



**AMERICAN MICROWAVE  
CORPORATION**

**TEST DATA**

**ON**

**10 MHz to 18 GHz**

**SPST**

**LOW LOSS**

**ABSORPTIVE, PIN DIODE SWITCH**

**MODEL NO: SWN-0118-1DT-250**

(Serial No: 1MS502146)

**BY  
AMERICAN MICROWAVE  
CORPORATION**

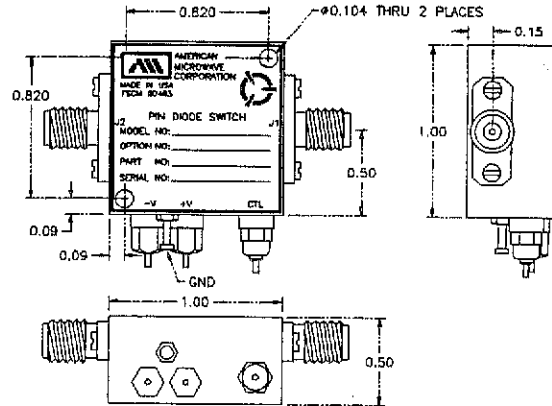
**APRIL 11, 1995**

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

**AMERICAN MICROWAVE CORPORATION**

## SPST 10 MHz to 18 GHz SWITCH/MODULATOR

- ABSORPTIVE
- ULTRA-WIDEBAND
- HIGH ISOLATION
- LOW CURRENT DRAW



**AMC Model Number: SWN-0118-1DT-250**

### SPECIFICATIONS:

- **FREQUENCY** : 0.01 to 18.0 GHz
- **INSERTION LOSS** : 3.50 dB MAX.  
 : ≤1.0 dB TYP. @ 0.01 to 0.05 GHz  
 : ≤1.3 dB TYP. @ 0.05 to 2.0 GHz  
 : ≤1.5 dB TYP. @ 2.0 to 4.0 GHz  
 : ≤1.7 dB TYP. @ 4.0 to 8.0 GHz  
 : ≤2.3 dB TYP. @ 8.0 to 12.0 GHz  
 : ≤3.3 dB TYP. @ 12.0 to 18.0 GHz
- **ISOLATION** : 40 dB MIN.  
 : > 45 dB TYP. @ 0.01 to 0.05 GHz  
 : ≥ 50 dB TYP. @ 0.05 to 0.1 GHz  
 : ≥ 60 dB TYP. @ 0.1 to 0.5 GHz  
 : ≥ 65 dB TYP. @ 0.5 to 2.0 GHz  
 : ≥ 80 dB TYP. @ 2.0 to 4.0 GHz  
 : ≥ 90 dB TYP. @ 4.0 to 12.0 GHz  
 : ≥ 85 dB TYP. @ 12.0 to 18.0 GHz
- **VSWR** : 2.0:1 MAX.
- **SWITCHING SPEED** : On/Off : 75nS MAX. (50nS Typical)  
 : Rise/Fall : 15nS MAX. (10nS Typical)
- **DC POWER SUPPLY** : ±5vdc @ ±50mA MAX. (Other Voltages Available)
- **RF INPUT POWER** : +20dBm Operating, 1 Watt Survival
- **SIZE** : 1.0" X 1.0" X 0.5"
- **WEIGHT** : <2.5 oz.

**REFLECTIVE AND MULTI-THROW VERSIONS ALSO AVAILABLE**

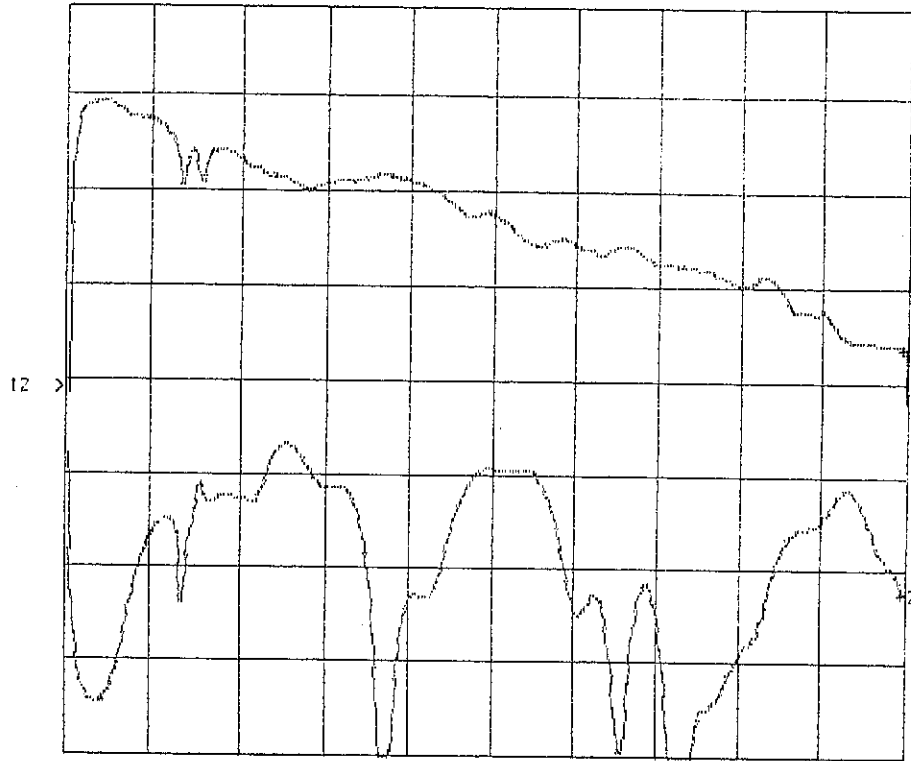
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SERIAL NUMBER : 1MS502146  
 TECHNICIAN : HOLLY HAHN  
 VOLTAGE & CURRENT DRAW : +5vdc ON= +1.1mA, -19.7mA  
 -12vdc OFF= -0.6mA, +27.5mA

**INSERTION LOSS vs. VSWR**

CH1: A -M - 3.17 dB CH2: B -M - 21.06 dB  
 1.0 dB/ REF - 3.50 dB 5.0 dB/ REF - 9.54 dB



STRT + .0100GHz CRSR +18.000GHz STOP +18.000GHz

| INSERTION LOSS | FREQUENCY | VSWR    |
|----------------|-----------|---------|
| 1.85dB         | 0.05 GHz  | 18.4dB  |
| 0.55dB         | 0.5 GHz   | 26.4dB  |
| 0.78dB         | 2.0 GHz   | 16.92dB |
| 1.23db         | 4.0 GHz   | 15.65dB |
| 1.45dB         | 8.0 GHz   | 20.82dB |
| 2.16dB         | 12.4 GHz  | 20.25dB |
| 3.17dB         | 18.0 GHz  | 21.06dB |

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**VSWR OFF J1-J2 PORTS**

CH2: B -M - 14.82 dB  
 5.0 dB/ REF - 9.54 dB



STRT + .0100GHz CRSR +18.000GHz STOP +18.000GHz

| RETURN LOSS | FREQUENCY |
|-------------|-----------|
| 20.0dB      | 0.05 GHz  |
| 30.0dB      | 0.5 GHz   |
| 39.0dB      | 2.0 GHz   |
| 32.0db      | 4.0 GHz   |
| 27.3dB      | 8.0 GHz   |
| 20.5dB      | 12.4 GHz  |
| 14.82dB     | 18.0 GHz  |

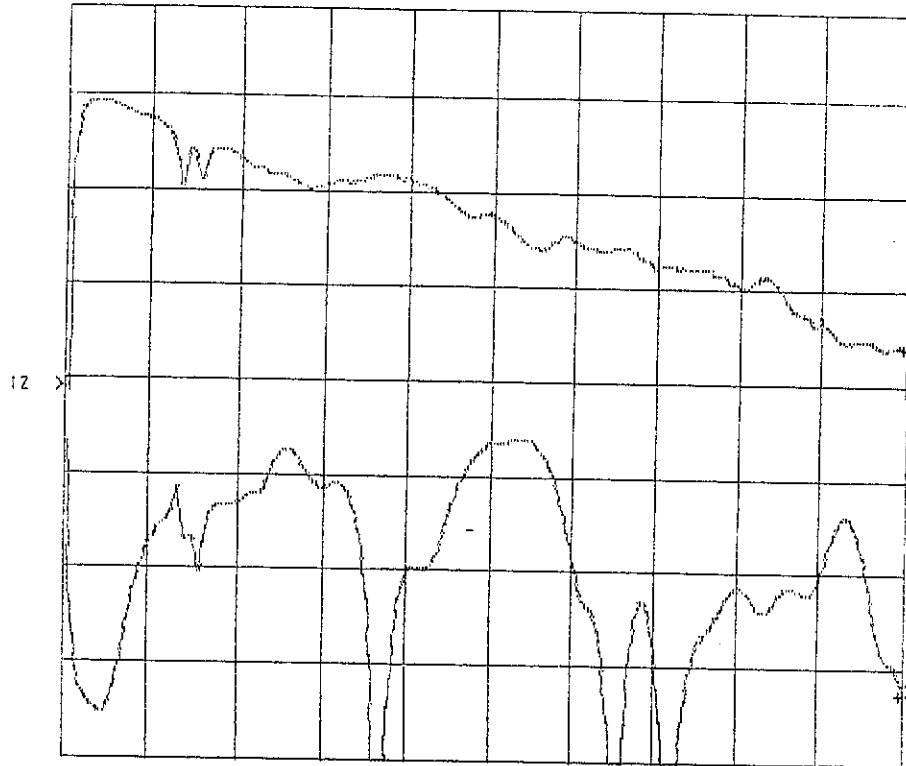
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**VSWR OUTPUT ON J2-J1 PORTS**

CH1: A -M - 3.12 dB CH2: B -M - 25.92 dB  
 1.0 dB/ REF - 3.50 dB 5.0 dB/ REF - 9.54 dB



STRT + .0100GHz CRSR +18.000GHz STOP +18.000GHz

| RETURN LOSS | FREQUENCY |
|-------------|-----------|
| 18.0dB      | 0.05 GHz  |
| 26.0dB      | 0.5 GHz   |
| 17.21dB     | 2.0 GHz   |
| 15.44dB     | 4.0 GHz   |
| 18.13dB     | 8.0 GHz   |
| 21.24dB     | 12.4 GHz  |
| 25.92dB     | 18.0 GHz  |

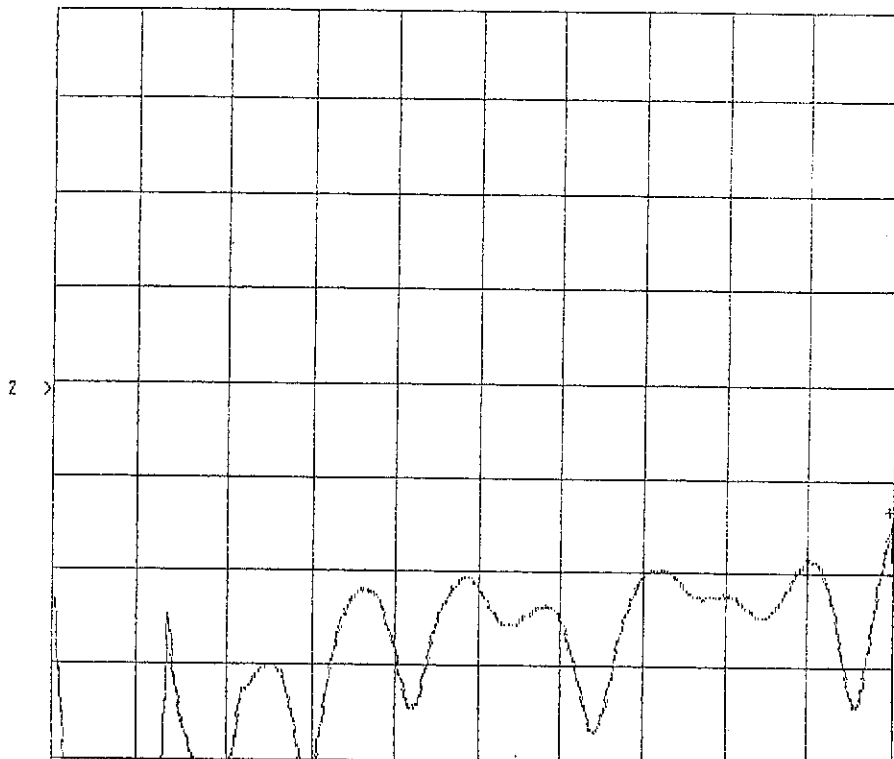
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**VSWR OUTPUT OFF J2-J1 PORTS**

CHZ: B -M - 16.23 dB  
 5.0 dB/ REF - 9.54 dB



STRT + .0100GHz CRSR +18.000GHz STOP +18.000GHz

| RETURN LOSS | FREQUENCY |
|-------------|-----------|
| 20.0dB      | 0.05 GHz  |
| 31.0dB      | 0.5 GHz   |
| 40.0dB      | 2.0 GHz   |
| 25.0dB      | 4.0 GHz   |
| 24.0dB      | 8.0 GHz   |
| 20.5dB      | 12.4 GHz  |
| 16.23dB     | 18.0 GHz  |

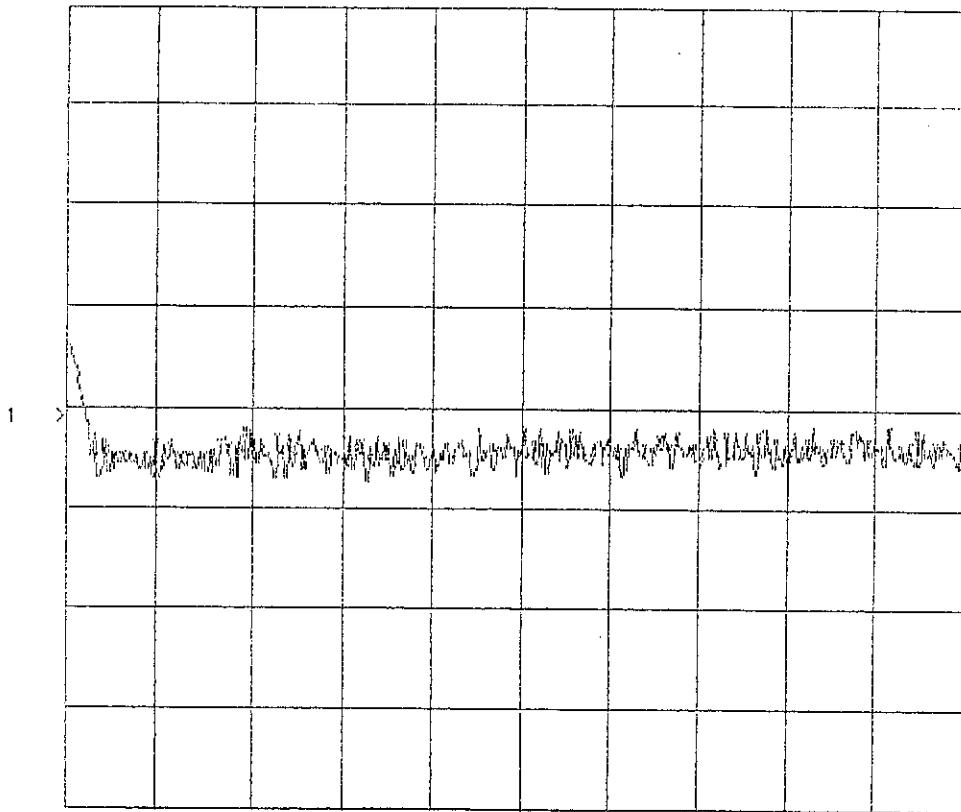
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ISOLATION AS MEASURED ON A NETWORK ANALYZER

CH1: A -M - 67.38 dB  
20.0 dB/ REF - 60.00 dB



STRT + .0100GHz    CRSR +18.000GHz    STOP +18.000GHz

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ISOLATION AS MEASURED ON A SPECTRUM ANALYZER

| FREQUENCY | ISOLATION |
|-----------|-----------|
| 0.05 GHz  | 47dB      |
| 0.1 GHz   | 50dB      |
| 0.5 GHz   | 66dB      |
| 2.0 GHz   | 95dB      |
| 4.0 GHz   | > 100dB   |
| 8.0 GHz   | > 100dB   |
| 12.4 GHz  | > 92dB    |
| 18.0 GHz  | 90dB      |

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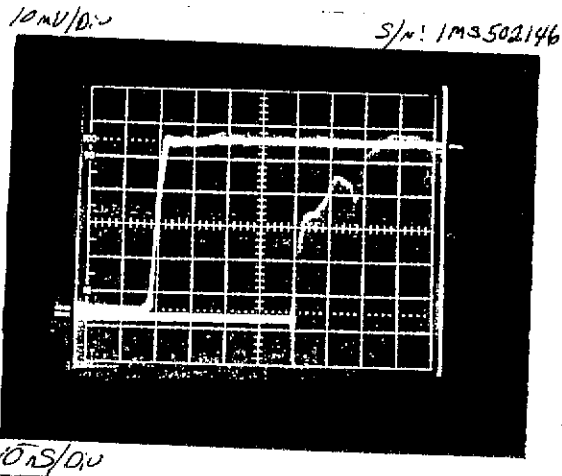
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SWITCHING SPEED: RISE/FALL, ON/OFF

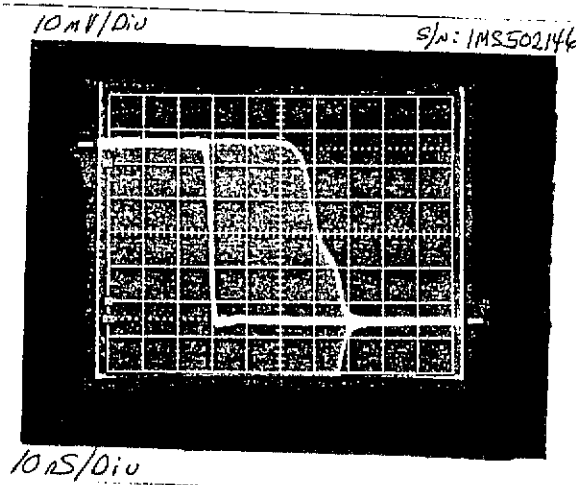
Rise/Fall = 10% to 90% RF/90% to 10% RF

On/Off = 50% TTL to 90%/10% RF

VERTICAL:  
10mV/Division



HORIZONTAL:  
10ns/Division



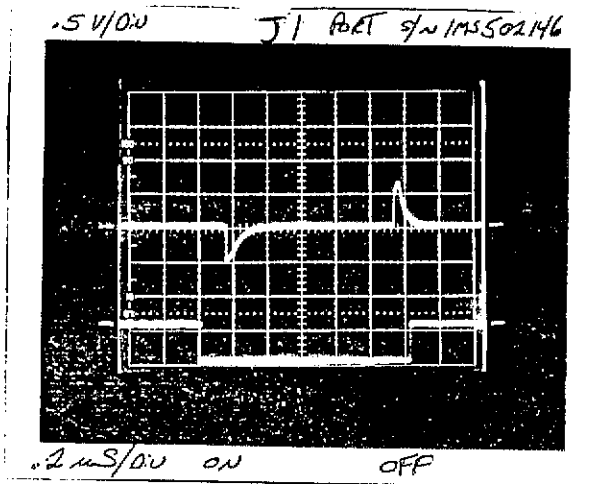
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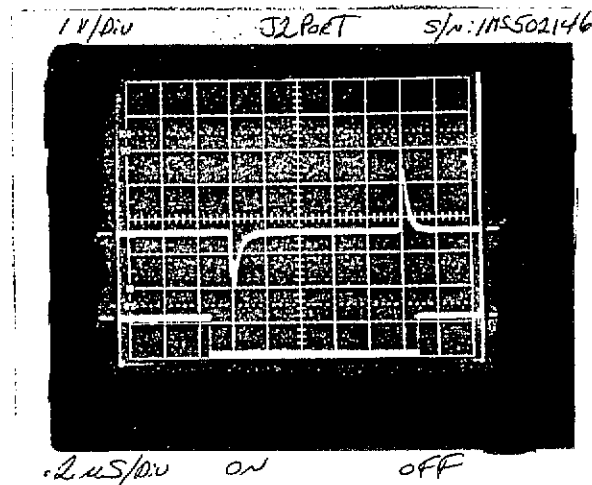
VIDEO TRANSIENTS

J1 PORT



≤1.4v P-P

J2 PORT



≤1.6v P-P

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