



**TEST REPORT**

**ON**

**100 MHz to 2 GHz**

**LOW LOSS**

**HIGH POWER**

**ABSORPTIVE**

**SPST PIN DIODE SWITCH**

**AMC MODEL No:**

**SW-2183-1DT-100M2-HPR1W-FET-LVT**

Serial Numbers: 1MS208176 AND 1MS208178

**DESIGNED**

**BY**

**A. K. Gorwara & R. Afable**

**TESTED**

**BY**

**R. Afable**

**REPORTED**

**BY**

**W. Steinhaus**

**March 9, 2004**

AMERICAN MICROWAVE CORPORATION., 7311-G Grove Road, Frederick, MD 21704  
Tel: 301-662-4700 • Fax: 301-662-4938 • Email: [sales@americanmicrowavecorp.com](mailto:sales@americanmicrowavecorp.com)  
Website: <http://www.americanmicrowavecorp.com>

**ISO9001 : 1994 CERTIFIED**

*Handwritten signatures and initials:*  
JW, SC, JBT, LC, H, JKW, 1MS3, DRH, WBS, JB

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## SPST, ABSORPTIVE, PIN DIODE SWITCH AMC MODEL No: SW-2183-1DT-100M2-HPR1W-FET-LVT

### FEATURES:

- **LOW LOSS**
- **SMALL SIZE**
- **ABSORPTIVE**
- **NARROW BAND**
- **HIGH POWER OF 1 WATT**

### SPECIFICATIONS:

• FREQUENCY	:	0.1 TO 2 GHz
• INSERTION LOSS	:	2.5 dB MAXIMUM, 2.0 dB TYPICAL
• ISOLATION	:	50 dB MINIMUM, 60 dB TYPICAL
• VSWR	:	2.0:1
• RF POWER	:	1 WATT CW
• RISE TIME	:	50 nS MAXIMUM
• FALL TIME	:	50 nS MAXIMUM
• DELAY ON	:	250 nS MAXIMUM
• DELAY OFF	:	250 nS MAXIMUM
• POWER SUPPLY (POSITIVE)	:	+5 V @ 100 mA
• POWER SUPPLY (NEGATIVE)	:	- 5 V @ 100 mA
• CONTROL	:	TTL LOGIC "0"=ON, "1"=OFF
• SIZE	:	1.00" (L) X 1.00" (W) X 0.50" (H)
• WEIGHT	:	1.5 OUNCES TYPICAL

**PRODUCT FEATURE**

ZONE	REV	DESCRIPTION	DATE	APPROVED
		ORIGINAL JOB# 202038E-2	06/29/04	

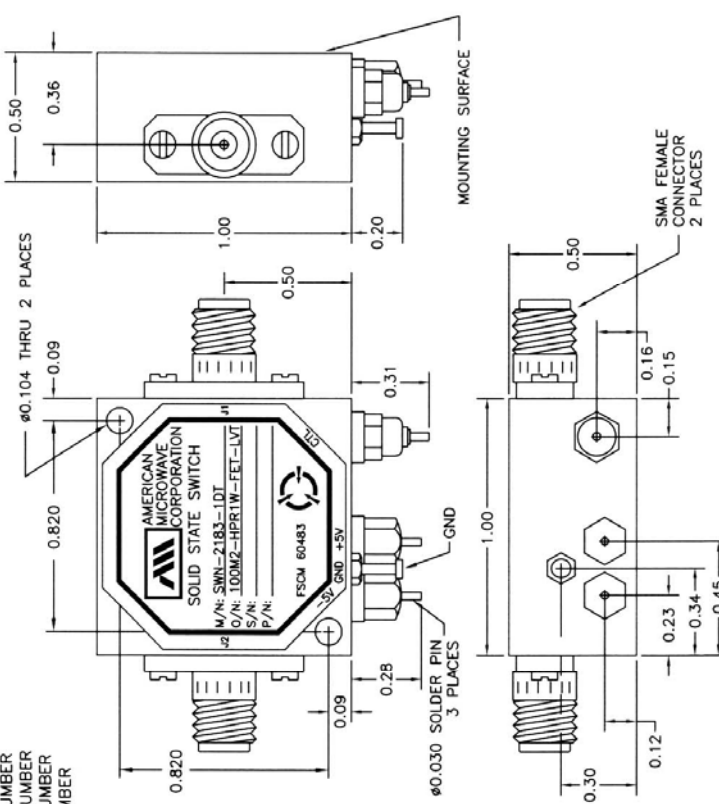
  

**DESCRIPTION:**  
 AMC MODEL SW-2183-1DT-100M2-HPR1W-FET-LVT IS A 0.1 TO 2 GHz, LOW VIDEO TRANSIENT, 1 WATT CW HIGH POWER, NON-REFLECTIVE SPST FET SWITCH HAVING RISE/FALL TIME OF 50nSec MAXIMUM, TURN ON/OFF OF 250nSec MAXIMUM, +5V @ 100mA, -5V @ 100mA, ISOLATION 50dB MINIMUM, 60dB TYPICAL, INSERTION LOSS 2.5dB MAXIMUM, 2.0dB TYPICAL.


**SPECIFICATIONS:**

- FREQUENCY: . . . . . 0.1 TO 2 GHz
- INSERTION LOSS: . . . . . 2.5 dB MAXIMUM, 2.0 dB TYPICAL
- ISOLATION: . . . . . 50 dB MINIMUM, 60 dB TYPICAL
- VSWR: . . . . . 2.0:1
- RF POWER: . . . . . 1 WATT CW
- RISE TIME: . . . . . 50 nS MAXIMUM
- FALL TIME: . . . . . 50 nS MAXIMUM
- DELAY ON: . . . . . 250 nS MAXIMUM
- DELAY OFF: . . . . . 250 nS MAXIMUM
- POWER SUPPLY: . . . . . +5V @ 100mA  
 -5V @ 100mA
- CONTROL: . . . . . TTL LOGIC "0"=ON "1"=OFF
- SIZE: . . . . . 1.00" (L) x 1.00" (W) x 0.50" (H)
- WEIGHT: . . . . . 1.5 OUNCE TYPICAL

M/N = MODEL NUMBER  
 O/N = OPTION NUMBER  
 S/N = SERIAL NUMBER  
 P/N = PART NUMBER



**BLOCK DIAGRAM**



ALL DIMENSIONS ARE IN INCHES  
 TOLERANCES:  
 X.XX ±0.020  
 X.XXX ±0.010

**ENVIRONMENTAL RATINGS**

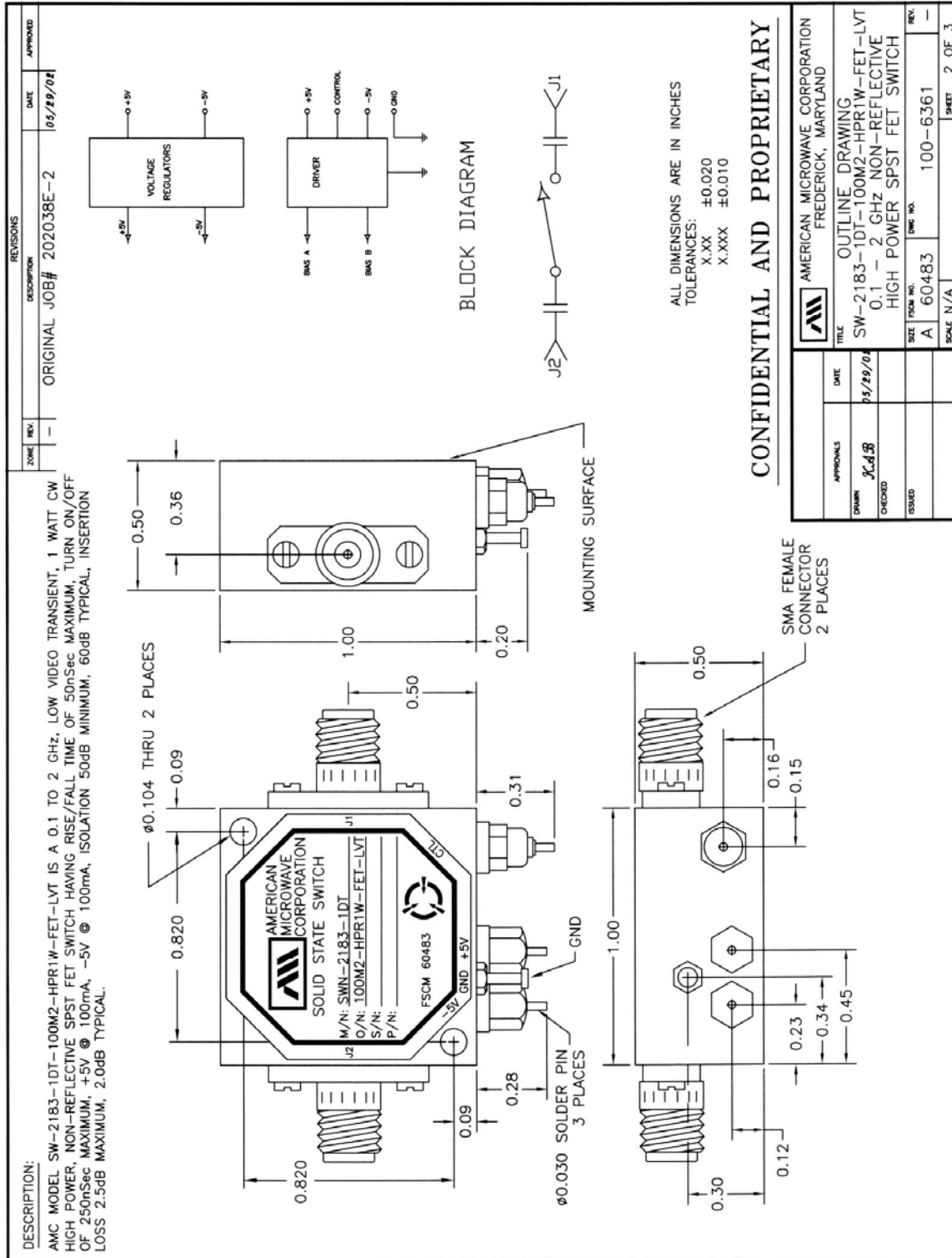
- OPERATING TEMPERATURE: . . . . . -65°C TO 110°C
- NON-OPERATING TEMPERATURE: . . . . . -65°C TO 125°C
- HUMIDITY: . . . . . ML-STD-202F, METHOD 103B COND. B
- SHOCK: . . . . . ML-STD-202F, METHOD 213B COND. B
- VIBRATION: . . . . . ML-STD-202F, METHOD 204D COND. B
- ALTITUDE: . . . . . ML-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: . . . . . ML-STD-202F, METHOD 107D COND. A

**CONFIDENTIAL AND PROPRIETARY**

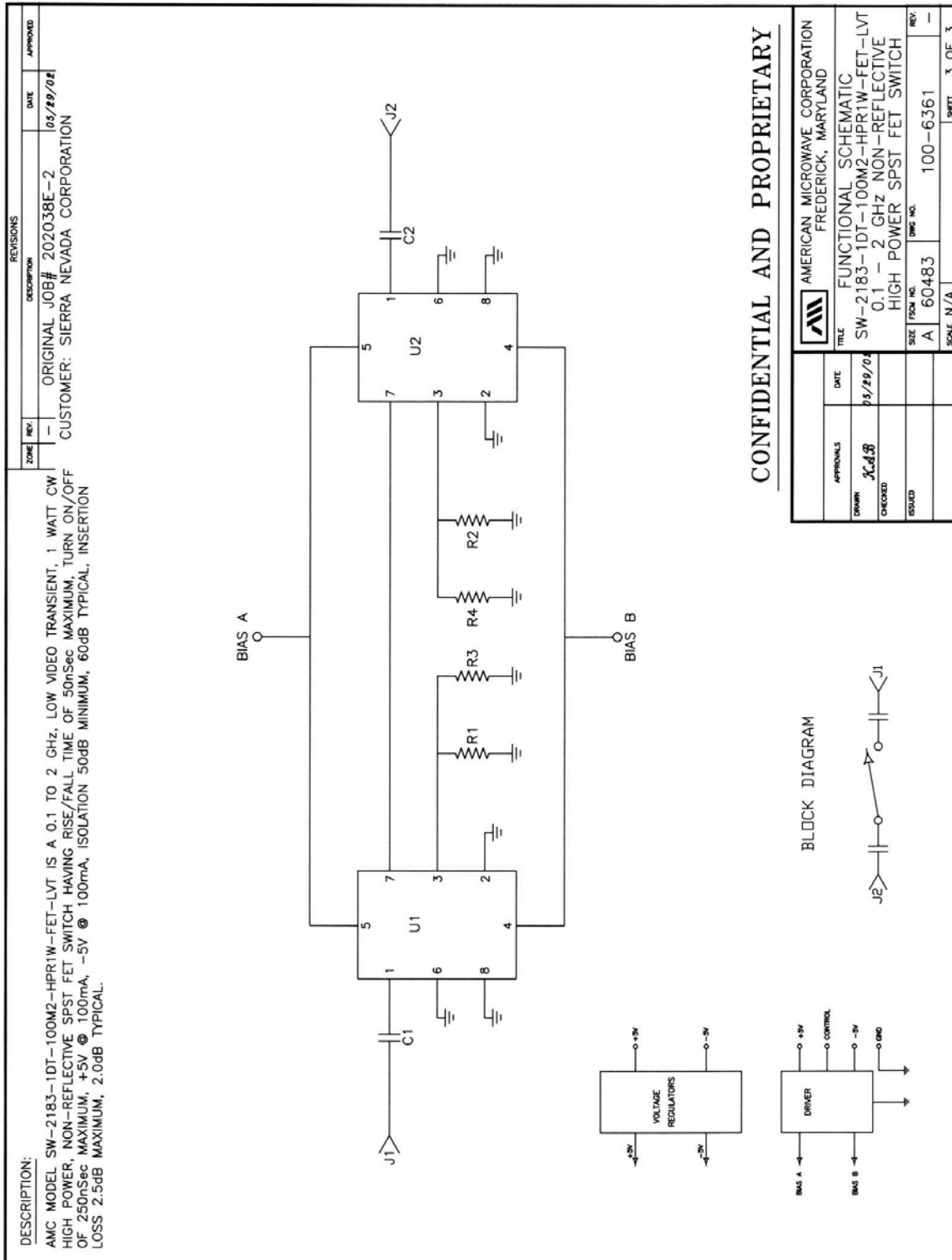
APPROVALS	DATE	TITLE	AMC
		PRODUCT FEATURE	AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
DESIGNED	06/29/04	SW-2183-1DT-100M2-HPR1W-FET-LVT	
CHECKED		0.1 - 2 GHz NON-REFLECTIVE HIGH POWER SPST FET SWITCH	
ISSUED		FORM NO. 60483	
		SCALE N/A	
		REV. 100-6361	
		SHEET 1 OF 3	

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

**OUTLINE DRAWING**



**FUNCTIONAL SCHEMATIC**



## FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

# SW-2183-1DT-100M2-HPR1W-FET-LVT

Serial Numbers:

1MS205116 AND 1MS205117

**FINAL TEST DATA**

AMC MODEL NO: SW-2183-1DT-100M2-HPR1W-FET-LVT, SERIAL NUMBER: 1MS208176

FORMS: 265-SW-DTA  
 DATE: \_\_\_\_\_



AMERICAN MICROWAVE CORPORATION  
 7311-G GROVE RD., FREDERICK MD. 21704  
 TEL: 301-662-4700 FAX: 301-662-4938  
 URL: WWW.AMERICANMICROWAVECORP.COM  
 EMAIL: SALES@AMERICANMICROWAVECORP.CO

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

CUSTOMER: Sierra Nevada      TECHNICIAN: R. A. Abate  
 JOB NO: \_\_\_\_\_  
 MODEL NO: SW-2183-1DT-100M2-HPR1W-FET-LVT      OPTION NO: \_\_\_\_\_  
 SERIAL NO: 1MS208176      SPECIFICATION: \_\_\_\_\_  
 CURRENT DRAW: + 5 VDC @ 4 mA; - 5 VDC @ 1 mA      FREQUENCY RANGE: 100 - 2000 MHz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON db	OUTPUT ON VSWR	OUTPUT OFF db	OUTPUT OFF VSWR
J1 - J2 <u>1.81</u> dB @ 100 - 2000 MHz	<u>18.95</u> dB	<u>1.25</u> : 1	<u>19.20</u> dB	<u>1.25</u> : 1	<u>18.58</u> dB	<u>1.27</u> : 1
dB @ MHz	dB:1.	: 1	dB:1.	: 1	<u>21.03</u> dB	<u>1.19</u> : 1
dB @ MHz	dB:1.	: 1	dB:1.	: 1	dB:1.	: 1
dB @ MHz	dB:1.	: 1	dB:1.	: 1	dB:1.	: 1
dB @ MHz	dB:1.	: 1	dB:1.	: 1	dB:1.	: 1
dB @ MHz	dB:1.	: 1	dB:1.	: 1	dB:1.	: 1
dB @ MHz	dB:1.	: 1	dB:1.	: 1	dB:1.	: 1
dB @ MHz	dB:1.	: 1	dB:1.	: 1	dB:1.	: 1
ISOLATION	SWITCHING SPEED					
	DELAY ON	RISE TIME	DELAY OFF	FALLTIME		
J1 - J2 <u>50</u> dB @ 100-2000 MHz	<u>57</u> nS	<u>25</u> nS	<u>28</u> nS	<u>7</u> nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
VIDEO TRANSIENTS: <u>600mV</u> P-P @ <u>300</u> MHz BW						
VIDEO TRANSIENTS: <u>580mV</u> P-P @ <u>20</u> MHz BW						

NOTE: Any additional test data on back

TESTED ON: HP 8720c

QA/QC APPROVAL: \_\_\_\_\_ Q3 DATED: 11/01/02





**FINAL TEST DATA**

AMC MODEL NO: SW-2183-1DT-100M2-HPR1W-FET-LVT, SERIAL NUMBER: 1MS208178

FORMS: 265-SW-DTA  
 DATE: \_\_\_\_\_



AMERICAN MICROWAVE CORPORATION  
 7311-G GROVE RD., FREDERICK MD. 21704  
 TEL: 301-662-4700 FAX: 301-662-4938  
 URL: WWW.AMERICANMICROWAVECORP.COM  
 EMAIL: SALES@AMERICANMICROWAVECORP.CO

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

CUSTOMER: Sierra Nevada      TECHNICIAN: R. Afable  
 JOB NO: \_\_\_\_\_  
 MODEL NO: SW-2183-1DT-100M2-HPR1W-FET-LVT      OPTION NO: \_\_\_\_\_  
 SERIAL NO: 1MS208178      SPECIFICATION: \_\_\_\_\_  
 CURRENT DRAW: +5 VDC @ 4 mA; -5 VDC @ 1 mA      FREQUENCY RANGE: 100 - 2000 MHz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON db	OUTPUT ON VSWR	OUTPUT OFF db	OUTPUT OFF VSWR
J1 - J2 <u>1.51</u> dB @ 100 - 2000 MHz	<u>21.94</u> dB	<u>1.17</u> : 1	<u>21.53</u> dB	<u>1.18</u> : 1	<u>27.65</u> dB	<u>1.09</u> : 1
dB @ MHz	dB	: 1	dB	: 1	<u>22.19</u> dB	<u>1.17</u> : 1
dB @ MHz	dB	: 1	dB	: 1	dB	: 1
dB @ MHz	dB	: 1	dB	: 1	dB	: 1
dB @ MHz	dB	: 1	dB	: 1	dB	: 1
dB @ MHz	dB	: 1	dB	: 1	dB	: 1
dB @ MHz	dB	: 1	dB	: 1	dB	: 1
dB @ MHz	dB	: 1	dB	: 1	dB	: 1
ISOLATION	SWITCHING SPEED					
	DELAY ON	RISE TIME	DELAY OFF	FALLTIME		
J1 - J2 <u>51</u> dB @ 100-2000 MHz	<u>50</u> nS	<u>20</u> nS	<u>31</u> nS	<u>14</u> nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
dB @ MHz	nS	nS	nS	nS		
VIDEO TRANSIENTS: <u>640</u> mV P-P @ <u>300</u> MHz BW						
VIDEO TRANSIENTS: <u>580</u> mV P-P @ <u>20</u> MHz BW						

NOTE: Any additional test data on back

TESTED ON: HP 8720C  
 Q3

QA/QC APPROVAL: \_\_\_\_\_ DATED: 4/10/02