



TEST REPORT
ON
2 TO 18 GHz
SINGLE POLE SINGLE THROW
ABSORPTIVE SWITCH MODULE

AMC MODEL No:
SW-2184-1AT-231

Serial Numbers: 1MS101028 THRU 1MS101036

DESIGNED
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REPORTED
BY
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November 2, 2004

*JBT DRH E 30
JRM SK P AS
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ISO9001 : 2000 CERTIFIED

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SINGLE POLE SINGLE THROW ABSORPTIVE SWITCH MODULE AMC MODEL No: SW-2184-1AT-231

FEATURES:

- **2 TO 18 GHz FREQUENCY RANGE**
- **HIGH ISOLATION**
- **HIGH SPEED**
- **LOW VIDEO TRANSIENT**

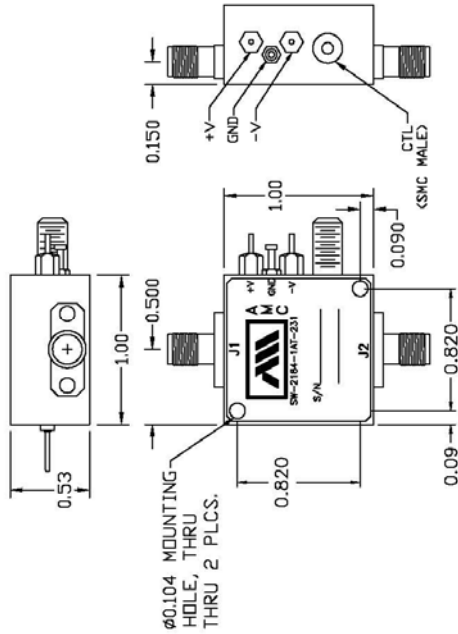
SPECIFICATIONS:

- **FREQUENCY** : 2 TO 18 GHz
- **INSERTION LOSS** : 3.5 dB MAXIMUM
- **ISOLATION** : 80 dB MINIMUM
- **VSWR** : 2.0:1
- **SWITCHING SPEED**
 - RISE : 10 nSEC MAXIMUM
 - FALL : 10 nSEC MAXIMUM
 - ON : 30 nSEC MAXIMUM
 - OFF : 30 nSEC MAXIMUM
- **RF POWER RATINGS** : +27 dBm CW MAXIMUM
- **IN-BAND VIDEO POWER / TRANSIENTS** : -60 dBm MAXIMUM OR 10 mV (PEAK TO PEAK) IN
100 MHz BANDWIDTH
TTL COMPATIBLE UNITY LOAD
- **CONTROLS** : LOGIC "0" = INSERTION LOSS
LOGIC "1" = ISOLATION
- **POWER SUPPLY** : +5 VDC ± 5% @ 70 mA MAXIMUM
-5 VDC ± 5% @ 70 mA MAXIMUM
- **CONNECTORS**
 - RF INPUT/OUTPUT : SMA FEMALE
 - POWER : SOLDER PIN (EMI)
 - CONTROL : SMC MALE
- **SIZE** : 1.0" x 1.0" x 0.53"

PRODUCT FEATURE

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A		ORIGINAL RELEASE, NEW DEVELOPMENT	11/22/02	

MECHANICAL OUTLINE



MECHANICAL OUTLINE

0.53, 1.00, 0.150, 0.820, 0.090, 0.09

J1, J2, CTL (SMC MALE), S/N

0.104 MOUNTING HOLE, THRU THRU 2 PLCS.

NOTES:

- 1) DIMENSIONS ARE IN INCHES
X.XX ±0.020
X.XXX ±0.010
APPROX. 1.5 OZ
- 2) TOLERANCES:
- 3) WEIGHT:

DESCRIPTION

AMC MODEL SW-2184-1AT IS AN ABSORPTIVE SPST SWITCH WITH INTEGRAL TTL DRIVER DESIGNED FOR HIGH ISOLATION, HIGH SPEED, AND LOW VIDEO TRANSIENT APPLICATIONS.

SPECIFICATIONS

- FREQUENCY RANGE 2-18 GHz MINIMUM
- INSERTION LOSS 3.5 dB MAXIMUM
- ISOLATION 80 dB MINIMUM
- VSWR (ON/OFF) 2.0:1 MAXIMUM
- SWITCHING TIME
 RISE (10% RF TO 90% RF) 10 nsec MAXIMUM
 FALL (90% RF TO 10% RF) 10 nsec MAXIMUM
 ON (50% TTL TO 90% RF) 30 nsec MAXIMUM
 OFF (50% TTL TO 10% RF) 30 nsec MAXIMUM
- RF POWER RATINGS +27 dBm CW MAXIMUM
- IN-BAND VIDEO POWER/TRANSIENTS -60 dBm MAXIMUM, OR
 10 mV (P-P) IN 100 MHz BW
- CONTROLS TTL COMPATIBLE, UNITY LOAD
 LOGIC "0" = INSERTION LOSS
 LOGIC "1" = ISOLATION
- POWER SUPPLY +5VDC ±5% @ 70 mA MAXIMUM
 -5VDC ±5% @ 70 mA MAXIMUM
- CONNECTORS
 RF INPUT/OUTPUT SMA FEMALE
 POWER SOLDER PIN (EMI)
 CONTROL SMC (MALE)
- SIZE 1.0" x 1.0" x 0.53"

ENVIRONMENTAL RATINGS

- TEMPERATURE -55°C TO +95°C (OPERATING)
 -55°C TO +125°C (STORAGE)
- HUMIDITY MIL-STD-202F, METHOD 103B COND. B
- SHOCK MIL-STD-202F, METHOD 213B COND. B
- VIBRATION MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE MIL-STD-202F, METHOD 107D COND. A

AVAILABLE OPTIONS

- A01 50Ω CONTROL IMPEDANCE
- A02 100Ω CONTROL IMPEDANCE
- A03 INVERSE CONTROL LOGIC (LOGIC "0" ISOLATION)
- A13 ±9 TO ±15 VOLTS SUPPLY
- A14 J1 SMA MALE, J2 SMA FEMALE CONNECTORS
- A15 TWO SMA MALE CONNECTORS
- A18 SOLDER TYPE CONTROL TERMINAL


ENVIRONMENTAL RATINGS

- TEMPERATURE -55°C TO +95°C (OPERATING)
 -55°C TO +125°C (STORAGE)
- HUMIDITY MIL-STD-202F, METHOD 103B COND. B
- SHOCK MIL-STD-202F, METHOD 213B COND. B
- VIBRATION MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE MIL-STD-202F, METHOD 107D COND. A

PRODUCT FEATURE

AMERICAN MICROWAVE CORPORATION
 7311G GROVE RD., FREDERICK, MD. 21701
 TEL: (301) 662-4700 FAX: (301) 662-4938

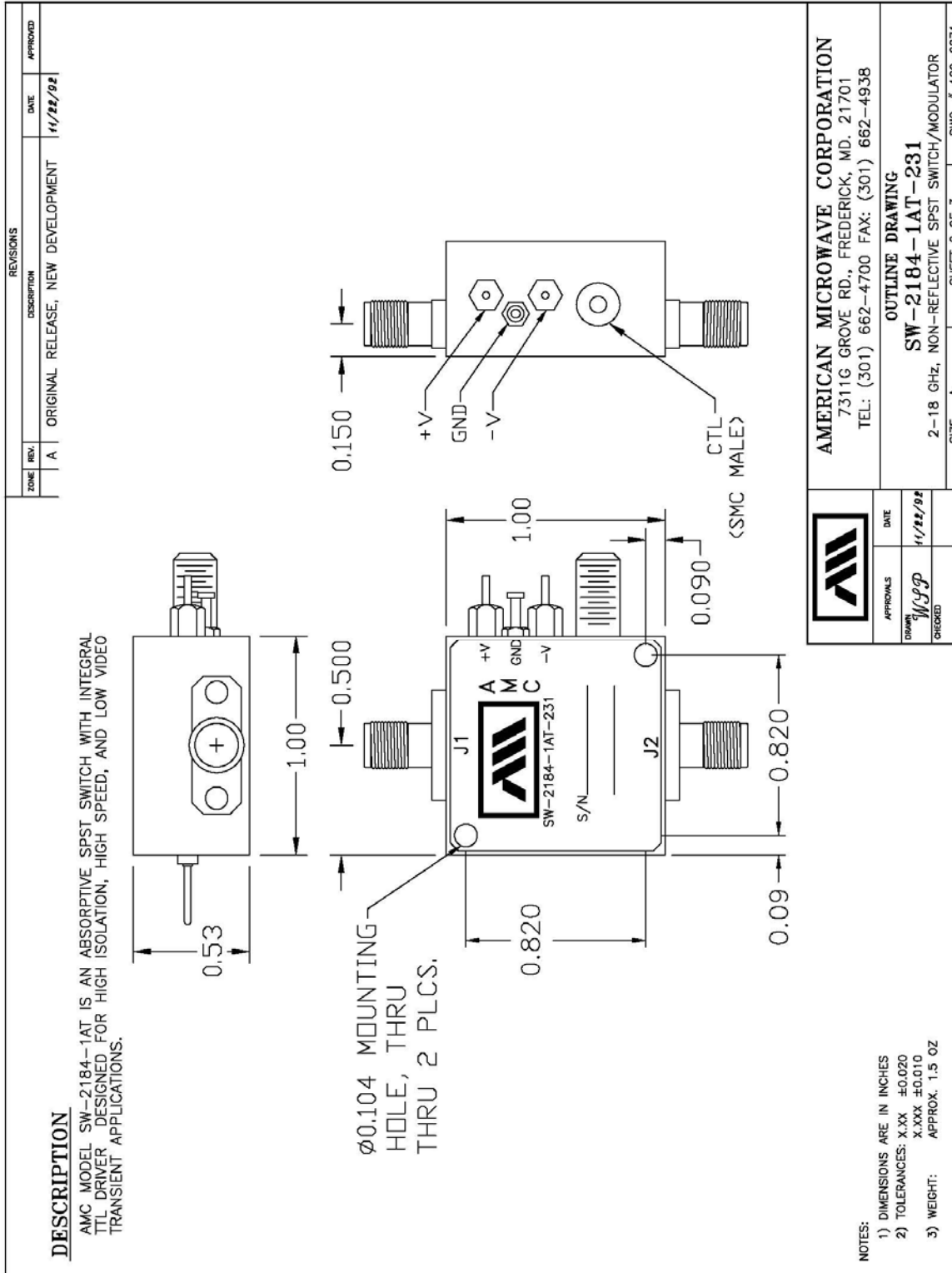
2-18 GHz, NON-REFLECTIVE SPST SWITCH/MODULATOR

APPROVALS:  DATE: 11/22/02

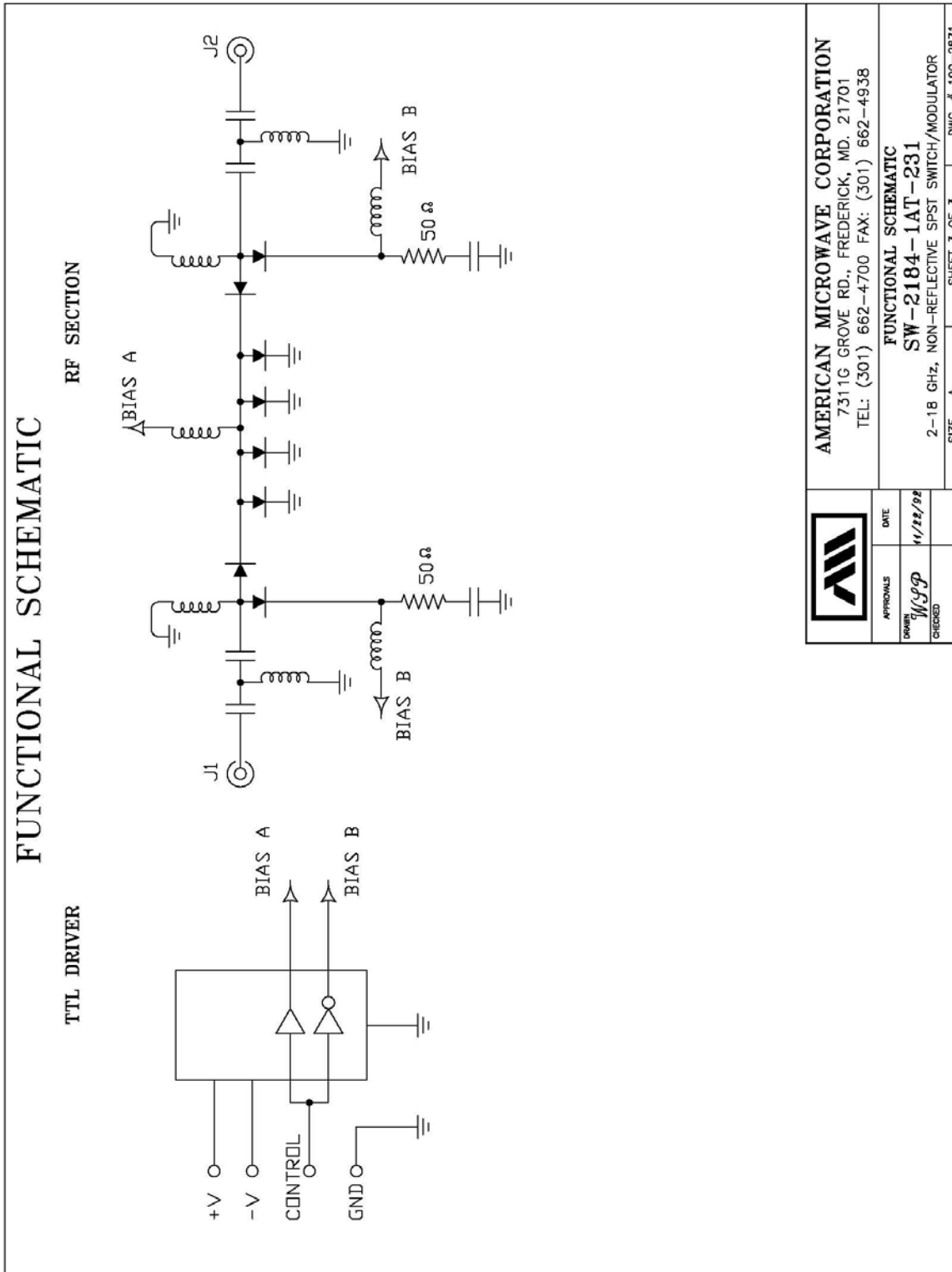
DRAWN: WJGPP CHECKED: WJGPP

SIZE: A SHEET 1 OF 3 DWG. # 100-2871

OUTLINE DRAWING



FUNCTIONAL SCHEMATIC



FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

SW-2184-1AT-231

Serial Numbers:

1MS101028 THRU 1MS101036

FINAL TEST DATA

AMC MODEL NO: SW-2184-1AT-231 SERIAL NUMBER: 1MS101029

FORM: 118-SW-DTA 8/00



AMERICAN MICROWAVE CORPORATION
 7311-G GROVE RD., FREDERICK MD, 21704
 TEL: 301-662-4700 FAX: 301-662-4938

DATE: 01/30/01

FINAL TEST DATA
 ON
 MICROWAVE SWITCH

CUSTOMER: MATECH ELEC. TECHNICIAN: THACH
 JOB NO: 009197E
 MODEL NO: SWN-2184-1AT-231 OPTION NO: _____
 SERIAL NO: 1MS101029 SPECIFICATION: _____
 CURRENT DRAW: + 5 VDC @70 mA; - 5 VDC @70 mA FREQUENCY RANGE: 6-18 GHz

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>4.0 dB</u>	<u>10.1 dB</u>	<u>1.91 : 1</u>	<u>10.1 dB</u>	<u>1.91 : 1</u>	<u>10.0 dB</u>	<u>1.92 : 1</u>
	dB 1. : 1		dB 1. : 1		dB 1. : 1	
	dB 1. : 1		dB 1. : 1		dB 1. : 1	
	dB 1. : 1		dB 1. : 1		dB 1. : 1	
	dB 1. : 1		dB 1. : 1		dB 1. : 1	
	dB 1. : 1		dB 1. : 1		dB 1. : 1	
	dB 1. : 1		dB 1. : 1		dB 1. : 1	
	dB 1. : 1		dB 1. : 1		dB 1. : 1	
	dB 1. : 1		dB 1. : 1		dB 1. : 1	

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 <u>>60 dB</u>	<u><30 nS</u>	<u><10 nS</u>	<u><30 nS</u>	<u><10 nS</u>
	nS	nS	nS	nS
	nS	nS	nS	nS
	nS	nS	nS	nS
	nS	nS	nS	nS
	nS	nS	nS	nS
	nS	nS	nS	nS
	nS	nS	nS	nS
	nS	nS	nS	nS

NOTE: Any additional test data on back
 TESTED ON: _____

HP 8720C

QA/QC APPROVAL: Q4 Donald Harmon

DATED: 2/5/01

FINAL TEST DATA

AMC MODEL NO: SW-2184-1AT-231 SERIAL NUMBER: 1MS101033

FORM: 118-SW-DTA 9/00



AMERICAN MICROWAVE CORPORATION
 7311-G GROVE RD., FREDERICK MD. 21704
 TEL: 301-662-4700 FAX: 301-662-4938

DATE: 1/30/01

FINAL TEST DATA
 ON
 MICROWAVE SWITCH

CUSTOMER: MATECH ELEC.
 JOB NO: 009197E
 MODEL NO: SWN-2184-1AT-231
 SERIAL NO: 1MS101033
 CURRENT DRAW: + 5 VDC @70 mA; -5 VDC @70 mA

TECHNICIAN: THACH
 OPTION NO: _____
 SPECIFICATION: _____
 FREQUENCY RANGE: 6 -18 GHz

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>3.91</u> dB	<u>9.84</u> dB	<u>1.95</u> : 1	<u>9.90</u> dB	<u>1.94</u> : 1	<u>10.6</u> dB	<u>1.84</u> : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
	dB	1. : 1	dB	1. : 1	dB	1. : 1		
ISOLATION	SWITCHING SPEED							
	DELAY ON		RISE TIME		DELAY OFF		FALL TIME	
J1-J2 <u>>60</u> dB	<u><30</u>	nS	<u><10</u>	nS	<u><30</u>	nS	<u><10</u>	nS
		nS		nS		nS		nS
		nS		nS		nS		nS
		nS		nS		nS		nS
		nS		nS		nS		nS
		nS		nS		nS		nS
		nS		nS		nS		nS
		nS		nS		nS		nS
		nS		nS		nS		nS
		nS		nS		nS		nS

NOTE: Any additional test data on back
 TESTED ON: HP 8720C
 QA/QC APPROVAL: Q4 Donald Harmon DATED: 2/5/01

