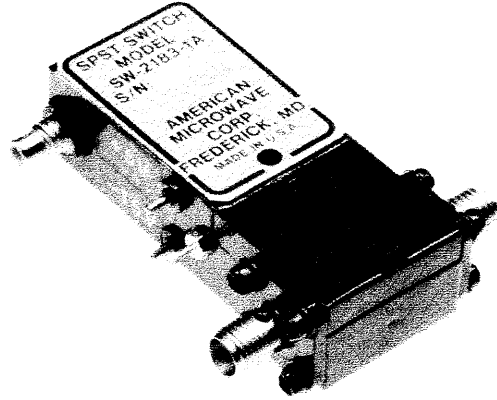




AMERICAN Microwave Corporation

SERIES SW-218 WIDEBAND SPST PIN DIODE SWITCHES WITH INTEGRAL DRIVERS



FEATURES

- 0.5 to 18 GHz Frequency Range
- Low Insertion Loss
- Up to 85 dB Isolation
- High Speed - 10 nsec
- Small Size
- Light Weight
- Rugged Chip and Microstrip Construction

DESCRIPTION

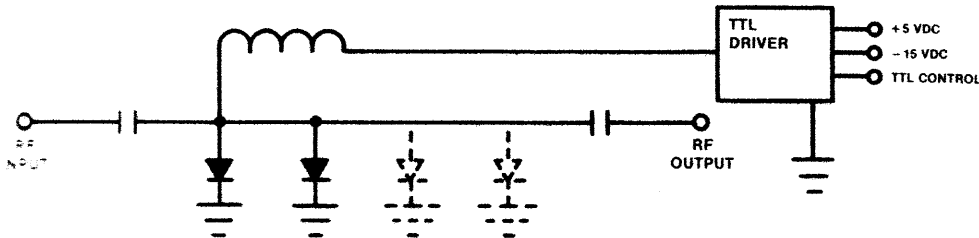
The series SW-218 switches are broadband, high speed, low loss SPST switches with integral drivers. They are powered by +5 and -15 volt supplies and are available powered by ± 15 volts. They are available in three models that operate over the entire 0.5 to 18 GHz band. Each features rugged integrated circuit assemblies of chip PIN on a microstrip transmission line and proprietary wideband bias decoupling circuitry.

Switching is accomplished by a TTL compatible driver which is controlled by the user.

SPECIFICATIONS

- Control Impedance - TTL Compatible, Two Load. (A Load is 1.6 mA Sink Current and 40 μ A Source Current.)
- Control Logic - Logic "0" (-0.3 to +0.7 Volt) for Switch OFF. Logic "1" (+2.5 to +5.0 Volts) for Switch ON.
- Temperature - Operating: -65°C to +85°C Non-operating: -65°C to +125°C
- Humidity, Shock, Etc. - Per MIL-STD 202C

FUNCTIONAL SCHEMATIC



10/89

7311G GROVE ROAD, FREDERICK, MARYLAND 21701 (301) 662-4700

SPECIFICATIONS, Cont'd.

MODEL NO.	CHARACTERISTICS	FREQUENCY (GHz)						RISE/FALL * TIME	POWER HANDLING CAPABILITY		POWER SUPPLY		
		0.5 to 1.0	1.0 to 2.0	2.0 to 4.0	4.0 to 8.0	8.0 to 12.4	12.4 to 18.0		ON-to-OFF and OFF-to-ON	AVG (WATTS)	Peak 1 μ sec, max, pw (WATTS)	+ 15 VDC	+ 5 VDC
SW-2182-1A	Min Isolation (dB)	30	40	45	45	45	45	10 ns	2	10	100 mA	100 mA	45 mA
	Max Ins Loss (dB)	1.0	1.0	1.0	1.1	1.6	2.0						
	Max VSWR (ON Pos)	1.3	1.3	1.4	1.6	1.9	1.9						
SW-2183-1A	Min Isolation (dB)	40	60	70	70	70	70	10	2	10	100 mA	100 mA	45 mA
	Max Ins Loss (dB)	1.0	1.0	1.1	1.4	1.8	2.3						
	Max VSWR (ON Pos)	1.4	1.4	1.4	1.6	1.9	1.9						
SW-2184-1A	Min Isolation (dB)	45	70	85	85	85	80	10	2	10	100 mA	100 mA	45 mA
	Max Ins Loss (dB)	1.0	1.0	1.2	1.5	2.0	2.5						
	Max VSWR (ON Pos)	1.4	1.4	1.4	1.6	1.9	1.9						

*Rise/Fall times are 10% to 90% RF
and 90% to 10% RF.

*TTL delay is 20 ns, Max from 50% TTL
to 90% RF for turn-off or
50% TTL to 10% RF for turn-on.

ENVIRONMENTAL RATINGS

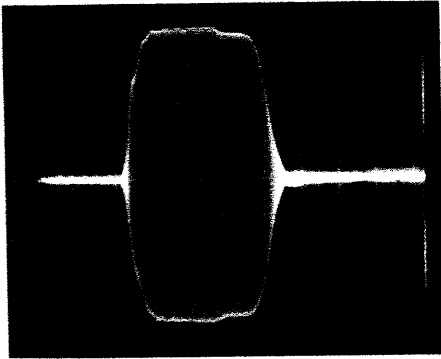
Operating Temperature - 65° C to 110° C
 Non-Operating Temperature - 65° C to 125° C
 Humidity MIL-STD-202F, METHOD 103B
 Shock MIL-STD-202F, METHOD 213B
 Vibration MIL-STD-202F, METHOD 204D
 Altitude MIL-STD-202F, METHOD 105C
 Temp Cycling MIL-STD-202F, METHOD 107D

AVAILABLE OPTIONS

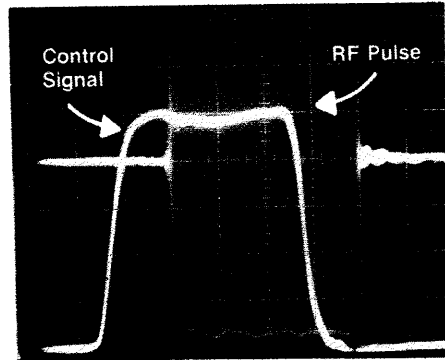
Option No.	Description
001	Two SMA Male RF Connectors
002	One SMA Male and One SMA Female RF Connector
003	Solder Type Control Terminals
004	\pm 15 Volt Power Supply Requirement (+ 5, - 15 Volt is Standard)
005	50 Ohm Control Impedance
006	Cannon Multipin MDM9SSP
007	Inverted Logic
008	Extend Frequency to 100 MHz
010	50 ns, Max Switching Speed (5 watts, cw, max)
012	2 ns, Max Switching Speed (100 mw, cw, max)
013	- 12 VDC Power Supply Requirement
103	Integral Video Filters (2-18 GHz Frequency Band)

TYPICAL PERFORMANCE

PULSE CHARACTERISTICS

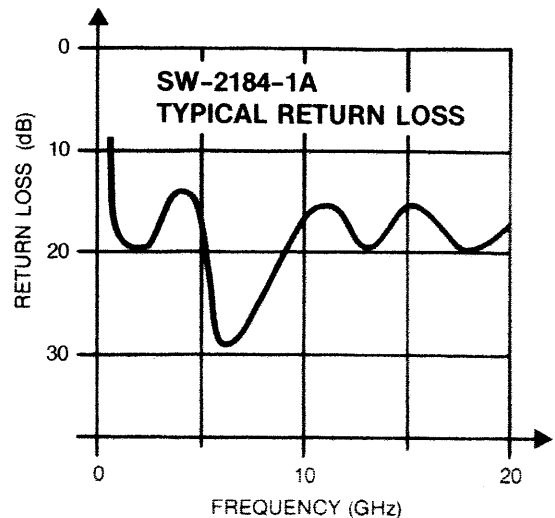
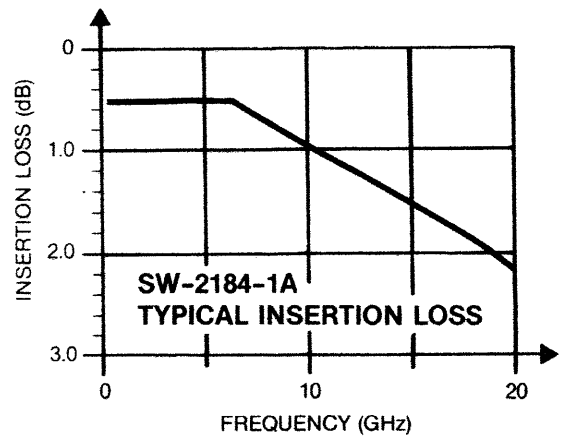
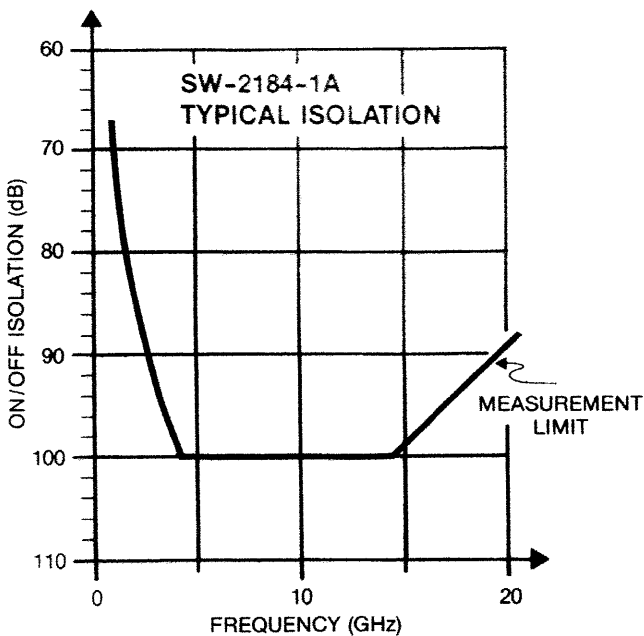


TYPICAL
15 ns Pulse Modulated
Signal at 2.3 GHz
(5 ns/Division)
SW-2184-1A, Option 012, 103

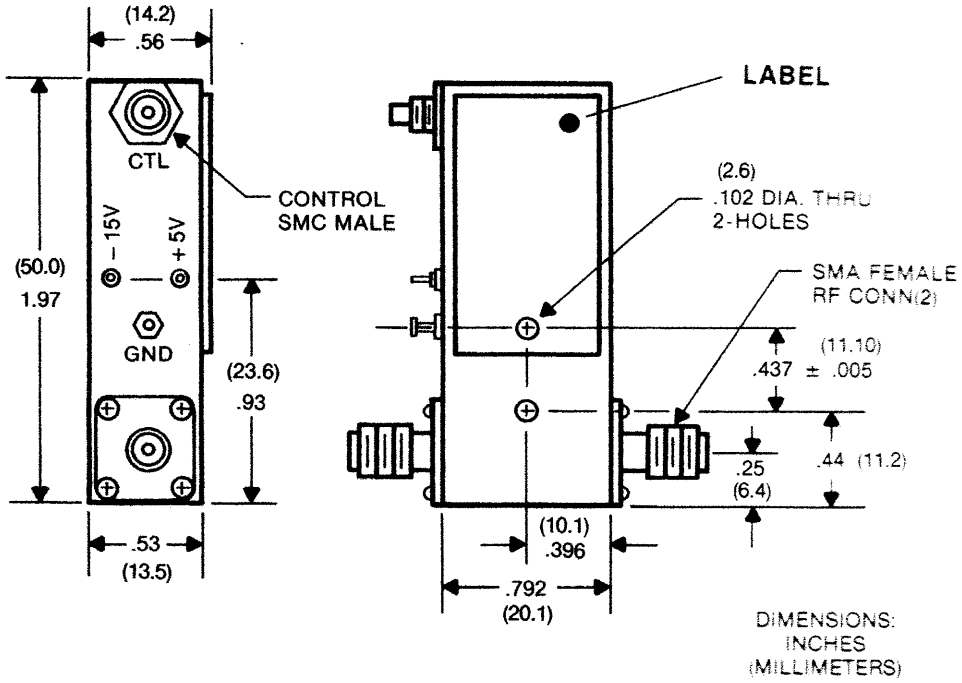


TYPICAL
40 ns Pulse Modulated Signal
at 7 GHz with Control
Pulse Super-imposed
(10 ns/Division)
SW-2184-1A, Option 012, 103

STATIC RESPONSE



MECHANICAL DATA



TRUTH TABLE

Logic	RF
0	OFF
1	ON

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