



WSPDT10180A

1.0 - 20.0 GHz 2 Watts SPDT Switch

REV A
June 2011

Key Features



- 1.0 ~ 20.0 GHz
- 1.5 dB Insertion Loss
- 33.0 dBm Power Handling
- 50 nS Switching Speed
- 1.5:1 VSWR
- Built-in DC Block Capacitors
- 2-Bit Switching Control
- >68 Years MTBF
- SMT Format
- RoHS compliant

Product Description

WSPDT10180A integrates WanTcom proprietary switching technology, high frequency micro electronic assembly techniques, and high reliability design to realize optimum insertion loss, wideband, high power, and in SMT format together. With simple 2-bit DC control, the switch performs the single pole double throw (SPDT) in the specified frequency range at 50-Ohm impedance system. The amplifier has standard 0.67" x 0.73" gold plated housing.

Applications

- S to Ku Communications
- Satellite Communications
- Broadcast
- Security System
- Measurement
- Fixed Wireless

The amplifier is designed to meet the rugged standard of MIL-STD-883.

Specifications

Summary of the electrical specifications WSPDT10180A at room temperature

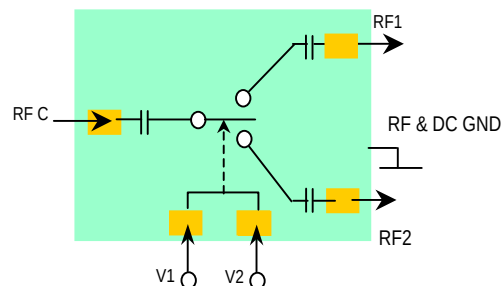
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Insertion Loss ¹	S_{12}, S_{13}	1.0 ~ 18.0 GHz, In Contact Path, with SMA Connectors		1.5	2.5	dB
2	VSWR	SWR_i	1.0 ~ 18.0 GHz		1.5:1	2.0:1	dB
3	Max Power Handling	P_{MAX}	1.0 ~ 18.0 GHz, CW			33.0	dBm
4	Switching Speed	t_s	1.0 ~ 18.0 GHz, 10% to 90% RF and 90% to 10% RF		50	100	nS
5	Isolation	S_{12}, S_{13}	1.0 ~ 18.0 GHz, In Isolation Path	27	35		dB
6	Input P1dB	IP_{1dB}	1.0 ~ 18.0 GHz, 0/-5V		30		dBm
7	Control Voltage, High	V_{ch}		-0.2	+0	+0.2	V
8	Control Voltage, Low	V_{cl}		-6.0	-5.0	-4.0	V
9	Current Consumption	I_{cc}	Control Line, High or Low		5	50	uA
10	Thermal Resistance	$R_{th,c}$	Junction to case,			30	°C/W
11	Operating Temperature	T_o		-40		+85	°C

Absolute Maximum Ratings

Parameters	Units	Ratings
DC Control Voltage, High	V	+0.5
DC Control Voltage, Low	V	-7
Current	mA	40
Total CW Power Dissipation	W	2.5
RF Port Maximum DC Voltage	V	25V
Channel Temperature	°C	150
Storage Temperature	°C	-55 ~ 125
Operating Temperature	°C	-40 ~ 85

Operation of this device above any one of these parameters may cause permanent damage.

Functional Block Diagram



Ordering Information

Model Number	WSPDT10180A
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Truth Table

V_1	V_2	RF1	RF2
LOW	HIGH	ON	Isolation
HIGH	LOW	Isolation	ON

¹ SMA connector has - 0.25 dB insertion loss each. The insertion loss is around 0.50 dB less than the typical data at 18 GHz.

Specifications and information are subject to change without notice.



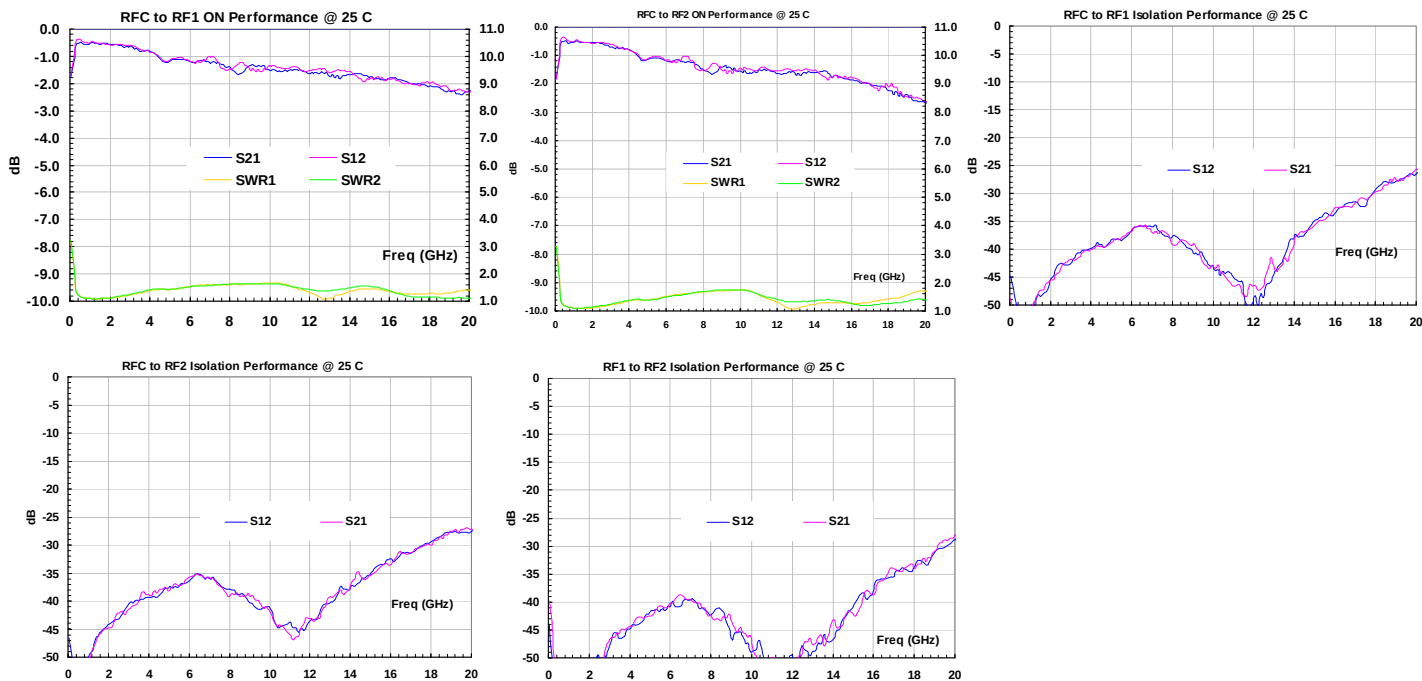
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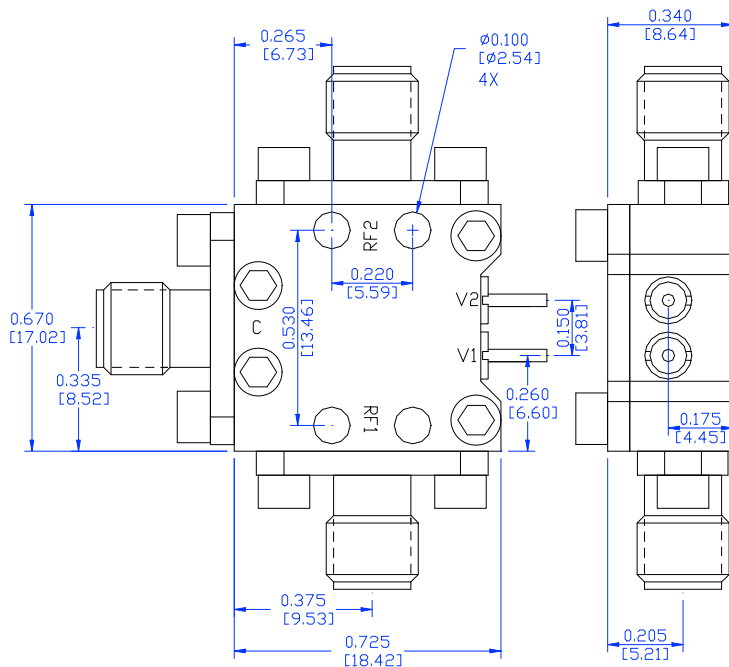
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V_{LOW} = -5V, V_{HIGH} = 0 V.

Typical Data



Outline



NOTES

1. MATERIAL: Brass
2. TOLERANCE IS NON-ACCUMULATIVE
3. FINISH:
 - A. DEBURR AND BREAK SHARP EDGES
 - B. 10 micro Inch maximum gold plating.
4. All SMA F connectors are field replaceable.

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