



**AMERICAN MICROWAVE
CORPORATION**

TEST DATA

ON

2.0 TO 18.0 GHz

LOW VIDEO TRANSIENTS (R/C)

VERY LOW LOSS

50nS-HIGH SPEED

BALANCED "ON/OFF" TO WITHIN 7nS

REFLECTIVE SPST PIN DIODE SWITCH

**AMC MODEL No:
SWN-118-1DR-HPX-LVT**

Serial No: 1MS507241

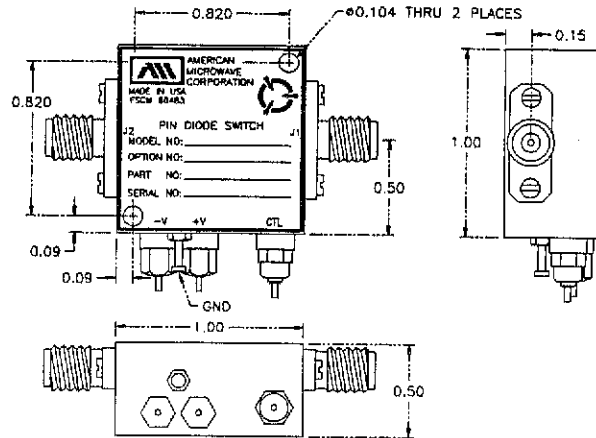
**BY
AMERICAN MICROWAVE
CORPORATION**

JULY 11, 1995

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

**HIGH SPEED
LOW LOSS, REFLECTIVE
SPST PIN DIODE SWITCH**

- **LOW LOSS**
- **HIGH SPEED**
- **HIGH ISOLATION**
- **LOW VIDEO TRANSIENTS**



AMC MODEL No: SWN-118-1DR-HPX-LVT

SPECIFICATIONS:

- **FREQUENCY RANGE** : 2.0 GHz to 18.0 GHz (Usable to 1.0 GHz)
- **INSERTION LOSS** : ≤ 2.0 dB MAX.
: ≤ 0.39 dB TYP. @ 2.0 GHz
: ≤ 0.89 dB TYP. @ 8.0 GHz
: ≤ 1.00 dB TYP. @ 12.0 GHz
: ≤ 1.65 dB TYP. @ 18.0 GHz
- **ISOLATION** : ≥ 70 dB MIN.
: ≥ 84 dB TYP. @ 2.0 GHz
: ≥ 82 dB TYP. @ 8.0 GHz
: ≥ 80 dB TYP. @ 12.0 GHz
: ≥ 64 dB TYP. @ 18.0 GHz
- **VSWR** : 2.0:1
- **SWITCHING SPEED** : "RISE" : 15nS MAX. , 10nS TYP.
: "FALL" : 10nS MAX. , 8nS TYP.
: "ON" : 50nS MAX. , 40nS TYP.
: "OFF" : 50nS MAX. , 35nS TYP.
- **CONTROL** : TTL COMPATIBLE
- **VIDEO TRANSIENTS** : 175 mV Peak to Peak in a 300 MHz BW
: 125 mV Peak to Peak in a 100 MHz BW
: 85 mV Peak to Peak in a 20 MHz BW
- **RF INPUT POWER** : +20 dBm Operating, 1 Watt Survival
- **DC POWER SUPPLY** : ± 5 vdc @ 80mA MAX., 60mA TYP.
- **SIZE** : 1.0" X 1.0" X 0.5"
- **WEIGHT** : ≤ 1.5 oz

MULTI-THROW AND ABSORPTIVE VERSIONS AVAILABLE

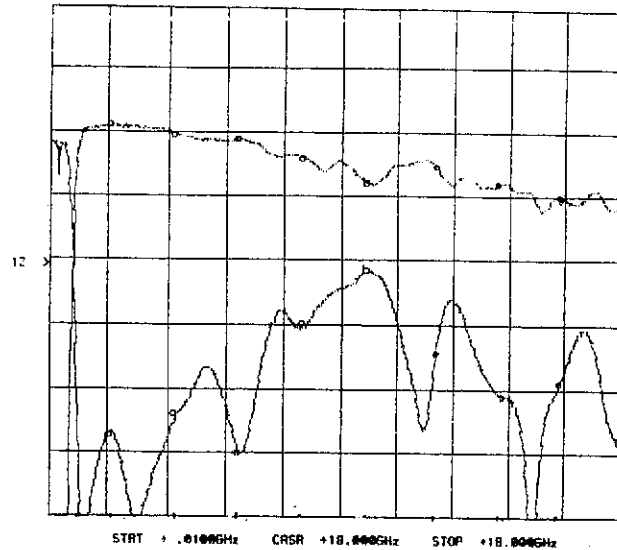


SUMMARY TEST DATA
SWN-118-1DR-HPX-LVT
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SERIAL NUMBER : 1MS507241
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc @ } 60\text{mA}$

INSERTION LOSS & RETURN LOSS

CH1: A -M - 1.65 dB CH2: B -M - 23.32 dB
1.0 dB/ REF - 2.50 dB 5.0 dB/ REF - 8.54 dB



FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	0.50 dB	41.89 dB
2.0 GHz	0.39 dB	23.23 dB
4.0 GHz	0.51 dB	21.28 dB
6.0 GHz	0.60 dB	24.34 dB
8.0 GHz	0.89 dB	14.37 dB
10.0 GHz	1.30 dB	10.42 dB
12.0 GHz	1.00 dB	16.70 dB
14.0 GHz	1.28 dB	19.86 dB
16.0 GHz	1.48 dB	18.50 dB
18.0 GHz	1.65 dB	23.32 dB



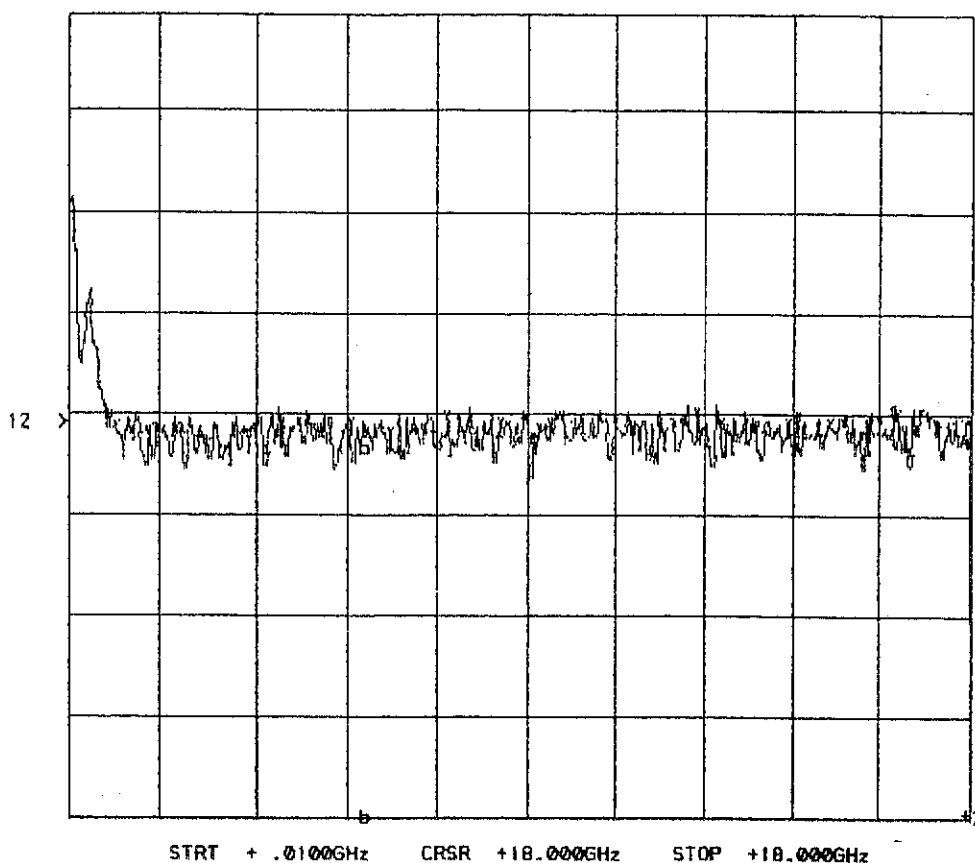
SUMMARY TEST DATA
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SERIAL NUMBER : IMS507241
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc @ } 60\text{mA}$

ISOLATION

AS MEASURED ON A NETWORK ANALYSER

CH1: A -M - 85.54 dB CH2: B -M - 45.10 dB
20.0 dB/ REF - 60.00 dB 5.0 dB/ REF - 9.54 dB



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SERIAL NUMBER : 1MS507241
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ 60mA

ISOLATION

AS MEASURED ON A SPECTRUM ANALYSER

FREQUENCY	ISOLATION
100 MHz	72 dB
200 MHz	68 dB
300 MHz	64 dB
500 MHz	62 dB
800 MHz	64 dB
1.0 GHz	64 dB
2.0 GHz	94 dB
4.0 GHz	90 dB
6.0 GHz	90 dB
8.0 GHz	88 dB
10.0 GHz	78 dB
12.0 GHz	80 dB
14.0 GHz	78 dB
16.0 GHz	72 dB
18.0 GHz	64 dB

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SUMMARY TEST DATA
 SWN-118-1DR-HPX-LVT
 PAGE 6

SERIAL NUMBER : 1MS507241
 TECHNICIAN : RENE AFABLE
 VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc @ } 60\text{mA}$

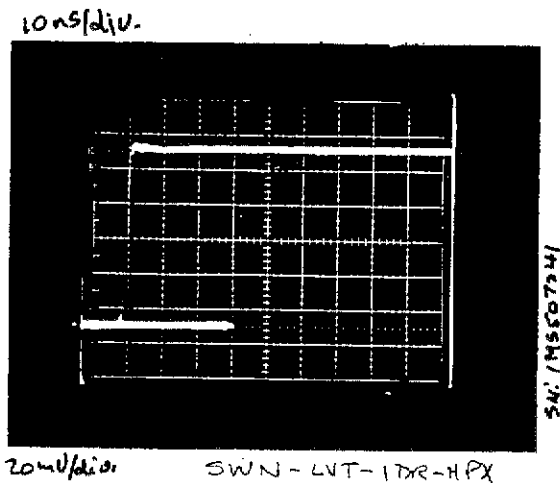
SWITCHING SPEED

"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" 40nS, "RISE" 10nS

HORIZONTAL SCALE:
 10nS/DIVISION

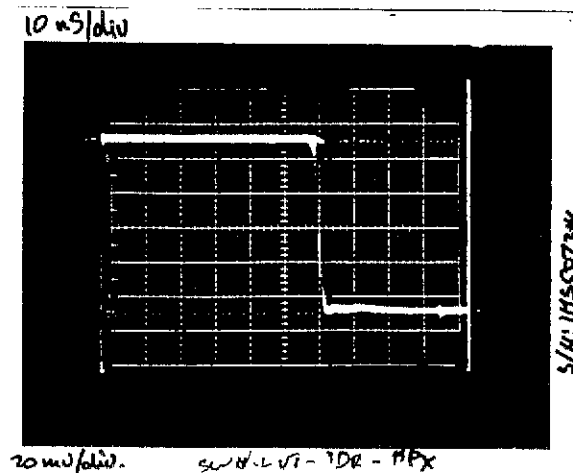
VERTICAL SCALE:
 20mV/DIVISION



"OFF" 35nS, "FALL" 8nS

HORIZONTAL SCALE:
 10nS/DIVISION

VERTICAL SCALE:
 20mV/DIVISION



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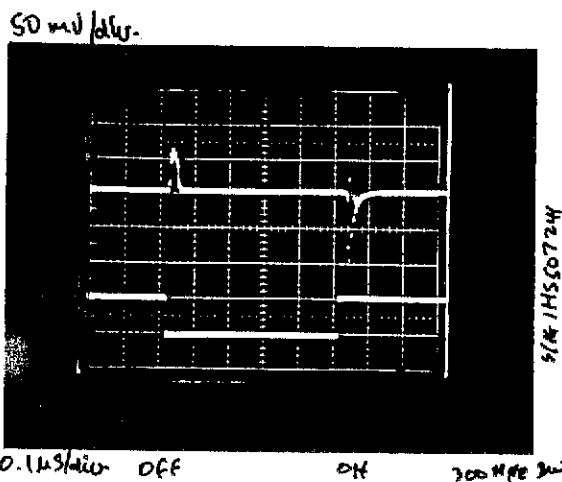
SERIAL NUMBER : 1MS507241
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ 60mA

VIDEO TRANSIENTS

AS MEASURED IN A
300MHz BANDWIDTH

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

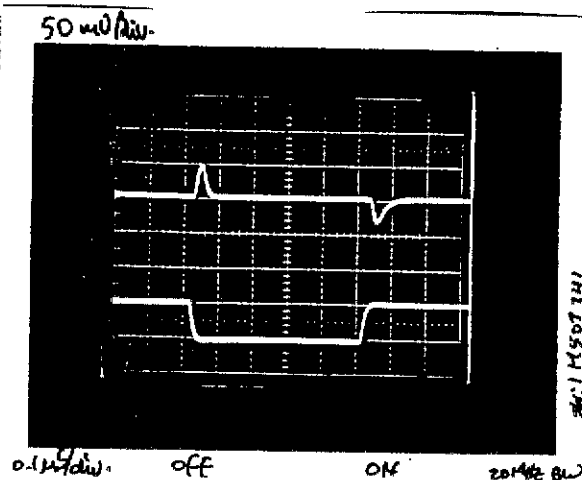
VERTICAL SCALE:
 $50\text{mV}/\text{DIVISION}$



AS MEASURED IN A
20MHz BANDWIDTH

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

VERTICAL SCALE:
 $5\text{mV}/\text{DIVISION}$



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**AMERICAN MICROWAVE
CORPORATION**

TEST DATA

ON

0.5 TO 18.0 GHz

LOW LOSS

HIGH SPEED

LOW VIDEO TRANSIENTS (R/C)

REFLECTIVE SPST PIN DIODE SWITCH

**AMC MODEL No:
SWN-0518-1DR-12X-LVT**

Serial No: 1MS503170

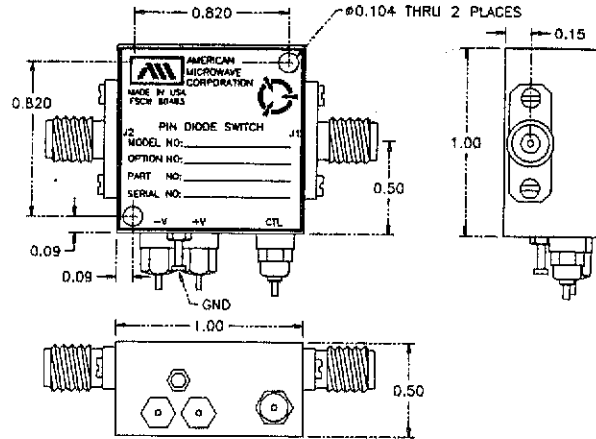
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**HIGH SPEED
LOW LOSS, REFLECTIVE
SPST PIN DIODE SWITCH**

- **LOW LOSS**
- **HIGH SPEED**
- **HIGH ISOLATION**
- **LOW VIDEO TRANSIENTS**



AMC MODEL No: SWN-0518-1DR-12X-LVT

SPECIFICATIONS:

- **FREQUENCY RANGE** : 0.5 GHz to 18.0 GHz
- **INSERTION LOSS** : ≤ 2.5 dB MAX.
: ≤ 0.68 dB TYP. @ 0.5 GHz
: ≤ 0.43 dB TYP. @ 2.0 GHz
: ≤ 0.98 dB TYP. @ 8.0 GHz
: ≤ 1.63 dB TYP. @ 12.0 GHz
: ≤ 2.00 dB TYP. @ 18.0 GHz
- **ISOLATION** : ≥ 40 dB MIN.
: ≥ 44 dB TYP. @ 0.5 GHz
: ≥ 78 dB TYP. @ 2.0 GHz
: ≥ 90 dB TYP. @ 8.0 GHz
: ≥ 85 dB TYP. @ 12.0 GHz
: ≥ 80 dB TYP. @ 18.0 GHz
- **VSWR** : 2.0:1
- **SWITCHING SPEED** : "RISE" : 15nS MAX. , 10nS TYP.
: "FALL" : 20nS MAX. , 12nS TYP.
: "ON" : 50nS MAX. , 25nS TYP.
: "OFF" : 50nS MAX. , 45nS TYP.
- **CONTROL** : TTL COMPATIBLE
- **VIDEO TRANSIENTS** : 400 mV Peak to Peak in a 300 MHz BW
- **RF INPUT POWER** : +20 dBm Operating, 1 Watt Survival
- **DC POWER SUPPLY** : ± 5 vdc @ 80mA MAX., 60mA TYP.
- **SIZE** : 1.0" X 1.0" X 0.5"
- **WEIGHT** : ≤ 1.5 oz

MULTI-THROW AND ABSORPTIVE VERSIONS AVAILABLE

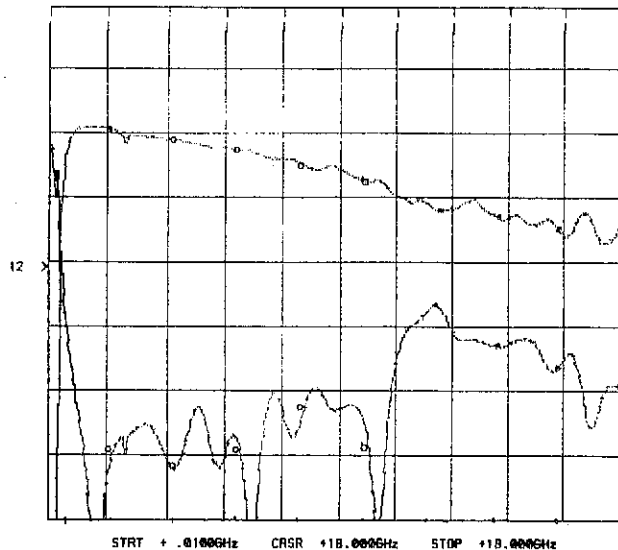


SUMMARY TEST DATA
SWN-0518-1DR-12X-LVT
PAGE 3

SERIAL NUMBER : 1MS503170
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ 60mA

INSERTION LOSS & RETURN LOSS

CH1: A -R - 2.01 dB CH2: B -R - 19.16 dB
1.0 dB/ REF - 2.50 dB 5.0 dB/ REF - 9.54 dB



FREQUENCY	INSERTION LOSS	RETURN LOSS
0.5 GHz	0.68 dB	14.53 dB
2.0 GHz	0.43 dB	23.77 dB
4.0 GHz	0.59 dB	25.21 dB
6.0 GHz	0.74 dB	24.75 dB
8.0 GHz	0.98 dB	20.44 dB
10.0 GHz	1.22 dB	24.93 dB
12.0 GHz	1.63 dB	12.77 dB
14.0 GHz	1.76 dB	15.94 dB
16.0 GHz	2.01 dB	17.40 dB
18.0 GHz	2.01 dB	19.16 dB

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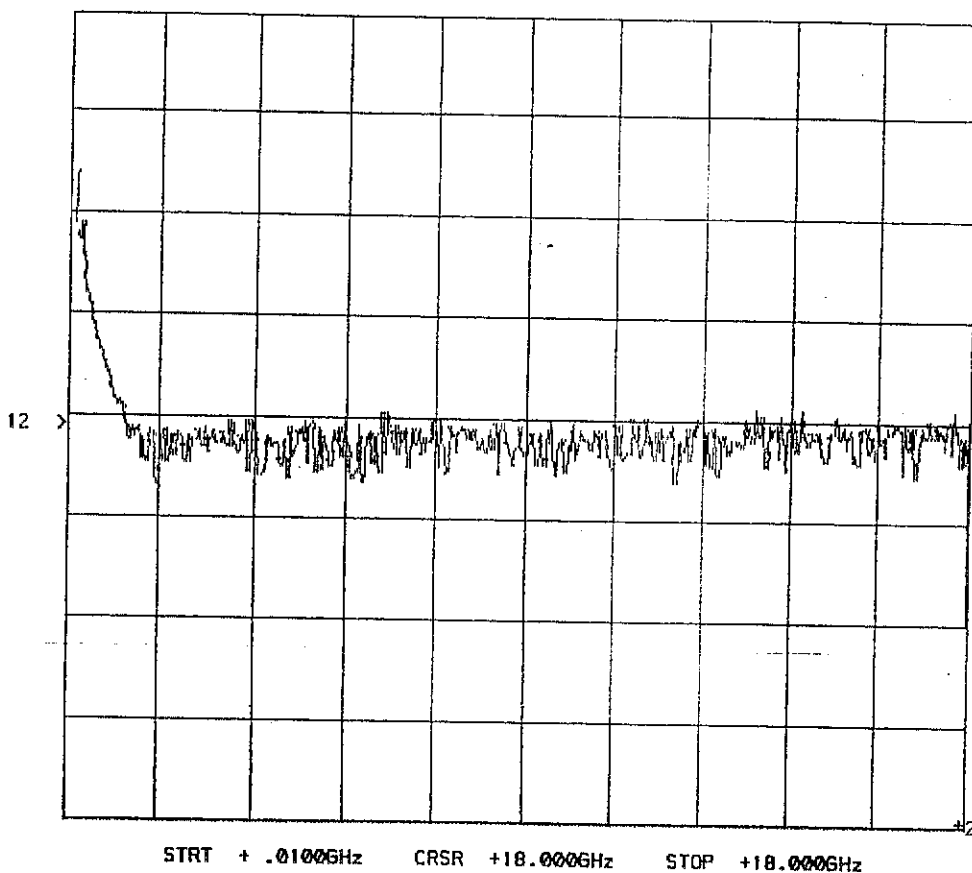
SUMMARY TEST DATA
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PAGE 4

SERIAL NUMBER : 1MS503170
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc @ } 60\text{mA}$

ISOLATION

AS MEASURED ON A NETWORK ANALYSER

CH1: A -M - 65.24 dB CH2: B -M - 52.05 dB
20.0 dB/ REF - 60.00 dB 5.0 dB/ REF - 9.54 dB



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SWN-0518-1DR-12X-LVT
PAGE 5

SERIAL NUMBER : 1MS503170
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc @ } 60\text{mA}$

ISOLATION

AS MEASURED ON A SPECTRUM ANALYSER

FREQUENCY	ISOLATION
100 MHz	48 dB
200 MHz	43 dB
300 MHz	42 dB
500 MHz	44 dB
800 MHz	54 dB
1.0 GHz	61 dB
2.0 GHz	78 dB
4.0 GHz	90 dB
6.0 GHz	90 dB
8.0 GHz	90 dB
10.0 GHz	90 dB
12.0 GHz	85 dB
14.0 GHz	84 dB
16.0 GHz	80 dB
18.0 GHz	80 dB

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SWN-0518-1DR-12X-LVT
PAGE 6

SERIAL NUMBER : 1MS503170
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc @ } 60\text{mA}$

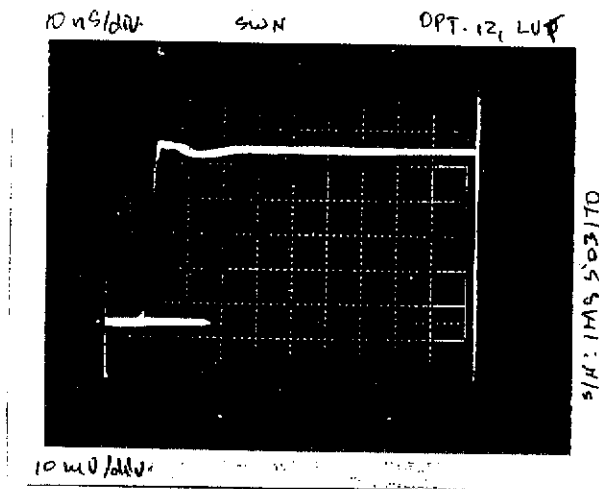
SWITCHING SPEED

"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" 25nS, "RISE" 10nS

HORIZONTAL SCALE:
10nS/DIVISION

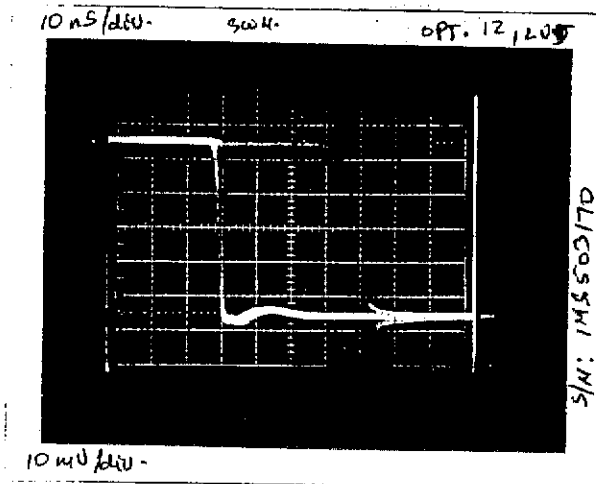
VERTICAL SCALE:
10mV/DIVISION



"OFF" 45nS, "FALL" 12nS

HORIZONTAL SCALE:
10nS/DIVISION

VERTICAL SCALE:
10mV/DIVISION



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PAGE 7

SERIAL NUMBER : IMS503170
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc @ } 60\text{mA}$

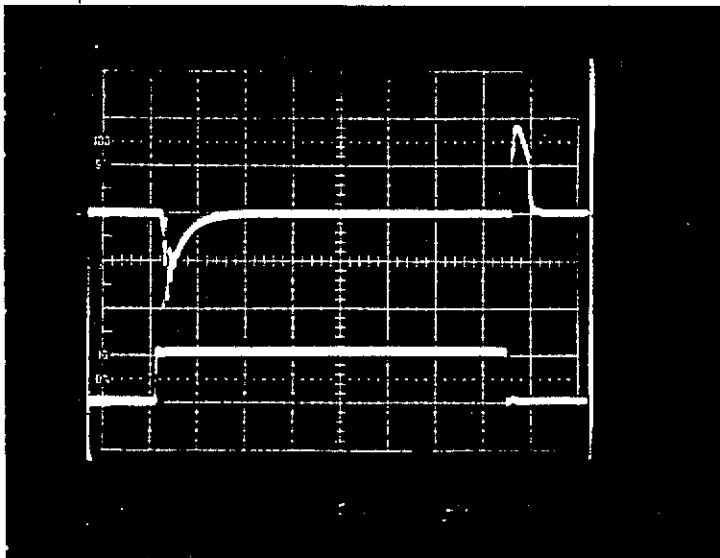
VIDEO TRANSIENTS

AS MEASURED IN A
100MHz BANDWIDTH

HORIZONTAL SCALE:
0.1 μ S/DIVISION

VERTICAL SCALE:
0.1V/DIVISION

0.1V/div. SWN-21874-10 OPT 12 W/F



0.1 μ S/div. OK OFF

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