SW12A003

SP12T Absorptive Switch
2GHz to 18GHz

RF for RF Engineers

PRODUCT INFO

Description:

Amplical's SW12A003 SP12T broadband coaxial absorptive PIN diode switch features low insertion loss, low vswr, high isolation and fast switching speed. Internal 50Ω terminations are provided on J1 through J12 when switched in the isolation (off) state. RF ports incorporate DC blocks. An on-board 4-bit BCD TTL-compatible driver is incorporated for convenient logic control. The switch operates from +5V DC and a negative DC supply ranging from –12V to –20V. The compact design incorporates field-replaceable SMA female connectors which can be removed for drop-in microstrip or stripline applications. Three ø0.096 through holes are provided for convenient chassis mounting.

Specifications:

Parameter	Specification
Frequency Range	2 GHz to 18 GHz minimum
Insertion Loss	2.5 dB @ 2GHz linearly increasing to 5.5 dB @ 18GHz maximum
VSWR (J0 through J12 on; J1 through J12 off)	2.0:1 maximum (50Ω)
Isolation (port-to-port and input-to-output)	70 dB minimum (above insertion loss)
Switching Speed: T_{ON} (50%TTL to 90%RF)	100 nsec maximum
Switching Speed: T_{OFF} (50%TTL to 10%RF)	75 nsec maximum
Switching Speed: T_{RISE} (10%RF to 90%RF)	30 nsec maximum
Switching Speed: T_{FALL} (90%RF to 10%RF)	15 nsec maximum
RF Power, Operating	+27 dBm maximum
OIP3	+45 dBm minimum
OIP2	+75 dBm minimum
Control Logic	4-bit BCD TTL (See Table 1)
DC Supplies	+5.0 ± 0.3V @ 330mA maximum
	-12.0 to -20.0V @ 40mA maximum
RF Connectors	SMA Female per MIL-PRF-39012
DC and Logic Control Ports	ø0.030" x 0.20" long solder pin
Operating Temperature	-55°C to +85°C
Storage Temperature	-65°C to +125°C
Enclosure Finish	Albaloy
Lead Finish	Gold Plate per MIL-G-45204
Weight	60 grams maximum
Mechanical	See Figure 1

Table 1 Control Logic:

E1	E2	E3	E4	Function	E1	E2	E3	E4	Function	E1	E2	E3	E4	Function
0	0	0	0	J1 to J0 ON	1	0	1	0	J6 to J0 ON	0	1	0	1	J11 to J0 ON
1	0	0	0	J2 to J0 ON	0	1	1	0	J7 to J0 ON	1	1	0	1	J12 to J0 ON
0	1	0	0	J3 to J0 ON	1	1	1	0	J8 to J0 ON	0	0	1	1	All OFF
1	1	0	0	J4 to J0 ON	0	0	0	1	J9 to J0 ON	1	0	1	1	All OFF
0	0	1	0	J5 to J0 ON	1	0	0	1	J10 to J0 ON	0	1	1	1	All OFF
										1	1	1	1	All OFF

Customization:

Amplical offers complete customization of any electrical or mechanical parameter for any product. All models are available with hermetic seal and complete MIL screening. Contact the factory to discuss your specific requirements

About Amplical Corporation:

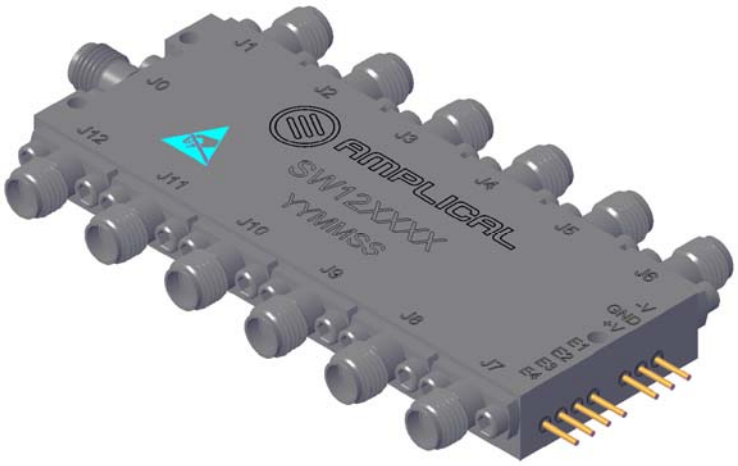
Amplical is a leading supplier of high quality RF and Microwave components. Utilizing state of the art design and manufacturing techniques, Amplical focuses on producing high performance amplifiers, switches, modulators, attenuators, phase shifters and limiters at affordable prices. Amplical serves the defense, aerospace, communications, test and instrumentation markets.

Disclaimer:

Specifications subject to change without notice. Contact the factory prior to placing an order to assure you have the most up to date product specification.

Applications:

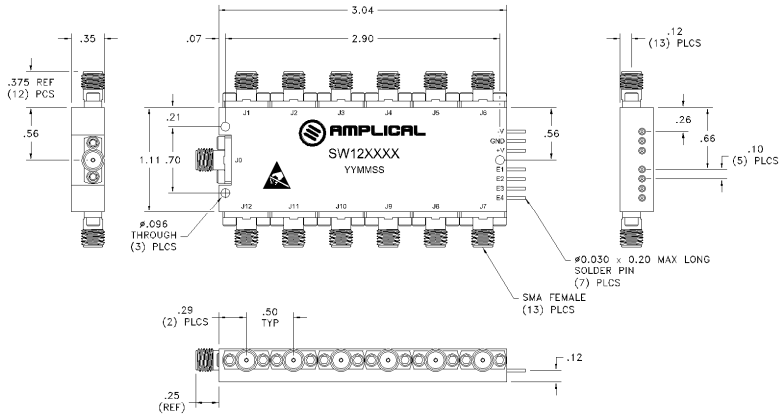
- Communications Systems
- Electronic Simulators
- Bypass/Selector Switch
- Test Equipment
- Radar Systems
- EW Systems



Custom Options:

- Hermetic Seal
- Alternate DC operating voltage supplies
- MIL / Hi-Rel Screening
- Band-specific performance optimization
- Unit-to-unit phase and amplitude matching
- Reverse control logic

Figure 1 Mechanical Outline:



Outline drawing notes:

1. Drawing not to scale
2. Dimensions in inches
3. Tolerance: x.xx = ±0.020, x.xxx = ±0.010
4. J0: RF common

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