

SERIES SWN-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

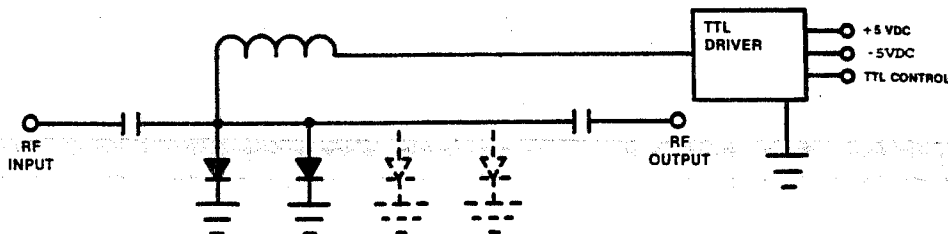
The series SWN-218 switches are broadband, high speed, low loss SPST switches with integral drivers. They are powered by +5 and -5 volt supplies and are available powered by ± 15 volts. They are available in three models that operate over the entire 0.5 to 18 GHz band. Each features rugged integrated 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



07/94

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		AVG (WATTS)	Peak 1 μ sec, max, pw (WATTS)	+5 VDC	-5 VDC
SWN-2182-1A	Min Isolation (dB)	30	40	45	45	45	45	10 ns	2	10	100 mA	45 mA
	Max Ins Loss (dB)	1.0	1.0	1.1	1.6	2.0	2.0					
	Max VSWR (ON Pos)	1.3	1.3	1.4	1.6	1.9	1.9					
SWN-2183-1A	Min Isolation (dB)	40	60	70	70	70	70	10	2	10	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					
SWN-2184-1A	Min Isolation (dB)	45	70	85	85	85	80	10	2	10	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 60 nsec, Max from 50% TTL to 90% RF for turn-off or 50% TTL to 10% RF for turn-on.

ENVIRONMENTAL RATINGS

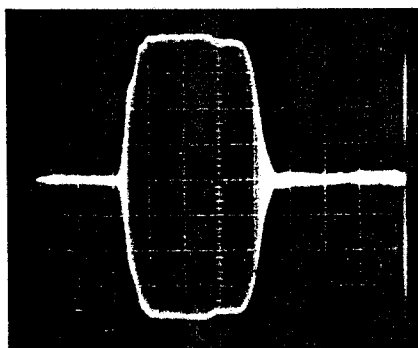
Operating Temperature - 65° C to 110° C
 Non-Operating Temperature - 65° C to 125° C
 Humidity MIL-STD-202F, METHOD 103B
 Shock MIL-STD-202F, METHOD 213B
 Vibration MIL-STD-202F, METHOD 204D
 Altitude MIL-STD-202F, METHOD 105C
 Temp Cycling MIL-STD-202F, METHOD 107D

AVAILABLE OPTIONS

Option No.	Description
001	Two SMA Male RF Connectors
002	One SMA Male and One SMA Female RF Connector
003	SMC Control Connector (Solder Type is Standard)
004	± 15 Volt Power Supply Requirement (± 5 Volt is Standard)
005	50 Ohm Control Impedance
006	Cannon Multipin MDM9SSP
007	Inverted Logic
008	Extended Frequency to 100 MHz
010	50 ns, Maximum Switching Speed (5 watts cw, maximum)
012	2 ns, Maximum Switching Speed (100 mw, cw maximum)
013	-12 VDC Power Supply Requirement (+5V, -5V is Standard)
103	Integral Video Filters (2-18 GHz Frequency Band) Insertion loss Increase of 0.75 Db maximum
HS	High Speed Version - 20 nsec. Delay
AT	Off Arm Termination

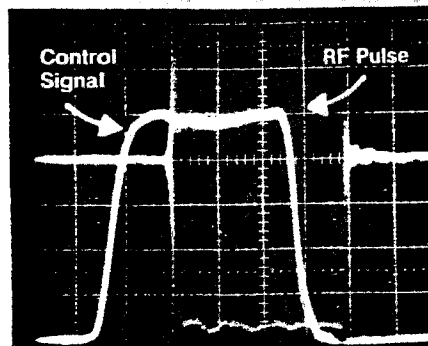
TYPICAL PERFORMANCE (SWN-2184-1A)

PULSE CHARACTERISTICS



TYPICAL
15 ns Pulse Modulated
Signal at 2.3 GHz
(5 ns/Division)

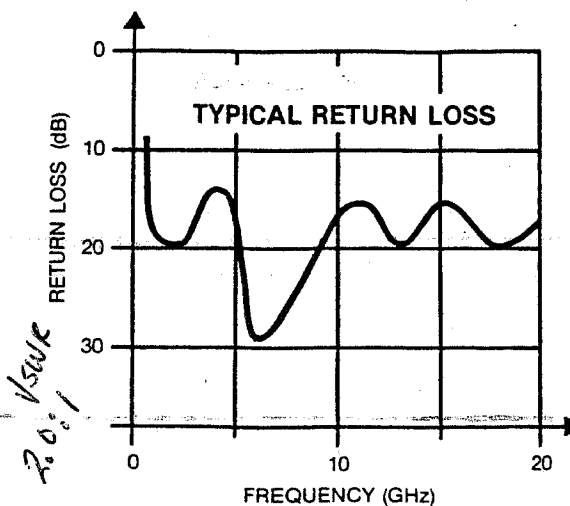
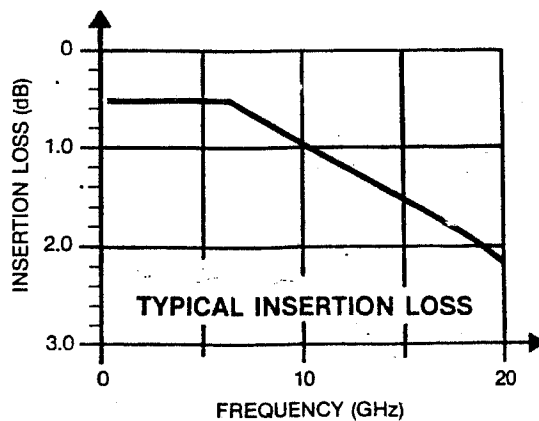
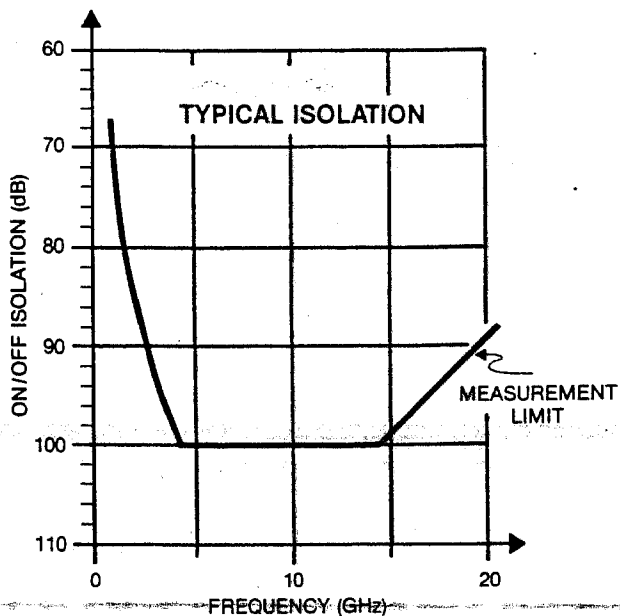
SWN-2184-1A, Option 012, 103, HS



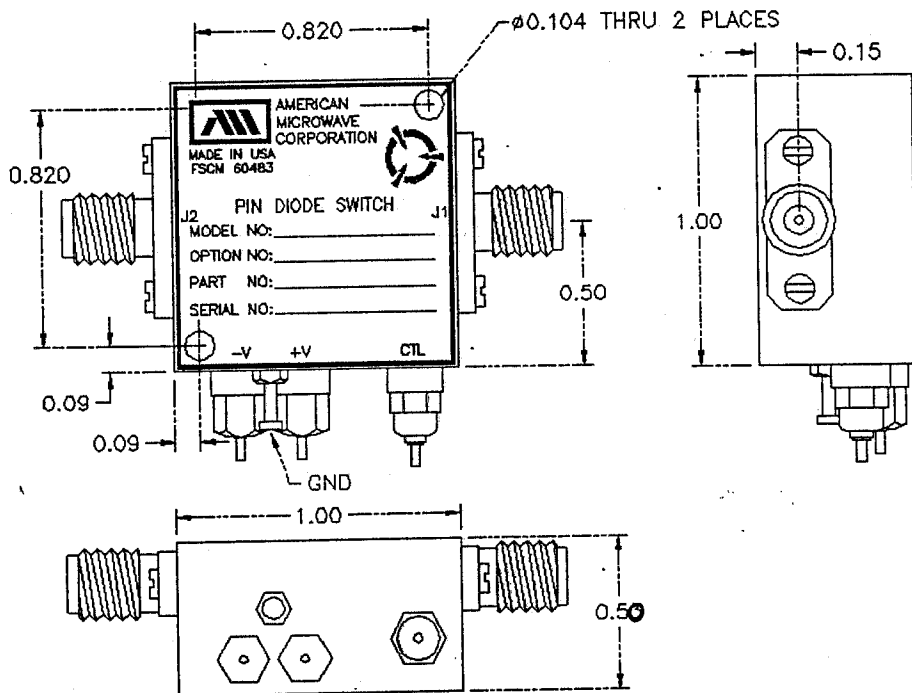
TYPICAL
40 ns Pulse Modulated Signal
at 7 GHz with Control
Pulse Super-imposed
(10 ns/Division)

SWN-2184-1A, Option 012, 103, HS

STATIC RESPONSE



MECHANICAL DATA



LOGIC TABLE

LOGIC	RF
0	OFF
1	ON