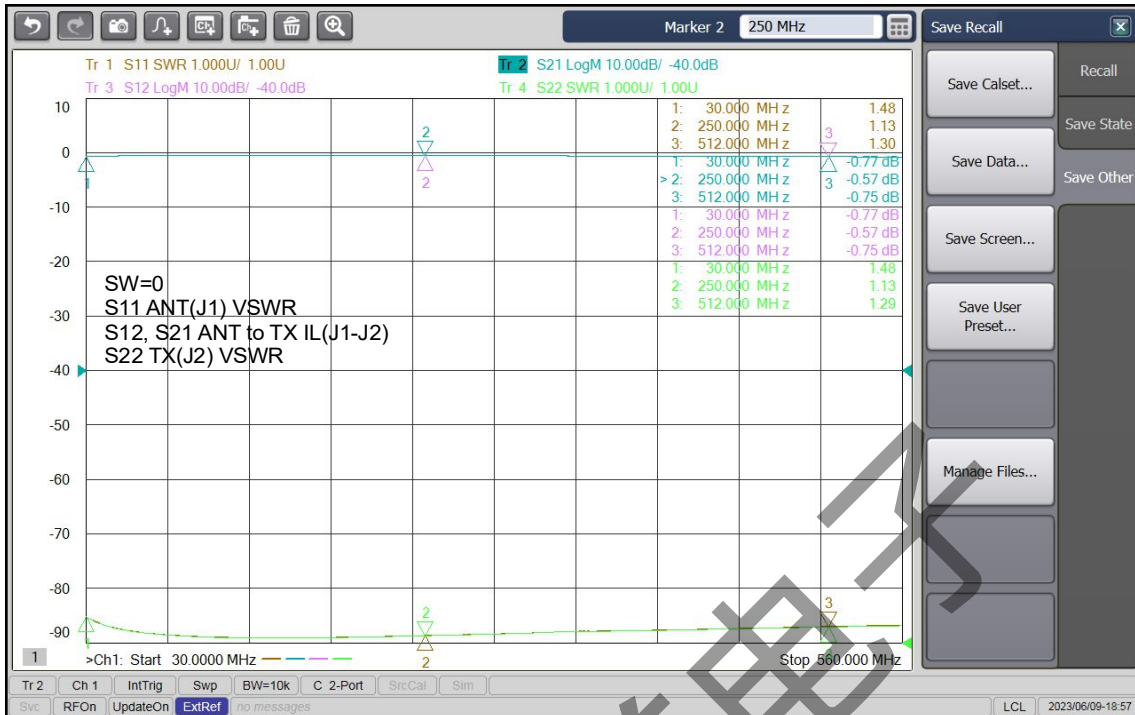
J1 is RFC Port, J2, J3 Not Interchangeable

Port Example J1=ANT, J2=TX, J3=RX

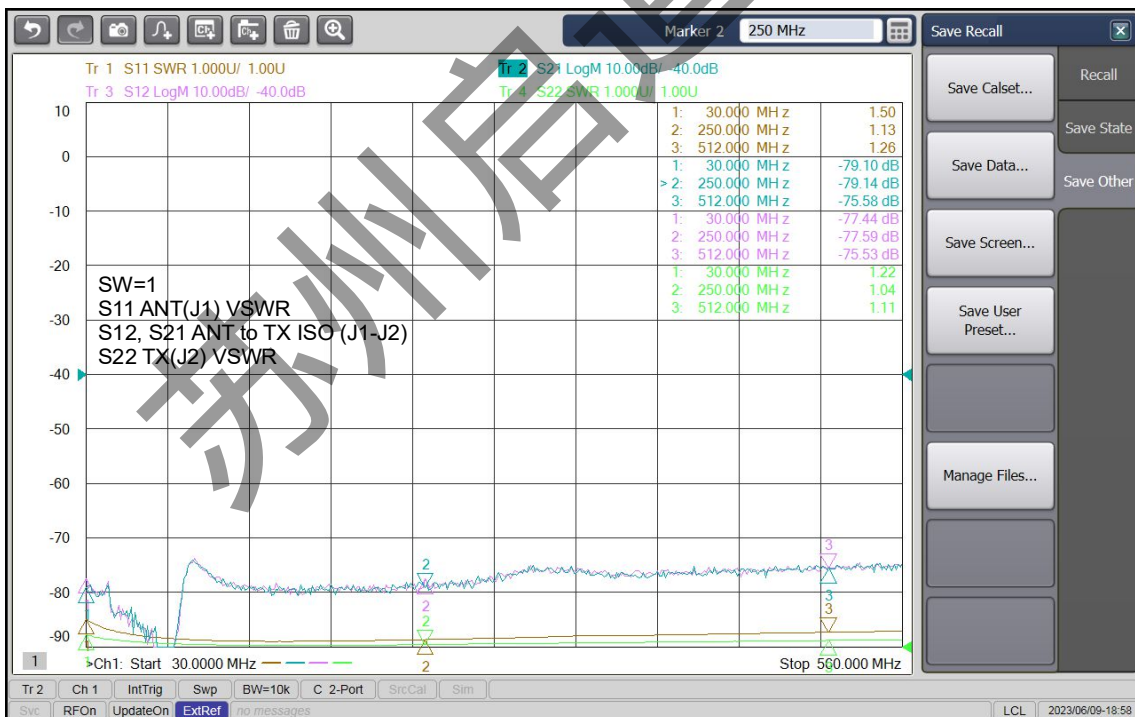
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Insertion Loss Path ANT-TX (J1-J2), SW=0



Isolation Path ANT-TX (J1-J2), SW=1



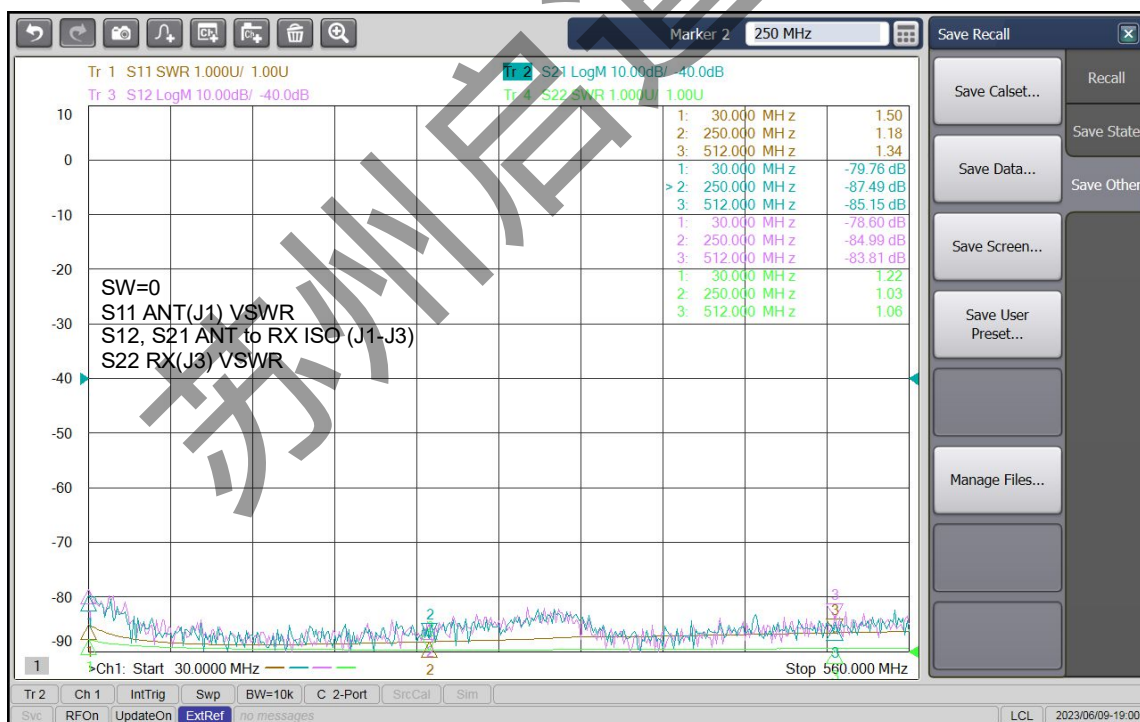
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Insertion Loss Path ANT-RX (J1-J3), SW=1



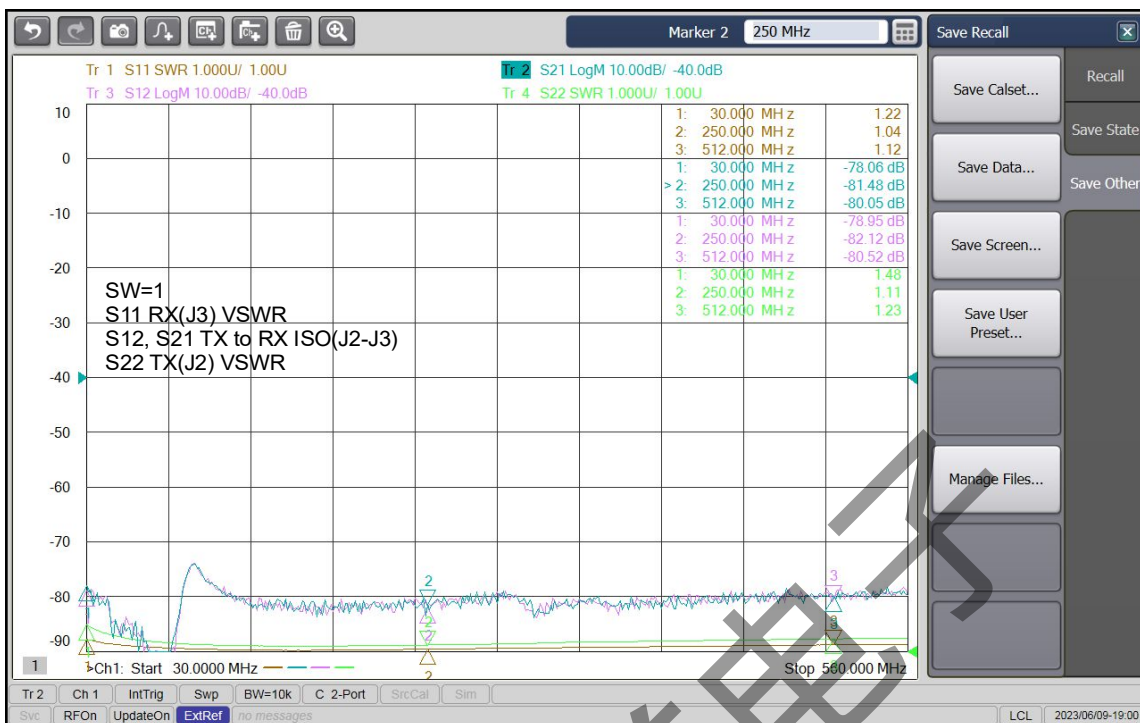
Isolation Path ANT-RX (J1-J3), SW=0



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Isolation Path TX-RX (J2-J3), SW=1



Isolation Path TX-RX (J2-J3), SW=0



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Absolute Maximum Ratings

Parameter	Absolute Maximum
Supply Voltage	DC1: +6V, DC2: +32V
RF Input Power	J2: 100W, J3: 35W
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +125 °C

Truth table

T/R SW Input	Signal Path State
High SW=1 (+5V)	J1 to J3 (ANT to RX)
Low SW=0 (GND)	J1 to J2 (ANT to TX)

ESD Sensitive Material



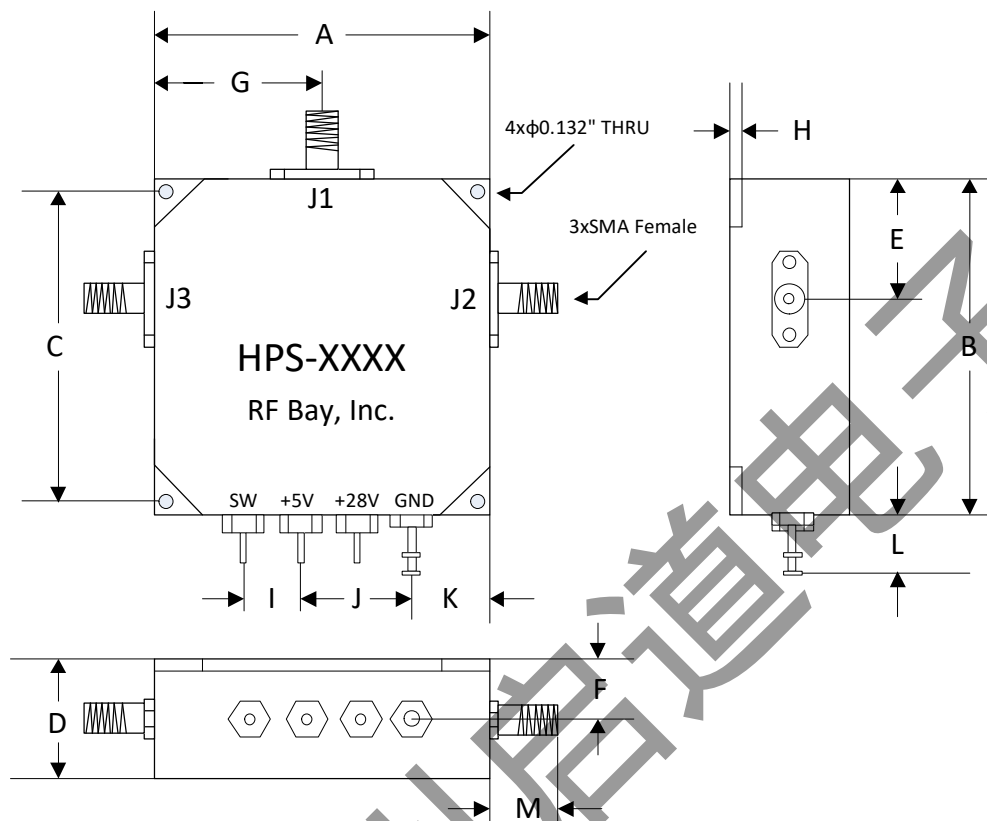
Warning and Caution:

- 1) Adequate heatsink or mount HPS on a large size metal plate is highly recommended.
- 2) All 3 RF Ports must be connected to 50 Ohm system at all time.
- 3) Hot switch is not recommended.

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Outline



	A	B	C	D	E	F	G	H	I
Inch	1.74	1.74	1.54	0.62	0.65	0.31	0.87	0.06	0.3
mm	44.2	44.2	39.12	15.75	16.5	7.87	22.1	1.52	7.62
	J	K	L	M					
Inch	0.6	0.42	0.38	0.365					
mm	15.24	10.67	9.65	9.27					