



**AMERICAN MICROWAVE  
CORPORATION**

**TEST DATA**

**ON**

**0.5 TO 18.0 GHz**

**VERY HIGH SPEED**

**VERY HIGH ISOLATION**

**REFLECTIVE SPST PIN DIODE SWITCH**

**AMC MODEL No:  
SWN-AKG-1DR-12X**

Serial No: 1MS503173

**BY  
AMERICAN MICROWAVE  
CORPORATION**

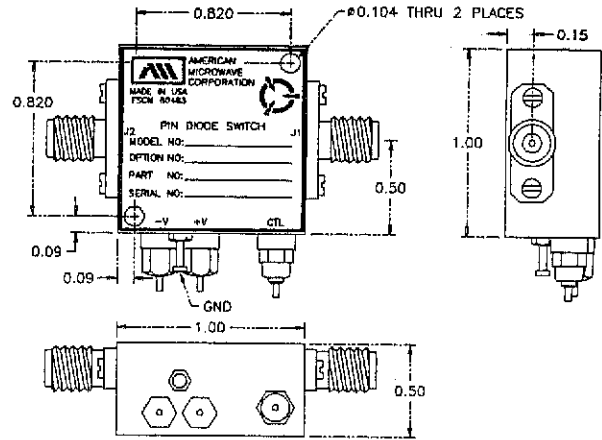
**JULY 11, 1995**

7311 G GROVE ROAD, FREDERICK, MARYLAND 21701 • Tel. (301) 662-4700 • Fax (301) 662-4938

**AMERICAN MICROWAVE CORPORATION**

**VERY HIGH SPEED  
HIGH ISOLATION, REFLECTIVE  
SPST PIN DIODE SWITCH**

- REFLECTIVE
- VERY HIGH SPEED
- VERY HIGH ISOLATION



**AMC MODEL No: SWN-AKG-1DR-12X**

**SPECIFICATIONS:**

- FREQUENCY RANGE : 0.5 GHz to 18.0 GHz
- INSERTION LOSS :  $\leq 3.0$  dB MAX.  
:  $\leq 0.60$  dB TYP. @ 0.5 GHz  
:  $\leq 0.76$  dB TYP. @ 2.0 GHz  
:  $\leq 1.21$  dB TYP. @ 8.0 GHz  
:  $\leq 1.50$  dB TYP. @ 12.0 GHz  
:  $\leq 2.48$  dB TYP. @ 18.0 GHz
- ISOLATION :  $\geq 80$  dB MIN.  
:  $\geq 100$  dB TYP. @ 0.5 GHz  
:  $\geq 95$  dB TYP. @ 2.0 GHz  
:  $\geq 90$  dB TYP. @ 8.0 GHz  
:  $\geq 88$  dB TYP. @ 12.0 GHz  
:  $\geq 80$  dB TYP. @ 18.0 GHz
- VSWR : 2.0:1
- SWITCHING SPEED : "RISE" : 5nS MAX. , 2nS TYP.  
: "FALL" : 5nS MAX. , 1nS TYP.  
: "ON" : 20nS MAX. , 12nS TYP.  
: "OFF" : 20nS MAX. , 10nS TYP.
- CONTROL : TTL COMPATIBLE
- VIDEO TRANSIENTS : 1.8 V Peak to Peak in a 300 MHz BW
- RF INPUT POWER : +20 dBm Operating, 1 Watt Survival
- DC POWER SUPPLY :  $\pm 5$ vdc @ 80mA MAX., 60mA TYP.
- SIZE : 1.0" X 1.0" X 0.5"
- WEIGHT :  $\leq 1.5$  oz

MULTI-THROW AND ABSORPTIVE VERSIONS AVAILABLE

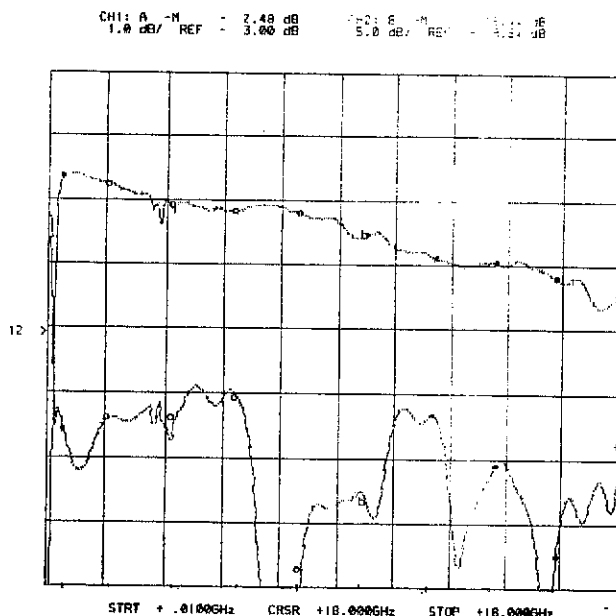
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SUMMARY TEST DATA  
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SERIAL NUMBER : 1MS503173  
TECHNICIAN : RENE AFABLE  
VOLTAGE & CURRENT DRAW :  $\pm 5\text{vdc @ } 60\text{mA}$

### INSERTION LOSS & RETURN LOSS



FREQUENCY	INSERTION LOSS	RETURN LOSS
0.5 GHz	0.60 dB	17.63 dB
2.0 GHz	0.76 dB	16.31 dB
4.0 GHz	1.03 dB	16.24 dB
6.0 GHz	1.13 dB	15.11 dB
8.0 GHz	1.21 dB	27.24 dB
10.0 GHz	1.50 dB	23.00 dB
12.0 GHz	1.87 dB	16.01 dB
14.0 GHz	1.94 dB	24.00 dB
16.0 GHz	2.21 dB	26.18 dB
18.0 GHz	2.48 dB	18.44 dB

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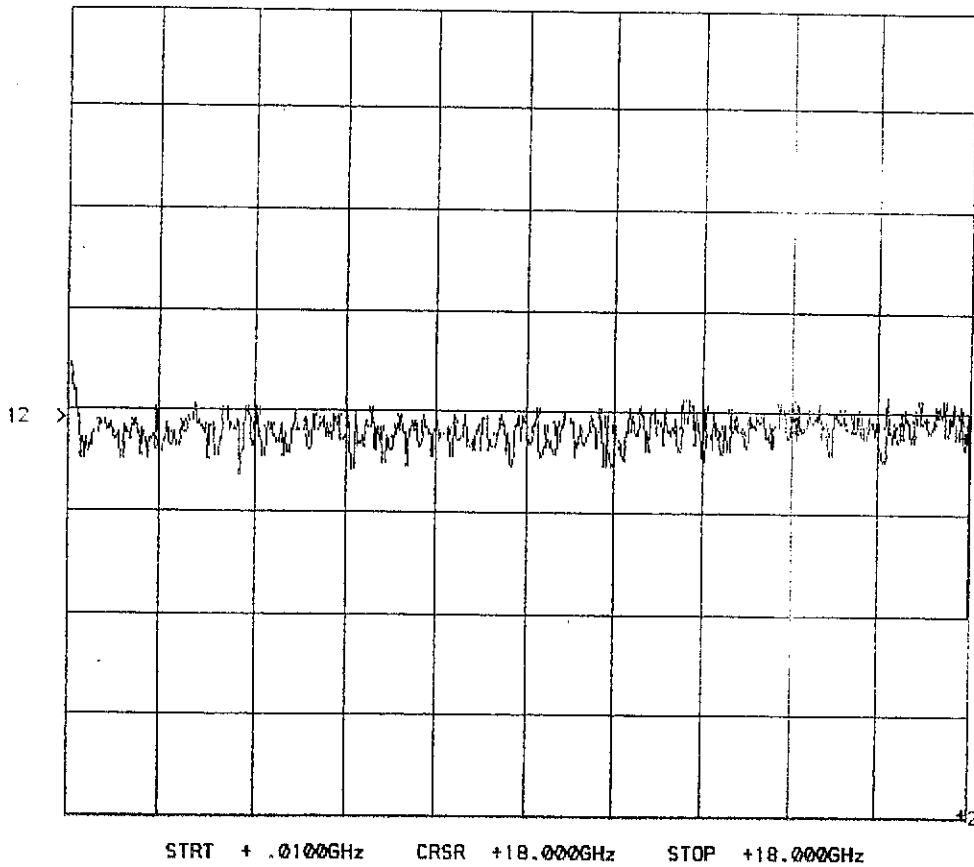
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SERIAL NUMBER : 1MS503173  
TECHNICIAN : RENE AFABLE  
VOLTAGE & CURRENT DRAW :  $\pm 5\text{vdc @ } 60\text{mA}$

ISOLATION

AS MEASURED ON A NETWORK ANALYSER

CH1: A -M - 65.06 dB      CH2: B -M - 57.83 dB  
20.0 dB/ REF - 50.00 dB      5.0 dB/ REF - 3.54 dB



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SERIAL NUMBER : 1MS503173  
TECHNICIAN : RENE AFABLE  
VOLTAGE & CURRENT DRAW :  $\pm 5\text{vdc @ } 60\text{mA}$

ISOLATION

AS MEASURED ON A SPECTRUM ANALYSER

FREQUENCY	ISOLATION
100 MHz	> 90 dB
200 MHz	90 dB
300 MHz	88 dB
500 MHz	> 100 dB
800 MHz	> 100 dB
1.0 GHz	> 100 dB
2.0 GHz	> 95 dB
4.0 GHz	90 dB
6.0 GHz	90 dB
8.0 GHz	90 dB
10.0 GHz	88 dB
12.0 GHz	88 dB
14.0 GHz	84 dB
16.0 GHz	80 dB
18.0 GHz	80 dB

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SERIAL NUMBER : 1MS503173  
 TECHNICIAN : RENE AFABLE  
 VOLTAGE & CURRENT DRAW :  $\pm 5\text{vdc @ } 60\text{mA}$

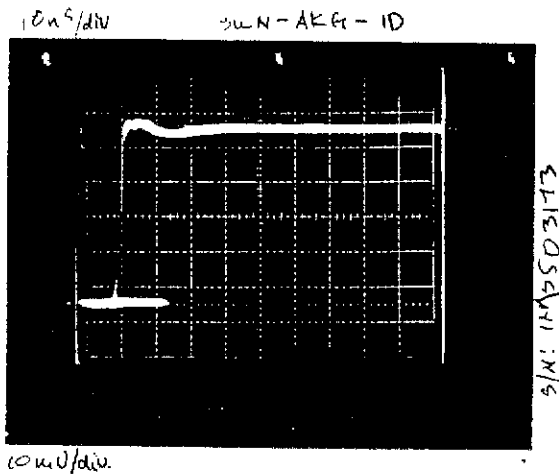
SWITCHING SPEED

"RISE/FALL" TIME: 10%RF TO 90%RF & 90%RF TO 10%RF  
 "ON/OFF" TIME: 50%TTL TO 90%RF OR 10%RF

"ON" 12nS, "RISE" 2nS

HORIZONTAL SCALE:  
 10nS/DIVISION

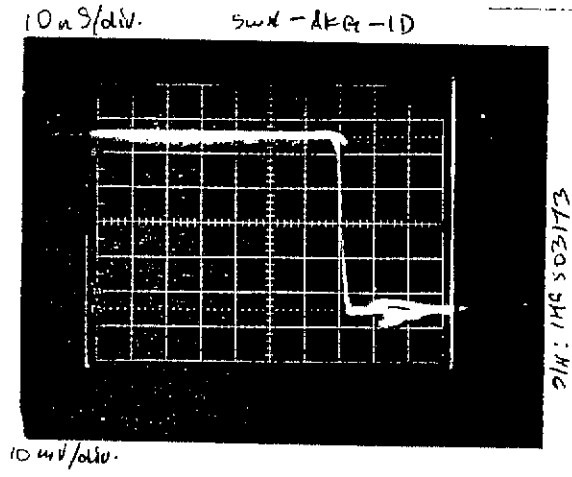
VERTICAL SCALE:  
 10mV/DIVISION



"OFF" 10nS, "FALL" 2nS

HORIZONTAL SCALE:  
 10nS/DIVISION

VERTICAL SCALE:  
 10mV/DIVISION



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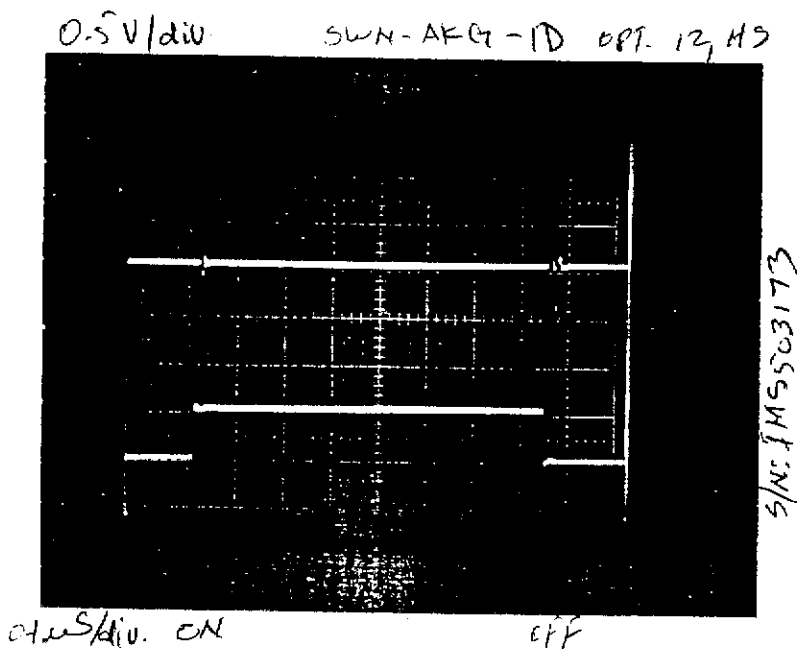
SERIAL NUMBER : 1MS503173  
TECHNICIAN : RENE AFABLE  
VOLTAGE & CURRENT DRAW :  $\pm 5\text{vdc}$  @ 60mA

VIDEO TRANSIENTS

AS MEASURED IN A  
100MHz BANDWIDTH

HORIZONTAL SCALE:  
 $0.1\mu\text{S}/\text{DIVISION}$

VERTICAL SCALE:  
 $0.5\text{V}/\text{DIVISION}$



900mV Peak to Peak Actual Measured Data

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