



**AMERICAN MICROWAVE
CORPORATION**

TEST DATA

ON

10 MHz TO 18 GHz

LOW LOSS

SPDT

REFLECTIVE, PIN DIODE SWITCH

MODEL No: SWN-RRA-2DR-0118

(Serial Number: 2MS50520)

**BY
AMERICAN MICROWAVE
CORPORATION**

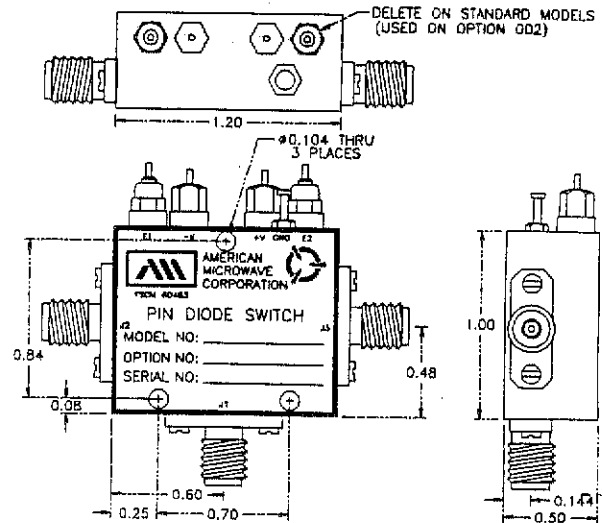
JUNE 13, 1995

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

AMERICAN MICROWAVE CORPORATION

LOW LOSS 10 MHz TO 18 GHz REFLECTIVE, SPDT SWITCH

- 10 MHz TO 18 GHz
- VERY LOW LOSS
- HIGH ISOLATION
- LOW CURRENT DRAW



AMC MODEL No: SWN-RRA-2DR-0118

SPECIFICATIONS:

- | | | |
|-------------------|-------------------------------------------------------------|------------|
| • FREQUENCY RANGE | : 10 MHz to 18 GHz | |
| • INSERTION LOSS | : 2.50 dB Max. | |
| | : 1.20 dB Typ. | @ 10 MHz |
| | : 1.00 dB Typ. | @ 100 MHz |
| | : 0.36 dB Typ. | @ 2.0 GHz |
| | : 1.10 dB Typ. | @ 10.0 GHz |
| | : 1.90 dB Typ. | @ 18.0 GHz |
| • ISOLATION | : ≥ 70 dB Min. | |
| | : ≥ 95 dB Typ. | @ 100 MHz |
| | : ≥ 95 dB Typ. | @ 2.0 GHz |
| | : ≥ 88 dB Typ. | @ 10.0 GHz |
| | : ≥ 76 dB Typ. | @ 18.0 GHz |
| • VSWR | : 2.0:1 | |
| • SWITCHING SPEED | : RISE : 10 nS Max., 8 nS Typ. | |
| | : FALL : 10 nS Max., 8 nS Typ. | |
| | : ON : 70 nS Max., 60 nS Typ. | |
| | : OFF : 70 nS Max., 60 nS Typ. | |
| • CONTROL | : TTL Compatible, (TOGGLE OR INDEPENDENT CONTROL AVAILABLE) | |
| • RF INPUT POWER | : +20dBm Operating, 1 Watt Survival | |
| • DC POWER SUPPLY | : ± 5 vdc @ +60mA, -50mA Maximum | |
| • SIZE | : 1.2" X 1.0" X 0.5" | |

ABSORPTIVE AND MULTITHROW VERSIONS AVAILABLE

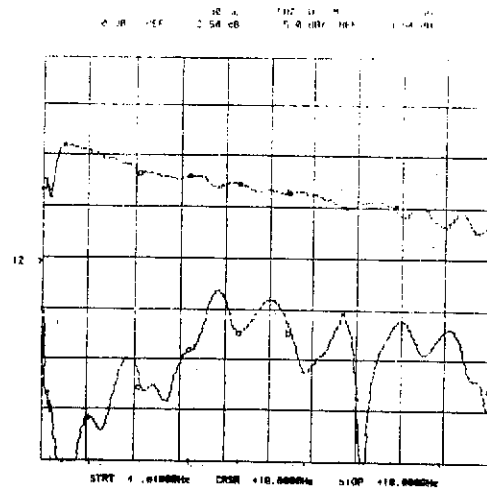
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SUMMARY TEST DATA
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SERIAL NUMBER : 2MS50520
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ +36mA, -25mA

INSERTION LOSS & RETURN LOSS
I1 TO I2



FREQUENCY	INSERTION LOSS	RETURN LOSS
10 MHz	1.12dB	14.30dB
80 MHz	1.01dB	22.38dB
235 MHz	1.22dB	24.12dB
820 MHz	0.21dB	33.39dB
2.0 GHz	0.36dB	25.43dB
4.0 GHz	0.73dB	22.45dB
6.0 GHz	0.78dB	18.28dB
8.0 GHz	0.93dB	16.27dB
10.0 GHz	1.10dB	17.01dB
12.0 GHz	1.38dB	14.71dB
14.0 GHz	1.34dB	15.77dB
16.0 GHz	1.71dB	16.45dB
18.0 GHz	1.90dB	22.77dB

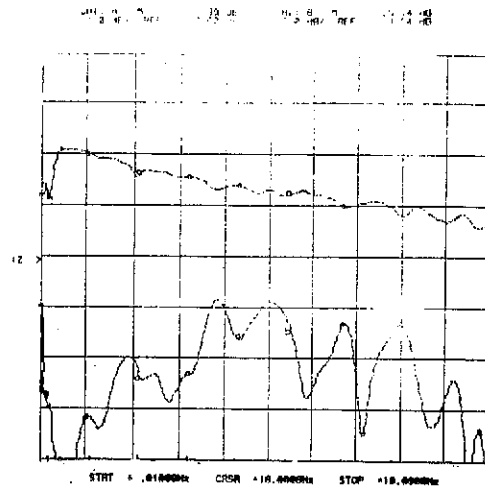
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SERIAL NUMBER : 2MS50520
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ +36mA, -25mA

INSERTION LOSS & RETURN LOSS
J1 TO J3



FREQUENCY	INSERTION LOSS	RETURN LOSS
10 MHz	1.21dB	15.07dB
80 MHz	1.04dB	22.27dB
235 MHz	1.30dB	23.11dB
820 MHz	0.33dB	36.04dB
2.0 GHz	0.45dB	25.39dB
4.0 GHz	0.77dB	21.65dB
6.0 GHz	0.89dB	20.89dB
8.0 GHz	1.06dB	17.24dB
10.0 GHz	1.21dB	17.13dB
12.0 GHz	1.42dB	16.03dB
14.0 GHz	1.48dB	16.24dB
16.0 GHz	1.71dB	24.09dB
18.0 GHz	1.99dB	25.74dB



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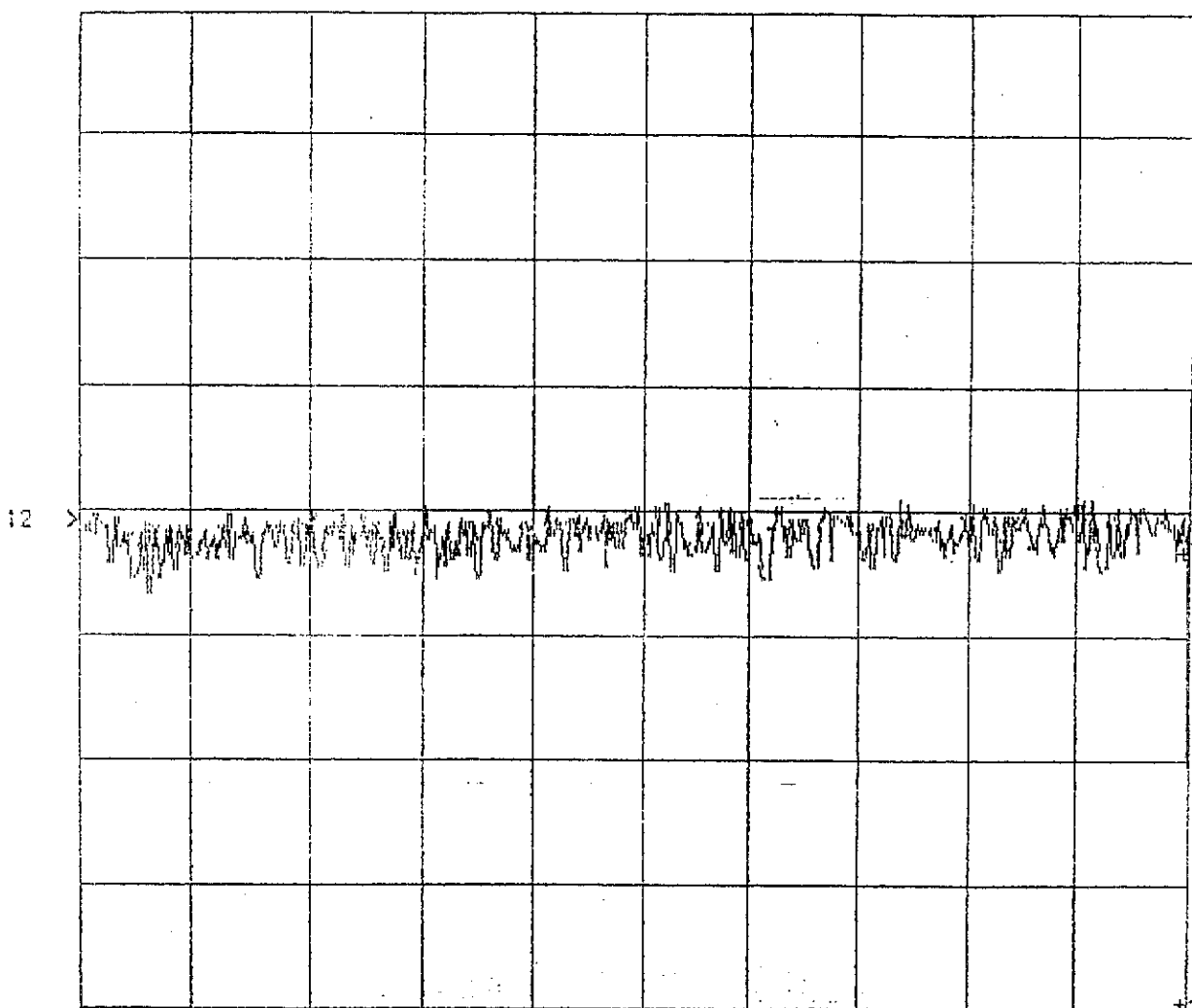
SERIAL NUMBER : 2MS50520
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ +36mA, -25mA

ISOLATION

(AS MEASURED ON A NETWORK ANALYZER)

J1 TO J2

CH1: A -M - 66.55 dB CH2: B -M - 41.25 dB
20.0 dB/ REF - 60.00 dB 5.0 dB/ REF - 9.54 dB



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

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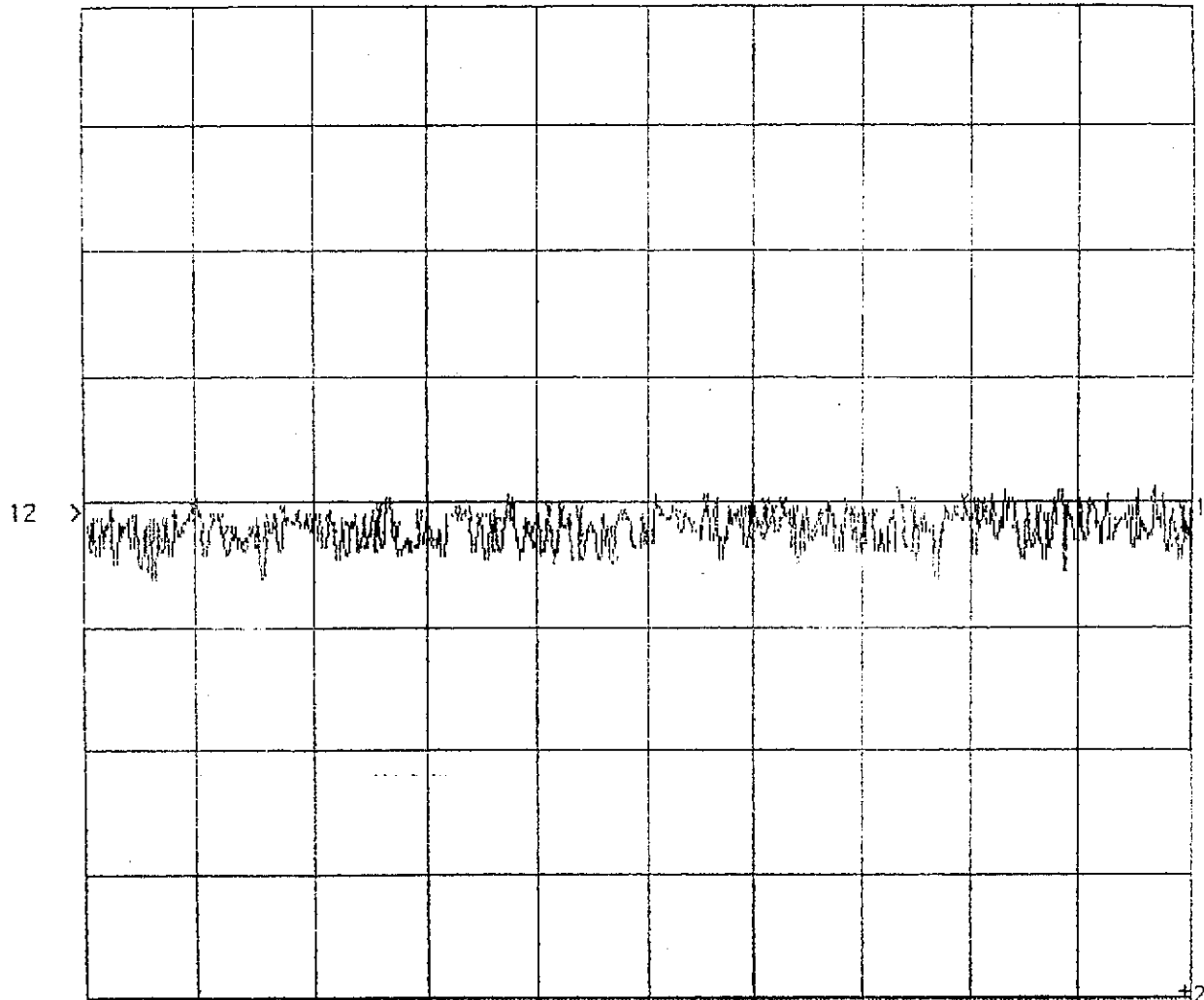
SERIAL NUMBER : 2MS50520
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ +36mA, -25mA

ISOLATION

(AS MEASURED ON A NETWORK ANALYZER)

J1 TO J3

CH1: A -M - 63.97 dB CH2: B -M - 44.74 dB
20.0 dB/ REF - 60.00 dB 5.0 dB/ REF - 9.54 dB



STRT + .01000GHz CRSR +18.000GHz STOP +18.000GHz

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SERIAL NUMBER : 2MS50520
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ +36mA, -25mA

ISOLATION
(AS MEASURED ON A SPECTRUM ANALYZER)

FREQUENCY	J1 TO J2	J1 TO J3
100 MHz	95dB	92dB
200 MHz	92dB	94dB
300 MHz	91dB	90dB
500 MHz	92dB	92dB
800 MHz	90dB	90dB
1 GHz	88dB	91dB
2 GHz	> 95dB	> 95dB
4 GHz	86dB	88dB
6 GHz	88dB	88dB
8 GHz	88dB	86dB
10 GHz	88dB	88dB
12 GHz	82dB	84dB
14 GHz	75db	76dB
16 GHz	70dB	70dB
18 GHz	76dB	74dB

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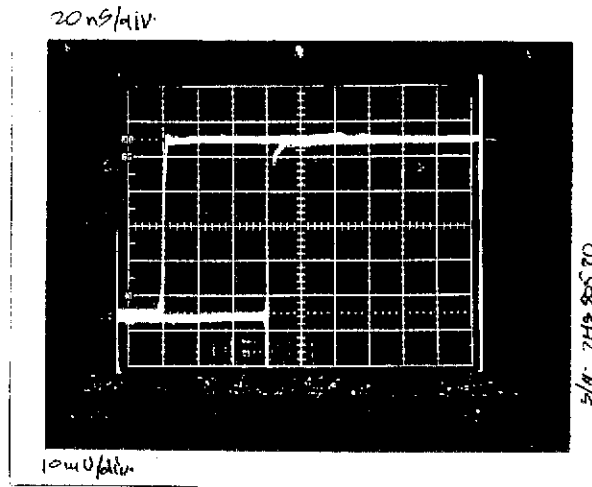
SUMMARY TEST DATA
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TECHNICIAN : RENE AFABLE
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SWITCHING SPEED

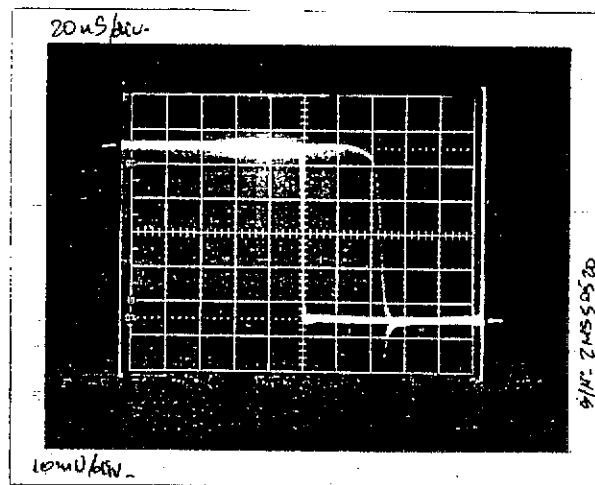
"Rise/Fall" Time: 10% RF to 90% RF & 90% RF to 10% RF
"On/Off" Time: 50% TTL to 90% RF or 10% RF

VERTICAL SCALE:
10mV/DIVISION



RISE TIME: 5nS
ON TIME: 70nS

HORIZONTAL SCALE:
20nS/DIVISION



FALL TIME: 4nS
OFF TIME: 45nS

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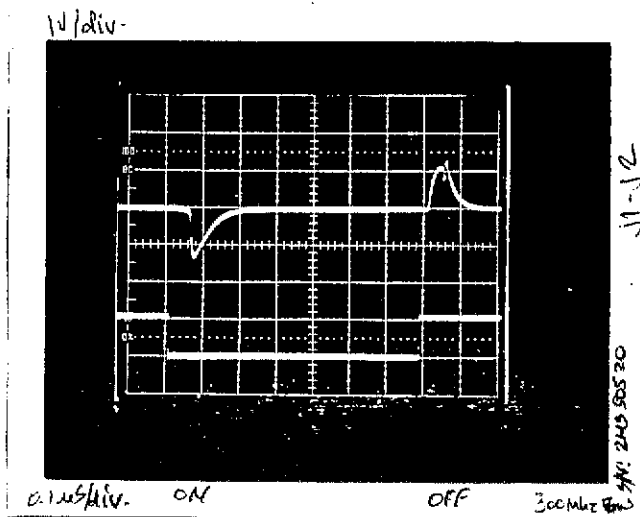
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TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ +36mA, -25mA

VIDEO TRANSIENTS

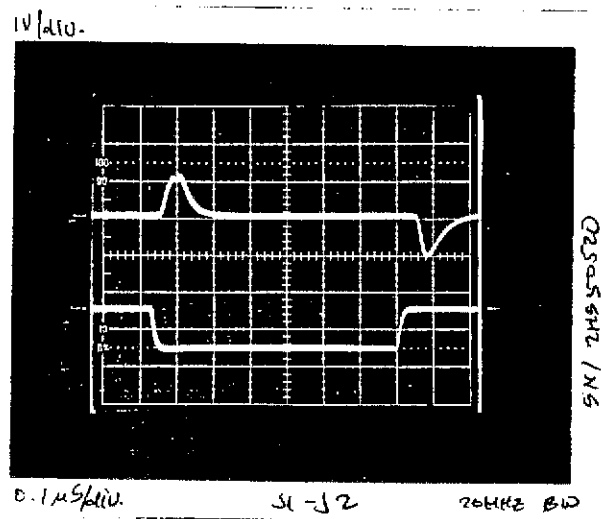
J1 TO J2

(J1 TO J2 IS IDENTICAL TO J1 TO J3)
HORIZONTAL SCALE: $0.1\mu\text{s}/\text{DIVISION}$
VERTICAL SCALE: 0.5 VOLTS/DIVISION

MEASURED IN A
300 MHz BANDWIDTH



MEASURED IN A
20 MHz BANDWIDTH



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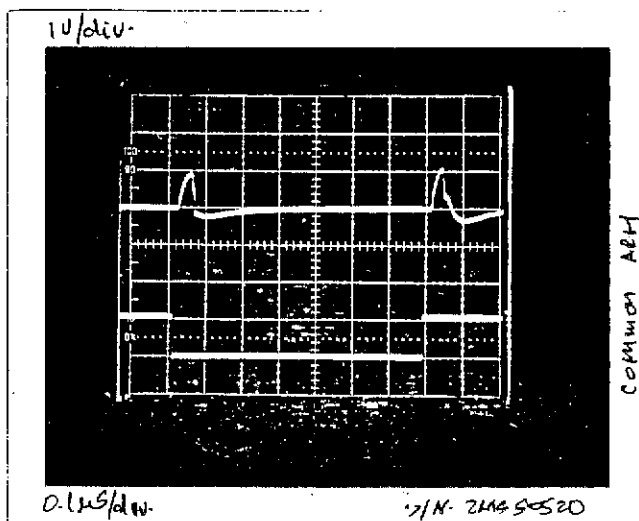
SUMMARY TEST DATA
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SERIAL NUMBER : 2MS50520
TECHNICIAN : RENE AFABLE
VOLTAGE & CURRENT DRAW : $\pm 5\text{vdc}$ @ +36mA, -25mA

VIDEO TRANSIENTS
COMMON ARM

HORIZONTAL SCALE: $0.1\mu\text{S}/\text{DIVISION}$
VERTICAL SCALE: 0.5 VOLTS/DIVISION

MEASURED IN A
300 MHz BANDWIDTH



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