



**TEST DATA**

**ON**

**1 GHz TO 5 GHz**

**AND**

**2.2 GHz TO 2.4 GHz**

**LOW INSERTION LOSS**

**SINGLE POWER SUPPLY**

**FAIL SAFE**

**REFLECTIVE**

**SP2T**

**SOLID STATE SWITCH**

**AMC MODEL No:  
SWN-218-2DR-SS-FS  
(Serial Number: 2MS010361)**

**PREPARED  
BY  
KATIE BAISEY**

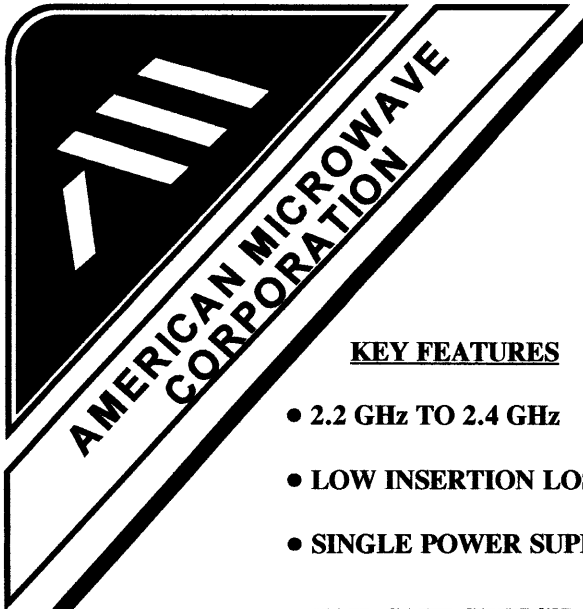
**TESTED  
BY  
RENE AFABLE**

**NOVEMBER 21, 2000**

**WEB PAGE: [HTTP://WWW.AMWAVE.COM](http://www.amwave.com)**

**E-MAIL ADDRESS: [AMCPMI@AOL.COM](mailto:AMCPMI@AOL.COM)**

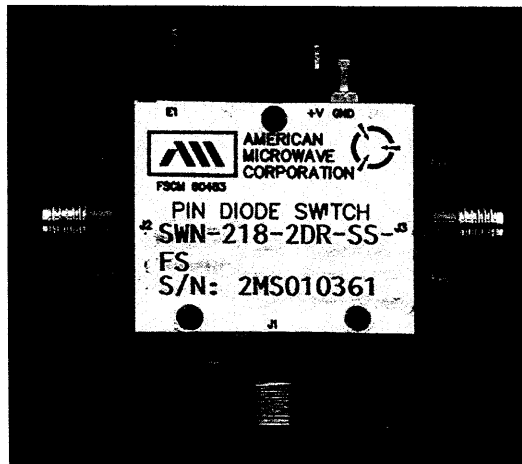
**7311 G GROVE ROAD, FREDERICK, MARYLAND 21704 • Tel. (301) 662-4700 • Fax (301) 662-4938**



**LOW INSERTION LOSS, SINGLE  
POWER SUPPLY, FAIL SAFE,  
SP2T SOLID STATE SWITCH**

**KEY FEATURES**

- 2.2 GHz TO 2.4 GHz
- LOW INSERTION LOSS
- SINGLE POWER SUPPLY
- FAIL SAFE SWITCH
- TTL COMPATIBLE



**AMC MODEL No: SWN-218-2DR-SS-FS**

**SPECIFICATIONS: (REFLECTIVE)**

● FREQUENCY RANGE	:	2.2 GHz to 2.4 GHz (other frequencies available)
● INSERTION LOSS	:	1.5 dB MAX.
	:	0.5 dB TYP. @ 2.2 GHz (FAIL SAFE ARM)
	:	0.5 dB TYP. @ 2.4 GHz (FAIL SAFE ARM)
	:	1.0 dB TYP. @ 2.2 GHz
	:	1.0 dB TYP. @ 2.4 GHz
● ISOLATION	:	≥ 30 dB MIN.
	:	≥ 35 dB TYP. @ 2.2 GHz (FAIL SAFE ARM)
	:	≥ 35 dB TYP. @ 2.4 GHz (FAIL SAFE ARM)
	:	≥ 30 dB TYP. @ 2.2 GHz
	:	≥ 30 dB TYP. @ 2.4 GHz
● VSWR	:	1.75:1
● SWITCHING SPEED	:	"RISE" 50nS MAX., 35nS TYP.
	:	"FALL" 50nS MAX., 10nS TYP.
	:	"ON" 1.5uS MAX., 1.4uS TYP.
	:	"OFF" 1.5uS MAX., 1.4uS TYP.
● CONTROL	:	Single Control TTL compatible
● VIDEO TRANSIENT	:	≤510 mV peak to peak @ 300 MHz (FAIL SAFE ARM)
	:	≤210 mV peak to peak @ 20 MHz (FAIL SAFE ARM)
	:	≤910 mV peak to peak at 300 MHz bandwidth
	:	≤400 mV peak to peak at 20 MHz bandwidth
● RF INPUT POWER	:	+20dBm (CW)(other power levels available)
● DC POWER SUPPLY	:	+5vdc @ 100mA MAX.
(Other supply voltages available)	:	
● SIZE	:	1.2" (L) X 1.0" (W) X 0.5" (H)
● WEIGHT	:	≤1.5 oz. TYPICAL

NOVEMBER 21, 2000

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## SUMMARY TEST DATA

**MODEL NUMBER**

**: SWN-218-2DR-SS-FS**

**SERIAL NUMBER**

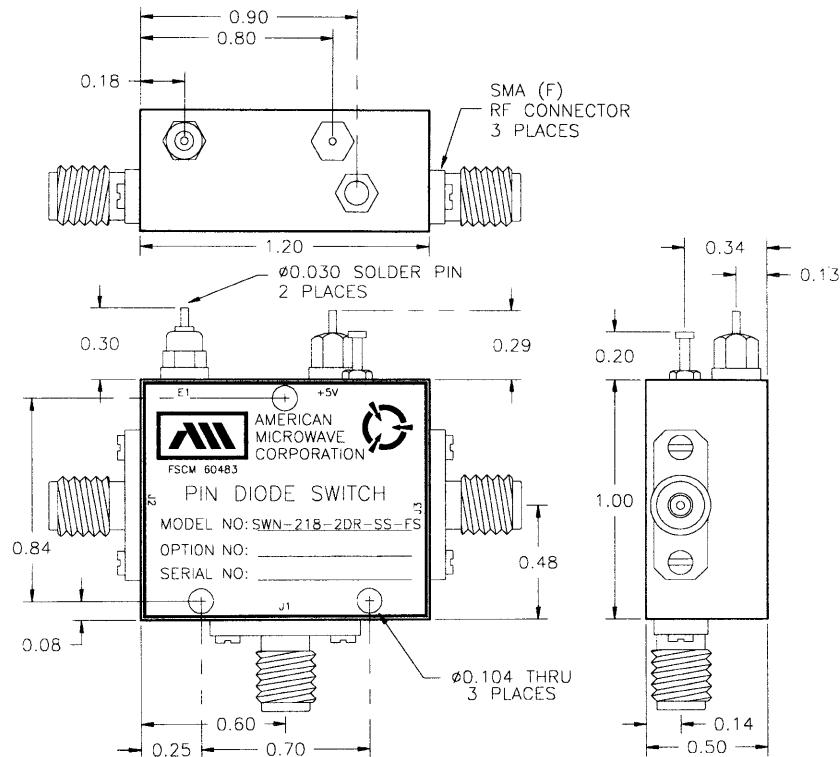
**: 2MS010361**

**ENGINEER**

**: RENE AFABLE**

**VOLTAGE & CURRENT DRAW**

**: +5vdc @ 62.5mA**



**ALL DIMENSIONS ARE IN INCHES**

**TOLERANCES:**

X.XX	±0.020
X.XXX	±0.010

### **ENVIRONMENTAL RATINGS:**

- **TEMPERATURE:**.....-55°C TO +85°C (OPERATING)  
-65°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

**NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION.**

**NOVEMBER 21, 2000**

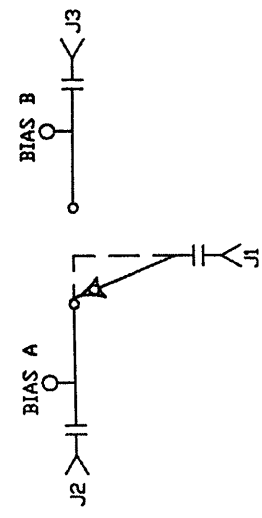
ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL JOB# 008190E	11/29/00	

**DESCRIPTION:**  
 AMC MODEL SWN-218-2DR-SS-FS IS A SINGLE POLE TWO THROW, FAIL SAFE REFLECTIVE SOLID STATE SWITCH MODULE WITH VERY LOW INSERTION LOSS AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR 2.2 TO 2.4 GHz OPERATION.

**SPECIFICATIONS:**

- FREQUENCY: ..... 2.2 GHz TO 2.4 GHz
- INSERTION LOSS: ..... 1.5 dB MAX.
- ISOLATION: ..... 22 dB MIN.
- VSWR (ALL PORTS): ..... 1.6:1
- SWITCHING SPEED: (50% TTL TO 90% RF) ..... 2 us MAX.
- CONTROL: ..... TTL SINGLE CONTROL
- POWER SUPPLY: ..... +5 VDC @ 100 mA MAXIMUM
- CONNECTORS (RF): ..... SMA FEMALE, 3 PLACES
- CONNECTORS (POWER): ..... SOLDER PINS
- CONNECTORS (CONTROL): ..... SOLDER PINS
- LOGIC "0": ..... J1 TO J2 (FAIL SAFE ARM)
- LOGIC "1": ..... J1 TO J3
- SIZE: ..... 1.20" (L) x 1.00" (W) x 0.50" (H)
- WEIGHT: ..... 1.5 OUNCE TYPICAL

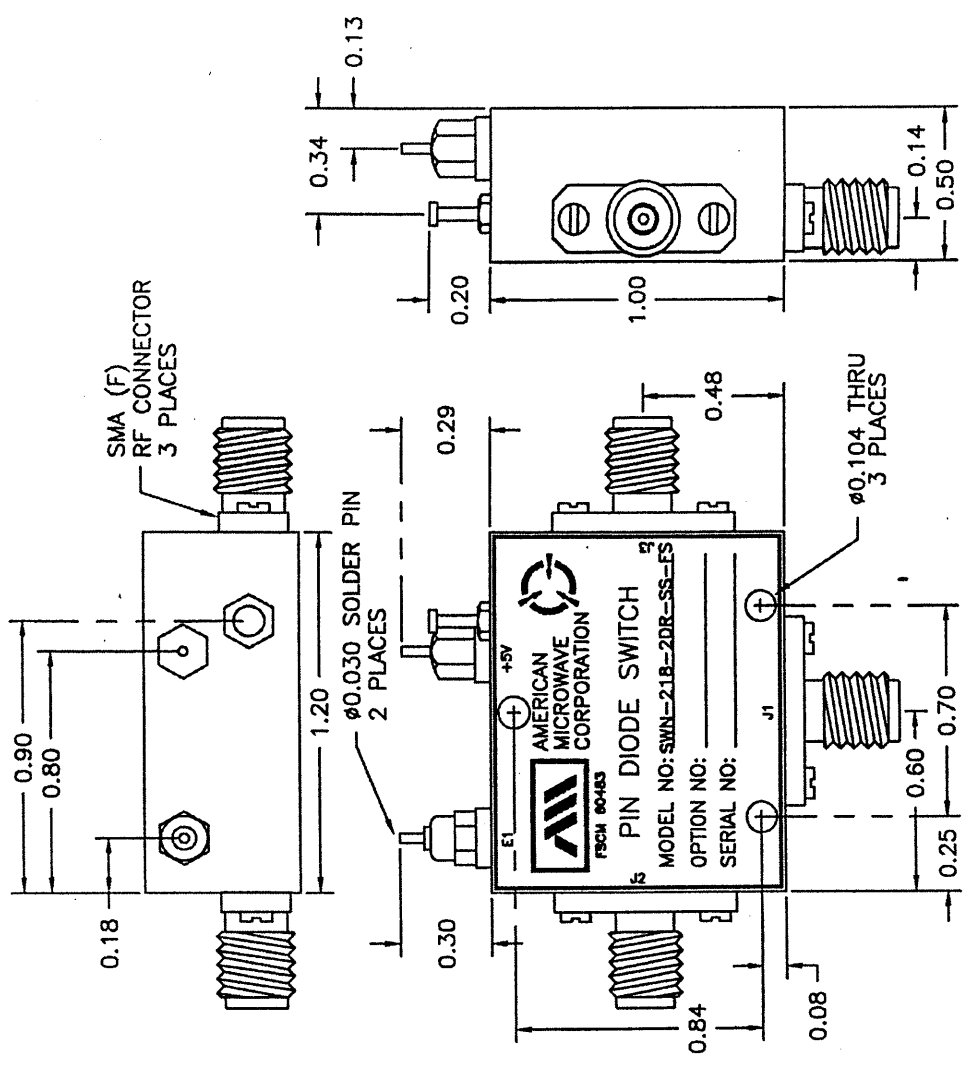
**BLOCK DIAGRAM**



**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: ..... -55°C TO +85°C (OPERATING)
- TEMPERATURE: ..... -85°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

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION



NOTE:  
 DR=WITH DRIVER, REFLECTIVE

**CONFIDENTIAL AND PROPRIETARY**

APPROVALS		DATE
DRAWN: WJP, R.R.A.		11/29/00
CHECKED: [Signature]		11/29/00
ISSUED: [Signature]		11/29/00
TITLE: AMERICAN MICROWAVE CORPORATION, FREDERICK, MARYLAND		
PRODUCT FEATURE: SWN-218-2DR-SS-FS		
FAIL SAFE SOLID STATE SWITCH		
SIZE: FROM NO.	DRG NO.	REV.
A	60483	100-4427-14
SCALE: N/S	SHEET: 1	OF 3

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

**DESCRIPTION:**  
 AMC MODEL SWN-2DR/DT-STANDARD IS A SINGLE POLE TWO THROW, REFLECTIVE OR ABSORPTIVE/NON-REFLECTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS, HIGH ISOLATION AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

**SPECIFICATIONS:**

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.5db  
 ABSORPTIVE: 3.5db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db  
 2 GHz TO 18 GHz: 70db
- VSWR: REFLECTIVE IN/OUT: 2.0:1  
 ABSORPTIVE IN/OUT: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.  
 FALL: 10ns TYPICAL, 15ns MAX.  
 DELAY ON: 75ns TYPICAL, 100ns MAX.  
 DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0" = J1-J2 ON "1" = J1-J3 ON
- POWER SUPPLY: +5V @ 100 mA MAX.  
 -5V @ 75mA MAX.(REFLECTIVE)  
 100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- CONNECTORS: SMA FEMALE  
 CONTROL SOLDER PIN  
 SIZE: 1.20" (L) x 1.00" (W) x 0.50" (H)  
 WEIGHT: 1.5 OUNCE TYPICAL

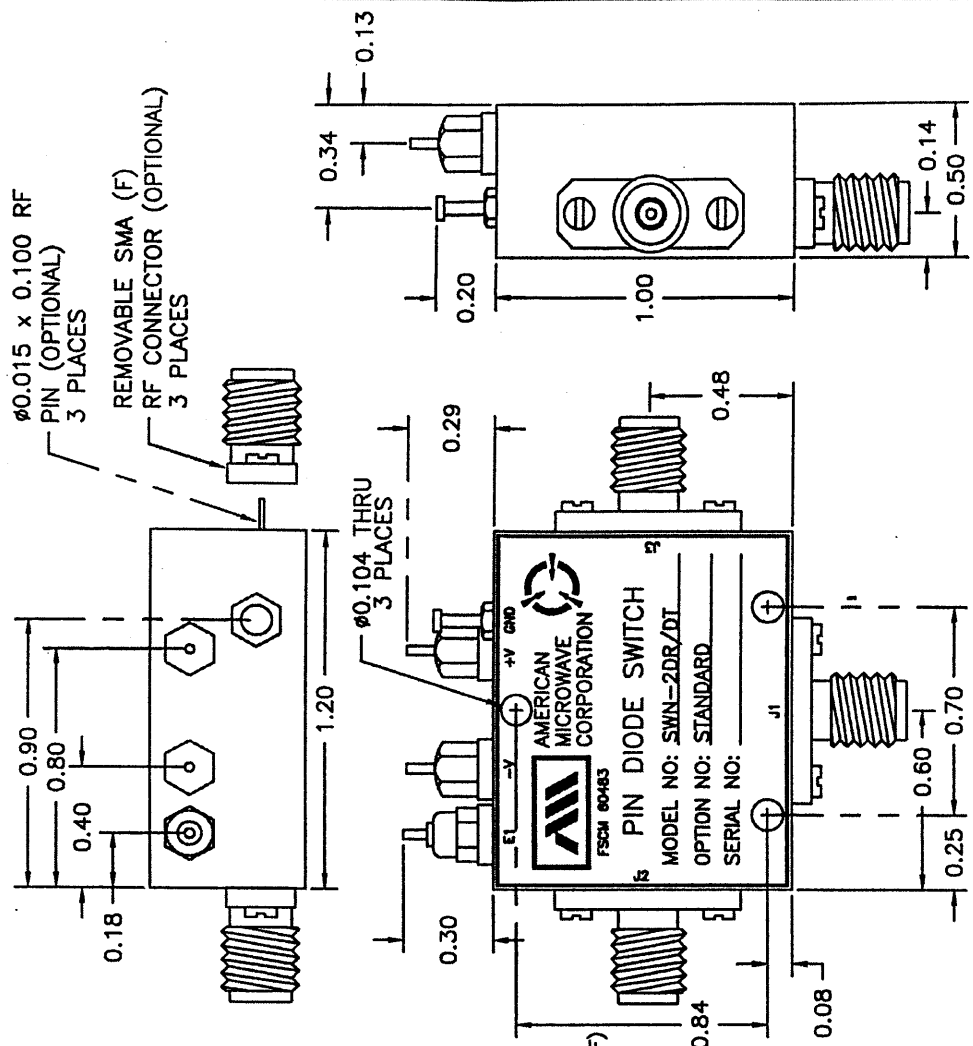
**OPTIONS:**

- SINGLE CONTROL WITH SOLDER PIN STANDARD
- IND-SP INDEPENDANT CONTROL WITH SOLDER PIN (LOGIC "0" = ON "1" = OFF)
- 10M18 10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5dB AT 10 MHz AND 0.5dB AT 18 GHz)
- 100M18 100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5dB AT 100 MHz AND 0.5dB AT 18 GHz)
- 11B 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 21B 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 412 4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
- 618 6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 121B 12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 100M20 100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5dB AT 100 MHz AND 1.0db AT 20 GHz)
- 220 2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- 1020 10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- B01 -12V POWER SUPPLIES
- B02 -15V POWER SUPPLIES
- B03 REVERSE LOGIC "1"=ON "0"=OFF
- B04 DRIVERLESS, CURRENT CONTROLLED
- B05 HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
- B06 HIGH POWER - SPECIFY CW POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
- B07 CUSTOM DESIGNED PRODUCT - SPECIFY INITIALS OF CUSTOMER
- B08 LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
- B09 LOW INSERTION LOSS VERSION
- B10 HIGHER ISOLATION VERSION

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: -55°C TO +85°C (OPERATING)  
 -65°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

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION



NOTE:  
 DR=WITH DRIVER, REFLECTIVE  
 DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

APPROVALS		DATE	TITLE
DRAWN: WSP, PRA		7/29/99	AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
CHECKED: WJP		7/29/99	OUTLINE DRAWING
ISSUED: [Signature]			SWN-2DR/DT-STANDARD SOLID STATE SWITCH
SIZE	FSCN NO.	DWG NO.	REV.
A	60483	100-4427-1	
SCALE N/S		SHEET 1 of 2	

**DESCRIPTION:**

AMC MODEL SWN-2DR/DT-IND-SP IS A SINGLE POLE TWO THROW, REFLECTIVE OR ABSORPTIVE/NON-REFLECTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS, HIGH ISOLATION AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

**SPECIFICATIONS:**

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.5db  
ABSORPTIVE: 3.5db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db  
2 GHz TO 18 GHz: 70db
- VSWR: REFLECTIVE IN/OUT: 2.0:1  
ABSORPTIVE IN/OUT: 2.0:1  
REFLECTIVE OUT/OFF: 2.0:1  
ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.  
FALL: 10ns TYPICAL, 15ns MAX.  
DELAY ON: 75ns TYPICAL, 100ns MAX.  
DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"= J1-J2 ON "1"= J1-J3 ON
- POWER SUPPLY: +5V @ 100 mA MAX.  
-5V @ 75mA MAX.(REFLECTIVE)  
100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- CONNECTORS: SMA FEMALE  
RF CONTROL SOLDER PIN
- SIZE: 1.20" (L) x 1.00" (W) x 0.50" (H)
- WEIGHT: 1.5 OUNCE TYPICAL

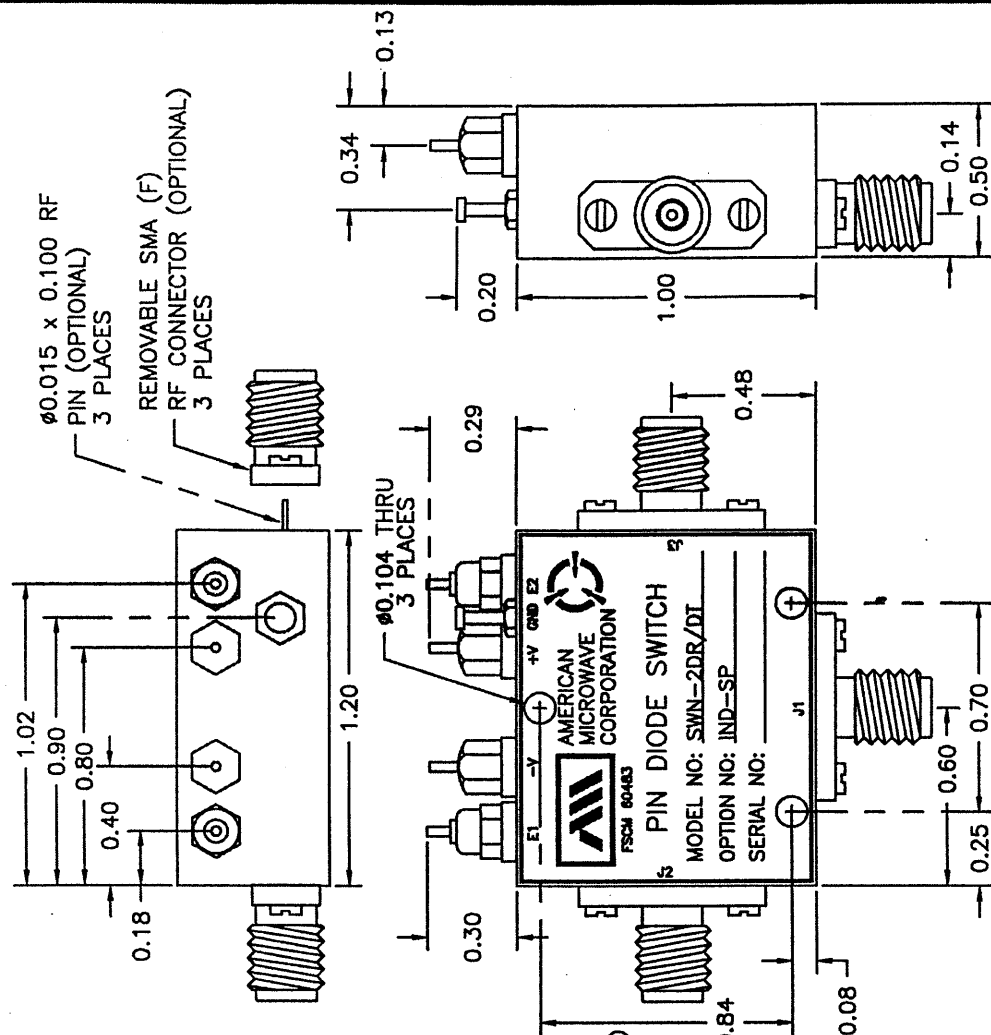
**OPTIONS:**

- SINGLE CONTROL WITH SOLDER PIN STANDARD
- IND-SP INDEPENDANT CONTROL WITH SOLDER PIN (LOGIC "0" = ON "1" = OFF)
- 10M18 10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
- 100M18 100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
- 118 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 218 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 412 4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
- 618 6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 1218 12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 100M20 100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
- 220 2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- 1020 10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- B01 -12V POWER SUPPLIES
- B02 -15V POWER SUPPLIES
- B03 REVERSE LOGIC "1"=ON "0"=OFF
- B04 DRIVERLESS, CURRENT CONTROLLED
- B05 HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
- B06 HIGH POWER - SPECIFY CW POWER, PULSE WIDTH, DUTY CYCLE RF FREQUENCY AND BANDWIDTH
- B07 CUSTOM DESIGNED PRODUCT- SPECIFY INITIALS OF CUSTOMER
- B08 LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
- B09 LOW INSERTION LOSS VERSION
- B10 HIGHER ISOLATION VERSION

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: -55C TO +85C (OPERATING)  
-85C TO +125C (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

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION



**NOTE:**

- DR=WITH DRIVER, REFLECTIVE
- DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE	7/29/99	

APPROVALS		DATE	TITLE
DRAWN	WSP, RSD	7/29/99	OUTLINE DRAWING
CHECKED	WSP	7/29/99	SWN-2DR/DT-IND-SP
ISSUED	WSP	7/29/99	SOLID STATE SWITCH

SIZE	FSCM NO.	DWG. NO.	REV.
A	60483	100-4427-2	

SCALE	SHEET
N/S	1 of 2

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

AMERICAN MICROWAVE CORPORATION  
FREDERICK, MARYLAND

**DESCRIPTION:**

AMC MODEL SWN-2DR/DT-AKG-STANDARD IS A SINGLE POLE TWO THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH VERY HIGH ISOLATION, LOW LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

**SPECIFICATIONS:**

- FREQUENCY: 0.5 GHz TO 18 GHz
- REFLECTIVE: 4.0dB
- ABSORPTIVE: 4.5dB
- ISOLATION: 0.5 GHz TO 6 GHz: 110dB
- 6 GHz TO 18 GHz: 100dB
- VSWR: REFLECTIVE IN/OUT: 2.0:1
- ABSORPTIVE IN/OUT: 2.0:1
- ABSORPTIVE OUT/OFF: 2.0:1
- RISE: 10ns TYPICAL 15ns MAX.
- FALL: 10ns TYPICAL 15ns MAX.
- DELAY ON: 75ns TYPICAL 100ns MAX.
- DELAY OFF: 75ns TYPICAL 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0" = J1-J2 ON "1" = J1-J3 ON
- POWER SUPPLY: +5V @ 100 mA MAX.
- -5V @ 75mA MAX.(REFLECTIVE)
- 100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.2" (L) x 1.00" (W) x 0.50" (H)
- WEIGHT: 1.2 oz.

**OPTIONS:**

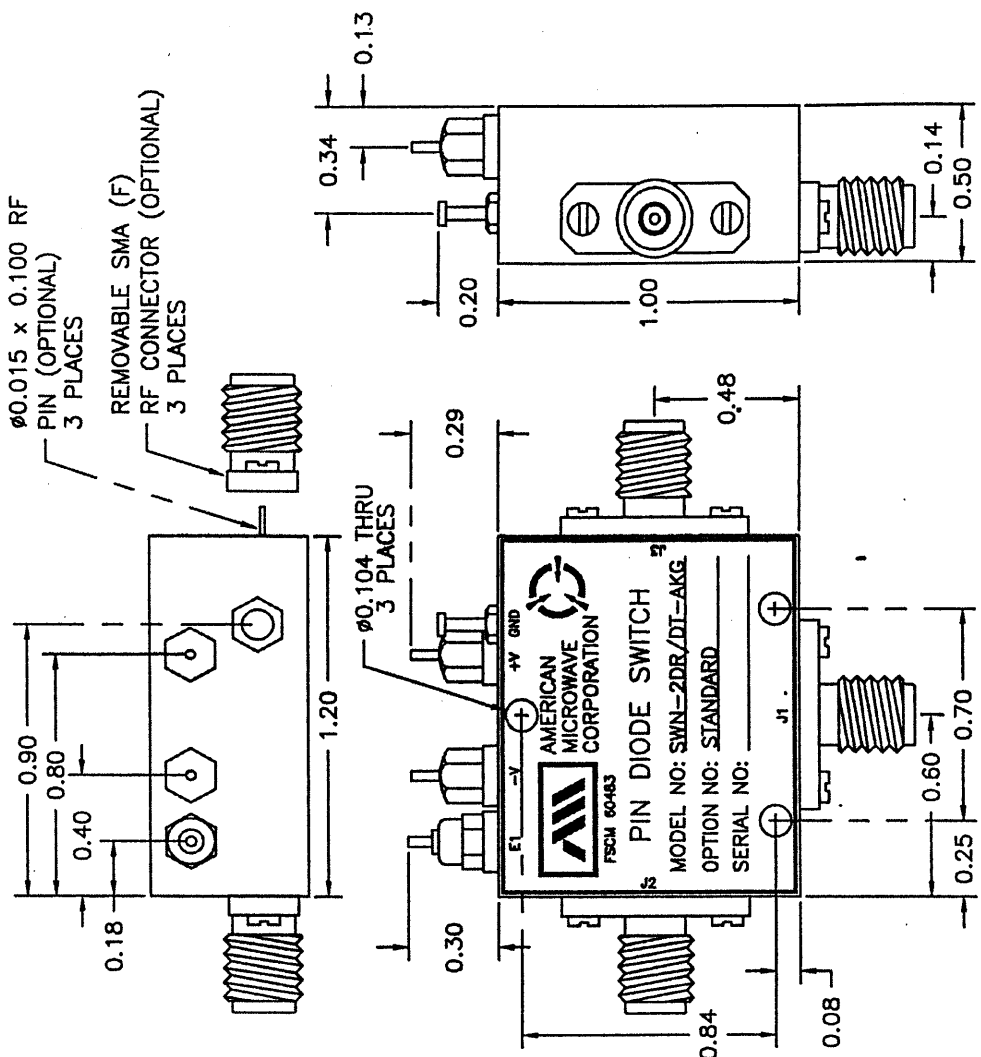
- SINGLE CONTROL WITH SOLDER PIN STANDARD
- IND-SP: INDEPENDANT CONTROL WITH SOLDER PIN (LOGIC "0" = ON "1" = OFF)
- 10M18: 10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
- 100M18: 100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
- 118: 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 218: 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 412: 4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
- 618: 6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 1218: 12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 100M20: 100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 100 MHz AND 1.0db AT 20 GHz)
- 220: 2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- 1020: 10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- B01: -12V POWER SUPPLIES
- B02: -15V POWER SUPPLIES
- B03: REVERSE LOGIC "1"=ON "0"=OFF
- B04: DRIVERLESS, CURRENT CONTROLLED
- B05: HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
- B06: HIGH POWER - SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
- B07: CUSTOM DESIGNED PRODUCT - SPECIFY INITIALS OF CUSTOMER
- B08: LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
- B09: LOW INSERTION LOSS VERSION
- B10: HIGHER ISOLATION VERSION

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: -55°C TO +85°C (OPERATING)
- -65°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

NOTED THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

REVISIONS	DATE	APPROVED
DESCRIPTION	7/27/99	
ORIGINAL RELEASE		



NOTE:  
DR=WITH DRIVER, REFLECTIVE  
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND	
APPROVALS	DATE	TITLE	
DRAWN: WJP, BRD CHECKED: WJP ISSUED: BA	7/27/99	OUTLINE DRAWING SWN-2DR/DT-AKG-STANDARD SOLID STATE SWITCH	
SIZE	FSCM NO.	DWG NO.	REV.
A	60483	100-4790-1	
SCALE N/S		SHEET 1 of 2	

ALL DIMENSIONS ARE IN INCHES

TOLERANCES:  
X.XX ±0.020  
X.XXX ±0.010

**DESCRIPTION:**  
 AMC MODEL SWN-2DR/DT-AKG-IND-SP IS A SINGLE POLE TWO THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH VERY HIGH ISOLATION, LOW LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

**SPECIFICATIONS:**

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 4.0dB  
 ABSORPTIVE: 4.5dB
- ISOLATION: 0.5 GHz TO 6 GHz: 110dB  
 6 GHz TO 18 GHz: 100dB
- VSWR: REFLECTIVE IN/OUT: 2.0:1  
 ABSORPTIVE IN/OUT: 2.0:1  
 ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.  
 FALL: 10ns TYPICAL, 15ns MAX.  
 DELAY ON: 75ns TYPICAL, 100ns MAX.  
 DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0" = J1-J2 ON "1" = J1-J3 ON
- POWER SUPPLY: +5V @ 100 mA MAX.  
 -5V @ 75mA MAX.(REFLECTIVE)  
 100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.2" (L) x 1.00" (W) x 0.50" (H)
- WEIGHT: 1.2 oz.

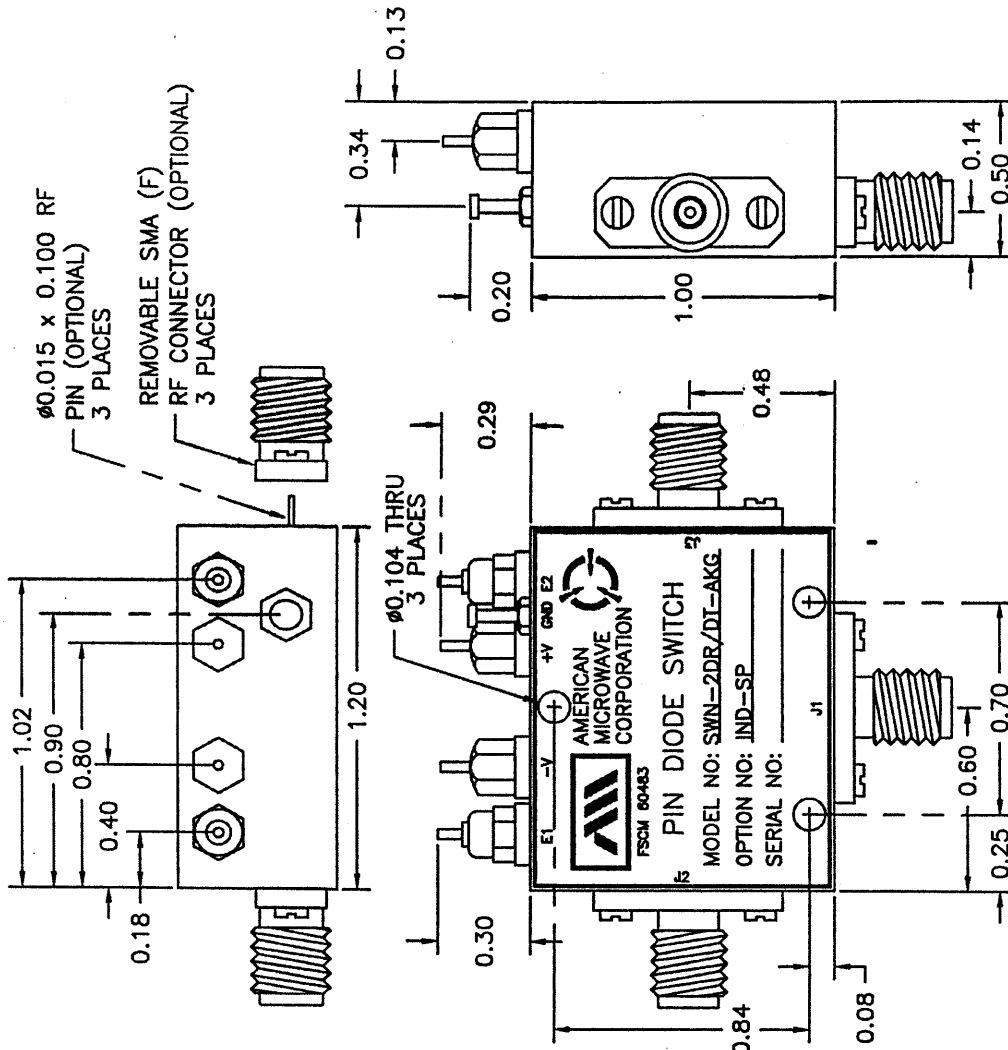
**OPTIONS:**

- SINGLE CONTROL WITH SOLDER PIN STANDARD**
- IND-SP: INDEPENDANT CONTROL WITH SOLDER PIN (LOGIC "0" = ON "1" = OFF)
  - 10M18: 10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
  - 100M18: 100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
  - 118: 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
  - 218: 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
  - 412: 4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
  - 618: 6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
  - 1218: 12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
  - 100M20: 100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
  - 220: 2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
  - 1020: 10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
  - B01: -12V POWER SUPPLIES
  - B02: -15V POWER SUPPLIES
  - B03: REVERSE LOGIC "1"=ON "0"=OFF
  - B04: DRIVERLESS, CURRENT CONTROLLED
  - B05: HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
  - B06: HIGH POWER - SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
  - B07: CUSTOM DESIGNED PRODUCT - SPECIFY INITIALS OF CUSTOMER
  - B08: LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
  - B09: LOW INSERTION LOSS VERSION
  - B10: HIGHER ISOLATION VERSION

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: -55°C TO +85°C (OPERATING)  
 -65°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<sub>1</sub>

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION



NOTE:

DR=WITH DRIVER, REFLECTIVE  
 DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

APPROVALS		DATE	TITLE
DESIGN	WSP, RPL	7/27/99	AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
CHECKED	WSP	7/27/99	OUTLINE DRAWING
ISSUED	PL	7/27/99	SWN-2DR/DT-AKG-IND-SP SOLID STATE SWITCH
SIZE	FSCM NO. A	DWG NO. 100-4790-2	REV.
SCALE	N/S		



**DESCRIPTION:**

AMC MODEL SWN-218-2DR/DT-SIS IS A SINGLE SUPPLY, SINGLE POLE TWO THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

**SPECIFICATIONS:**

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.5db  
ABSORPTIVE: 3.0db
- ISOLATION: 0.5 GHz TO 2 GHz: 55db  
2 GHz TO 12 GHz: 45db  
12 GHz TO 18 GHz: 25db
- VSWR: REFLECTIVE IN/OUT: 2.0:1  
ABSORPTIVE IN/OUT: 2.0:1  
ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 15ns TYPICAL, 20ns MAX.  
FALL: 15ns TYPICAL, 20ns MAX.  
DELAY ON: 75ns TYPICAL, 100ns MAX.  
DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"= J1-J2 ON "1"= J1-J3 ON
- POWER SUPPLY: +5V @ 100 mA MAX.
- CONNECTORS: SMA FEMALE  
CONTROL SOLDER PIN  
SIZE: (L) 1.2" X (W) 1.0" X (H) 0.5"  
WEIGHT: 1.5 OUNCE TYPICAL

**OPTIONS:**

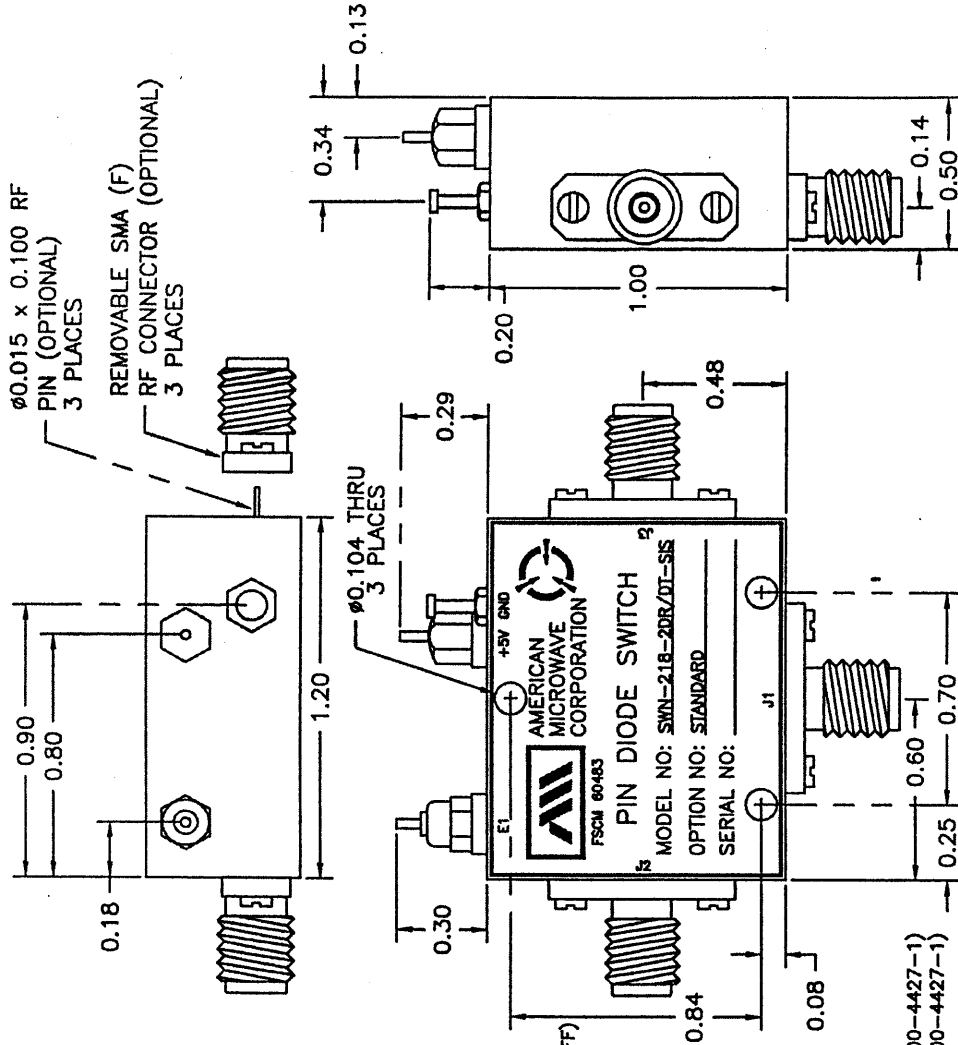
- SINGLE CONTROL WITH SOLDER PIN STANDARD
- IND-SP INDEPENDANT CONTROL WITH SOLDER PIN (LOGIC "0" = ON "1" = OFF)
- 10M18 10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
- 100M18 100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
- 118 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 218 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 412 4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
- 618 6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 1218 12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 100M20 100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
- 220 2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- 1020 10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- B01 -12V POWER SUPPLIES (NOT AVAILABLE WITH SINGLE SUPPLY, SEE 100-4427-1)
- B02 -15V POWER SUPPLIES (NOT AVAILABLE WITH SINGLE SUPPLY, SEE 100-4427-1)
- B03 REVERSE LOGIC "1"=ON "0"=OFF
- B04 DRIVERLESS, CURRENT CONTROLLED (NOT AVAILABLE WITH SINGLE SUPPLY, SEE 100-4427-1)
- B05 HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
- B06 HIGH POWER - SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
- B07 CUSTOM DESIGNED PRODUCT- SPECIFY INITIALS OF CUSTOMER
- B08 LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
- B09 LOW INSERTION LOSS VERSION
- B10 HIGHER ISOLATION VERSION

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: -55C TO +85C (OPERATING)  
-65C TO +125C (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

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE	7/12/99	



APPROVALS	DATE	TITLE
DRAWN: <i>[Signature]</i>	7/12/99	AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
CHECKED: <i>[Signature]</i>	7/19/99	OUTLINE DRAWING
ISSUED: <i>[Signature]</i>	7/19/99	SWN-218-2DR/DT-SIS - STANDARD REFLECTIVE OR NON-REFLECTIVE (ABSORPTIVE) SOLID STATE SWITCH

SIZE	FSCM NO.	DWG NO.	SHEET
A	60483	100-4427-5	1 of 2

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

**DESCRIPTION:**  
 AMC MODEL SWN-218-2DR/DT-SIS IS A SINGLE SUPPLY, SINGLE POLE TWO THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

**SPECIFICATIONS:**

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.5db  
ABSORPTIVE: 3.0db
- ISOLATION: 0.5 GHz TO 2 GHz: 55db  
2 GHz TO 12 GHz: 45db  
12 GHz TO 18 GHz: 25db
- VSWR: REFLECTIVE IN/OUT: 2.0:1  
ABSORPTIVE IN/OUT: 2.0:1  
ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 15ns TYPICAL, 20ns MAX.  
FALL: 15ns TYPICAL, 20ns MAX.  
DELAY ON: 75ns TYPICAL, 100ns MAX.  
DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"= J1-J2 ON "1"= J1-J3 ON
- POWER SUPPLY: +5V 100 mA MAX.
- CONNECTORS: SMA FEMALE  
CONTROL: SOLDER PIN  
RF: SOLDER PIN
- SIZE: (L) 1.2" X (W) 1.0" X (H) 0.5"
- WEIGHT: 1.5 OUNCE TYPICAL

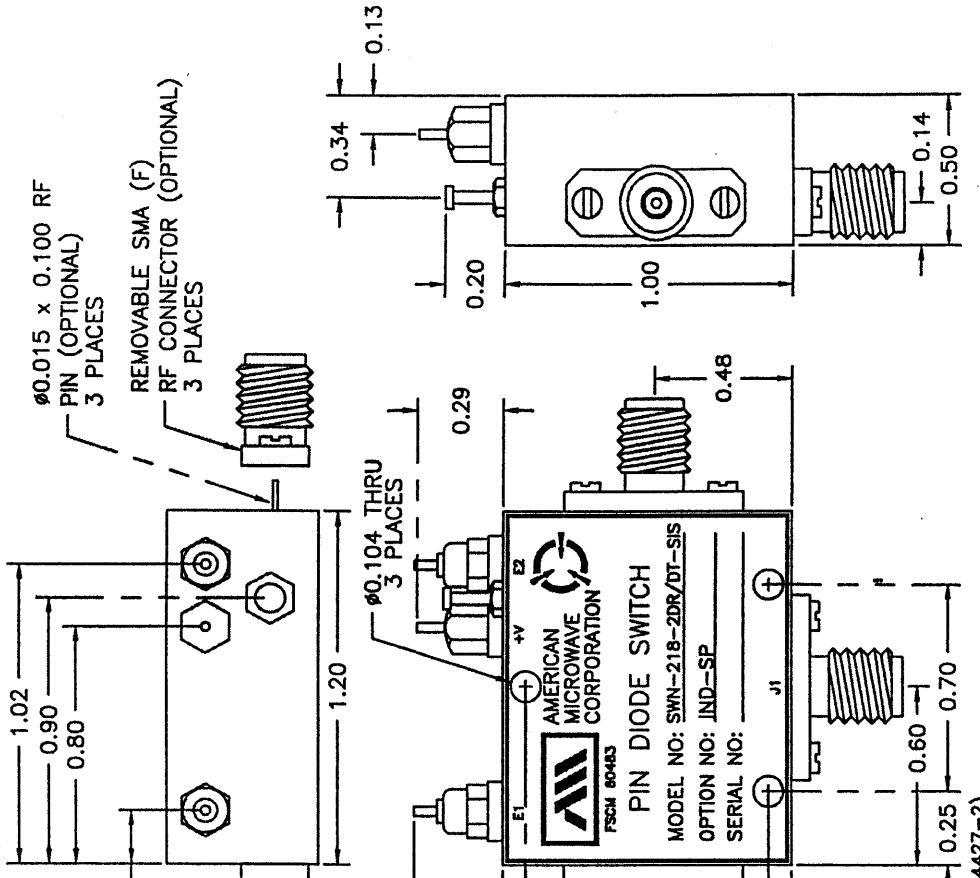
**OPTIONS:**

- SINGLE CONTROL WITH SOLDER PIN STANDARD
- IND-SP INDEPENDANT CONTROL WITH SOLDER PIN (LOGIC "0" = ON "1" = OFF)
- 10M18 10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
- 100M18 100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
- 118 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 218 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 412 4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
- 618 6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 1218 12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 100M20 100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
- 220 2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- 1020 10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- B01 -12V POWER SUPPLIES (NOT AVAILABLE WITH SINGLE SUPPLY, SEE 100-4427-2)
- B02 -15V POWER SUPPLIES (NOT AVAILABLE WITH SINGLE SUPPLY, SEE 100-4427-2)
- B03 REVERSE LOGIC "1"=ON "0"=OFF
- B04 DRIVERLESS, CURRENT CONTROLLED (NOT AVAILABLE WITH SINGLE SUPPLY, SEE 100-4427-2)
- B05 HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
- B06 HIGH POWER - SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
- B07 CUSTOM DESIGNED PRODUCT- SPECIFY INITIALS OF CUSTOMER
- B08 LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
- B09 LOW INSERTION LOSS VERSION
- B10 HIGHER ISOLATION VERSION

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: -55°C TO +85°C (OPERATING)  
-65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 1038 COND. B
- SHOCK: MIL-STD-202F, METHOD 2138 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

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION



APPROVALS	DATE	TITLE
DRWN: R.R.A.	7/12/99	AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
CHECKED: W.P.	7/19/99	OUTLINE DRAWING
ISSUED: J.A.	7/17/99	SWN-218-2DR/DT-SIS-IND-SP REFLECTIVE OR NON-REFLECTIVE (ABSORPTIVE) SOLID STATE SWITCH

SIZE: A	FORM NO. 60483	DWG NO. 100-4427-6	REV.
SCALE: N/S			SHEET 1 of 2



**AMERICAN MICROWAVE  
CORPORATION**

**TEST DATA**

**FROM**

**1 GHz TO 5 GHz**

**LOW INSERTION LOSS**

**SINGLE POWER SUPPLY**

**FAIL SAFE**

**REFLECTIVE**

**SP2T**

**SOLID STATE SWITCH**

**AMC MODEL No:  
SWN-218-2DR-SS-FS**  
(Serial Number: 2MS010361)

**PREPARED  
BY  
KATIE BAISEY**

**TESTED  
BY  
RENE AFABLE**

**NOVEMBER 21, 2000**

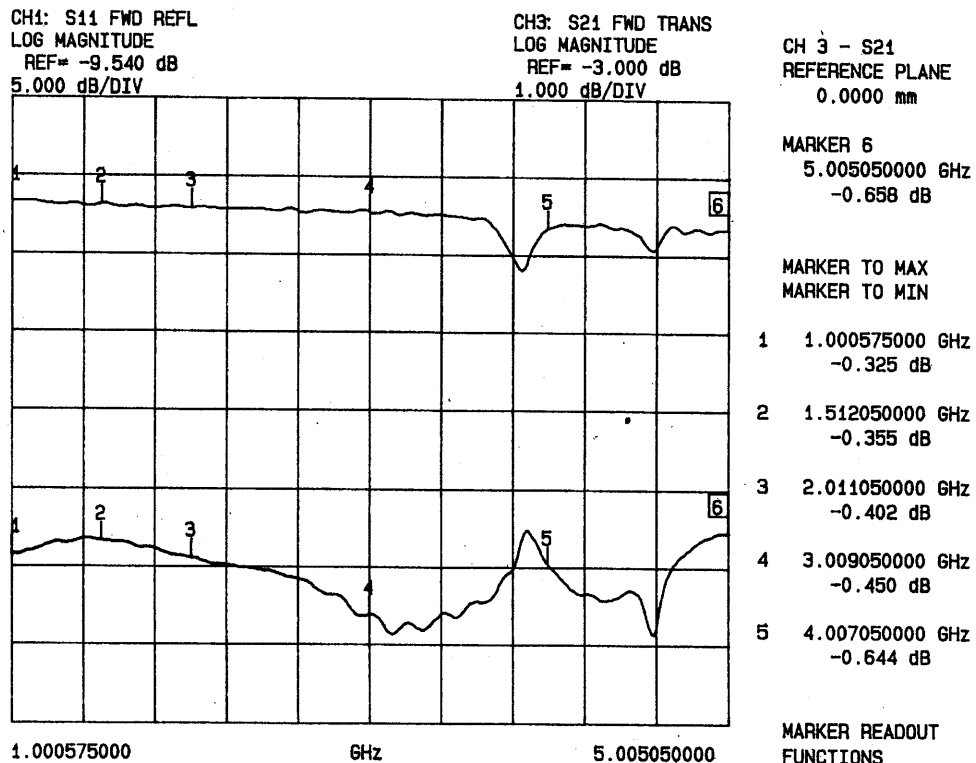


## SUMMARY TEST DATA

<b>MODEL NUMBER</b>	<b>: SWN-218-2DR-SS-FS</b>
<b>SERIAL NUMBER</b>	<b>: 2MS010361</b>
<b>ENGINEER</b>	<b>: RENE AFABLE</b>
<b>VOLTAGE &amp; CURRENT DRAW</b>	<b>: +5vdc @ 62.5mA</b>

### INSERTION LOSS & RETURN LOSS\*

J1-J2



\*J1: INPUT ARM  
\* FAIL SAFE ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	0.32 dB	18.71 dB
1.5 GHz	0.35 dB	17.83 dB
2.0 GHz	0.40 dB	18.95 dB
3.0 GHz	0.45 dB	22.55 dB
4.0 GHz	0.64 dB	19.38 dB
5.0 GHz	0.65 dB	17.24 dB

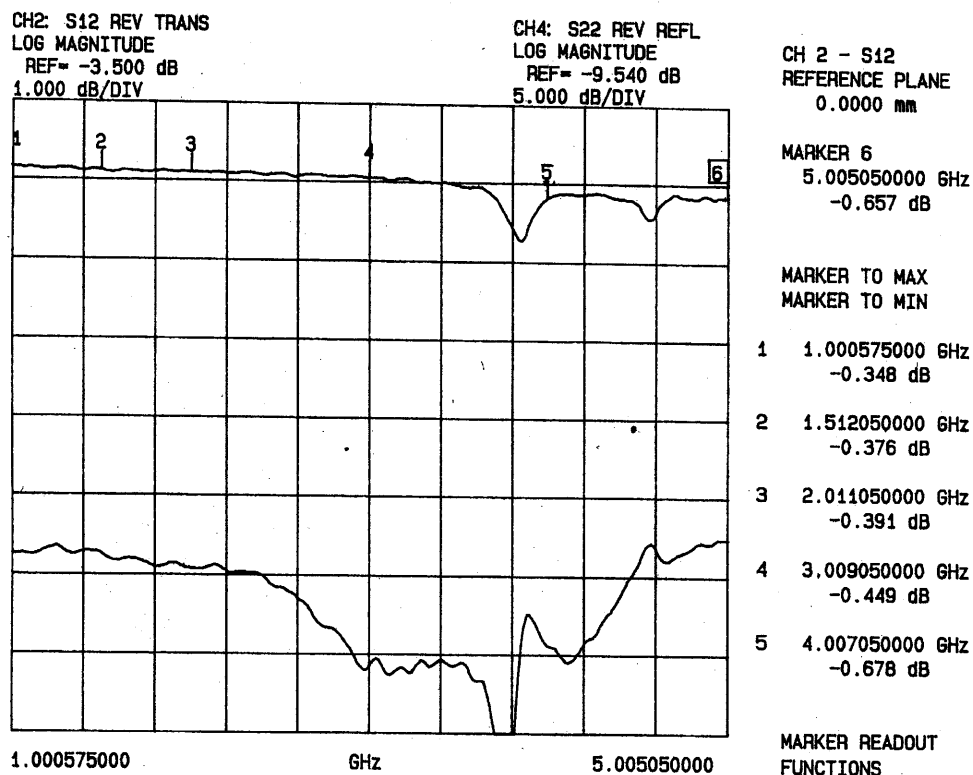


### SUMMARY TEST DATA

<b>MODEL NUMBER</b>	<b>: SWN-218-2DR-SS-FS</b>
<b>SERIAL NUMBER</b>	<b>: 2MS010361</b>
<b>ENGINEER</b>	<b>: RENE AFABLE</b>
<b>VOLTAGE &amp; CURRENT DRAW</b>	<b>: +5vdc @ 62.5mA</b>

### INSERTION LOSS & RETURN LOSS\*

J2-J1



\*J2: INPUT ARM  
\* FAIL SAFE ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	0.34 dB	18.24 dB
1.5 GHz	0.37 dB	18.24 dB
2.0 GHz	0.39 dB	19.15 dB
3.0 GHz	0.44 dB	25.30 dB
4.0 GHz	0.67 dB	23.95 dB
5.0 GHz	0.65 dB	17.09 dB

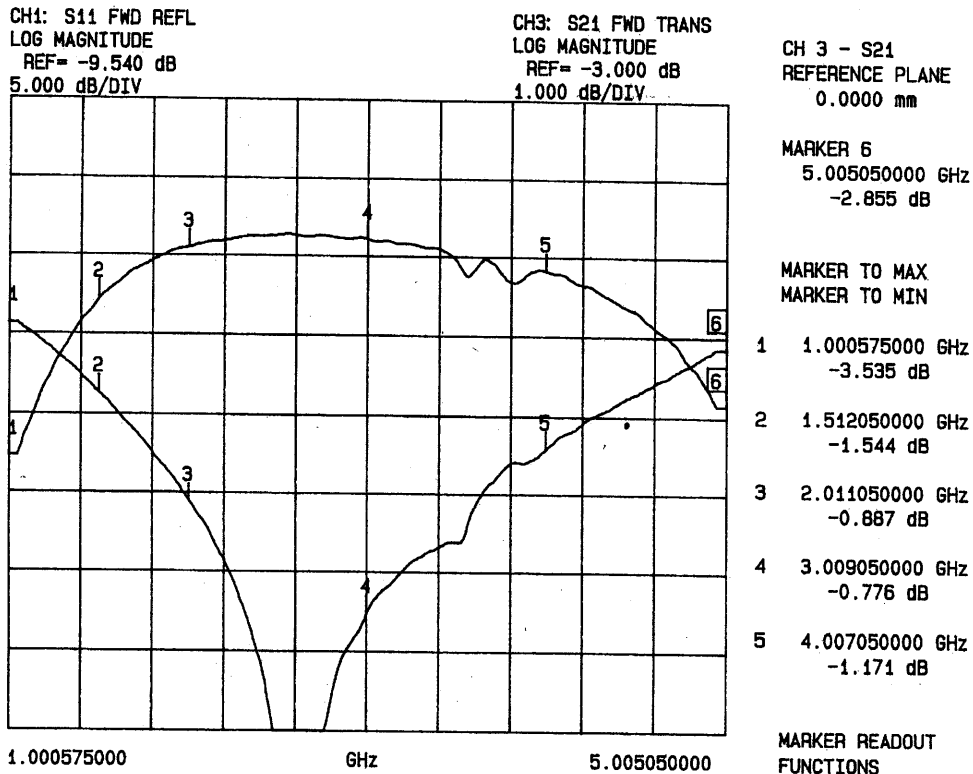


### SUMMARY TEST DATA

MODEL NUMBER  
 SERIAL NUMBER  
 ENGINEER  
 VOLTAGE & CURRENT DRAW

: SWN-218-2DR-SS-FS  
 : 2MS010361  
 : RENE AFABLE  
 : +5vdc @ 62.5mA

#### INSERTION LOSS & RETURN LOSS\* J1-J3



\*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	3.53 dB	3.84 dB
1.5 GHz	1.54 dB	8.25 dB
2.0 GHz	0.88 dB	15.11 dB
3.0 GHz	0.77 dB	22.12 dB
4.0 GHz	1.17 dB	11.57 dB
5.0 GHz	2.85 dB	5.19 dB

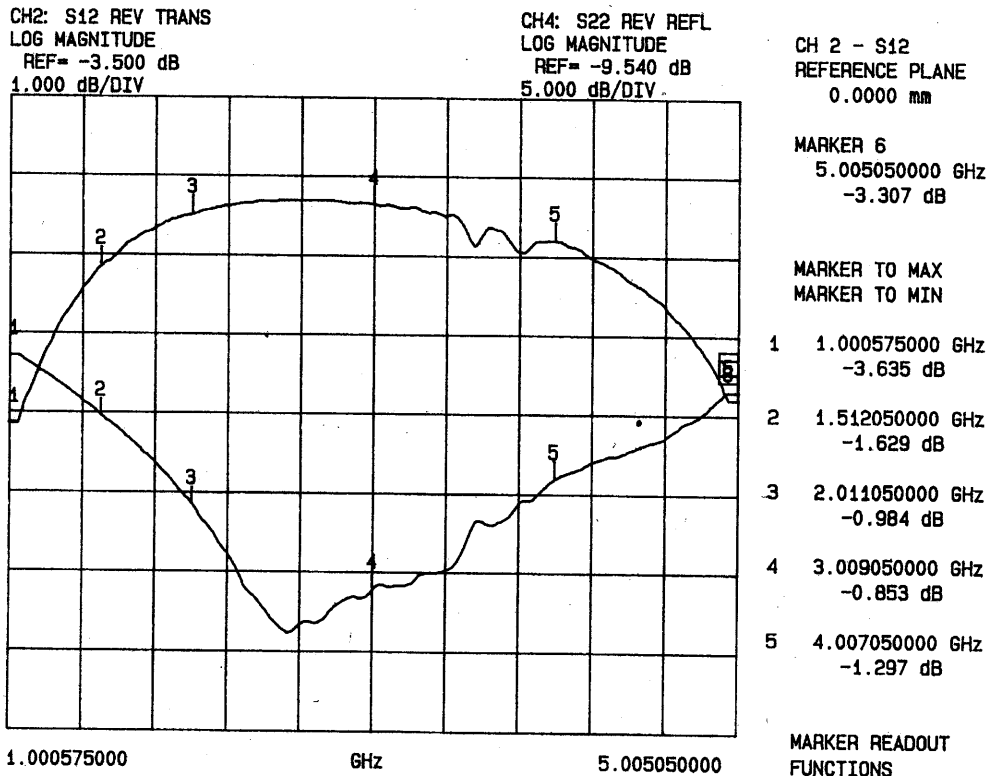


### SUMMARY TEST DATA

MODEL NUMBER  
 SERIAL NUMBER  
 ENGINEER  
 VOLTAGE & CURRENT DRAW

: SWN-218-2DR-SS-FS  
 : 2MS010361  
 : RENE AFABLE  
 : +5vdc @ 62.5mA

### INSERTION LOSS & RETURN LOSS\* J3-J1



\*J3: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	3.63 dB	5.93 dB
1.5 GHz	1.62 dB	9.76 dB
2.0 GHz	0.98 dB	15.33 dB
3.0 GHz	0.85 dB	20.60 dB
4.0 GHz	1.29 dB	13.58 dB
5.0 GHz	3.30 dB	7.98 dB



**TEST DATA**

**FROM**

**2.2 GHz TO 2.4 GHz**

**LOW INSERTION LOSS**

**SINGLE POWER SUPPLY**

**FAIL SAFE**

**REFLECTIVE**

**SP2T**

**SOLID STATE SWITCH**

**AMC MODEL No:  
SWN-218-2DR-SS-FS  
(Serial Number: 2MS010361)**

**PREPARED  
BY  
KATIE BAISEY**

**TESTED  
BY  
RENE AFABLE**

**NOVEMBER 21, 2000**



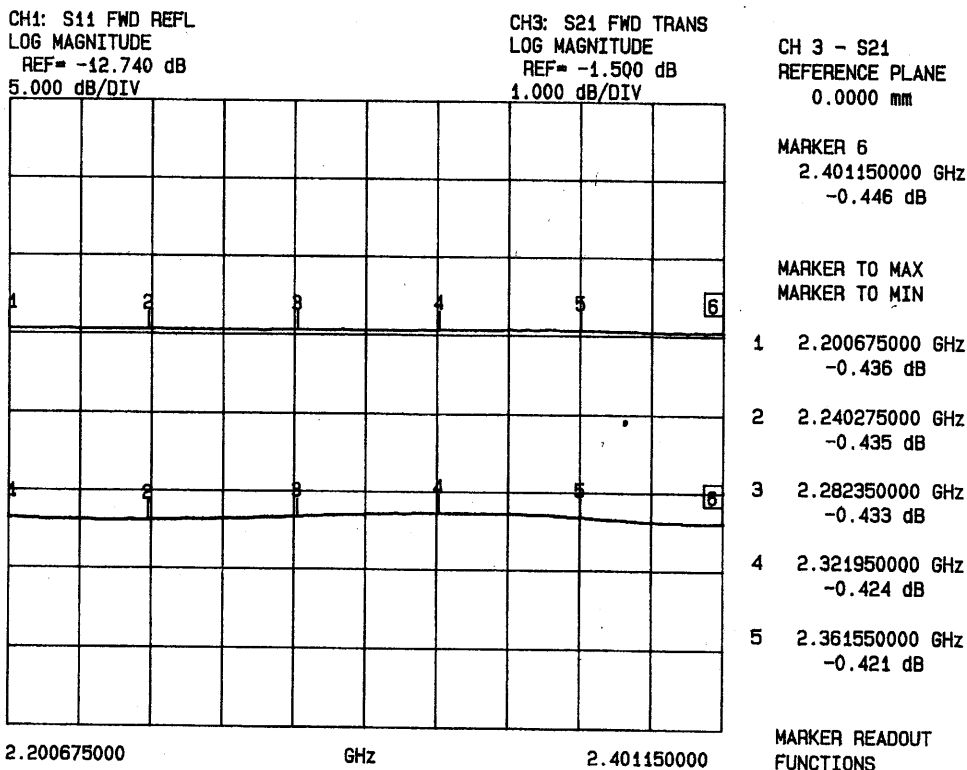


### SUMMARY TEST DATA

<b>MODEL NUMBER</b>	<b>: SWN-218-2DR-SS-FS</b>
<b>SERIAL NUMBER</b>	<b>: 2MS010361</b>
<b>ENGINEER</b>	<b>: RENE AFABLE</b>
<b>VOLTAGE &amp; CURRENT DRAW</b>	<b>: + 5vdc @ 62.5mA</b>

#### INSERTION LOSS & RETURN LOSS\*

J1-J2



\*J1: INPUT ARM  
\* FAIL SAFE ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
2.20 GHz	0.43 dB	19.52 dB
2.24 GHz	0.44 dB	19.63 dB
2.28 GHz	0.43 dB	19.36 dB
2.32 GHz	0.42 dB	19.10 dB
2.36 GHz	0.42 dB	19.34 dB
2.40 GHz	0.45 dB	19.67 dB

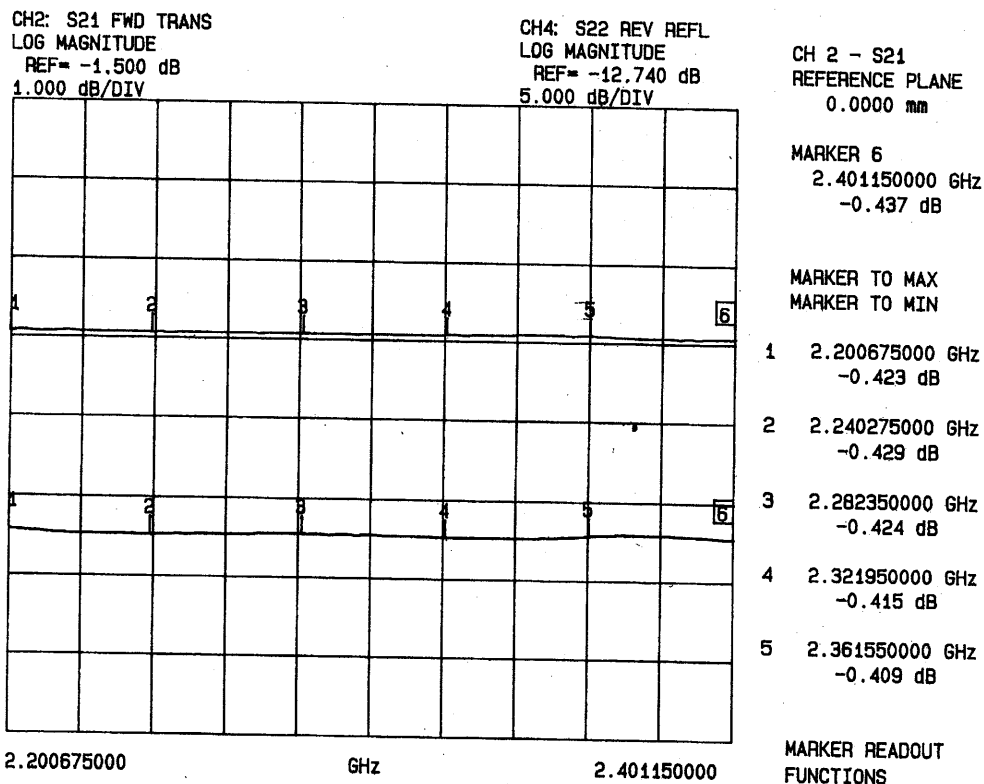


### SUMMARY TEST DATA

<b>MODEL NUMBER</b>	<b>: SWN-218-2DR-SS-FS</b>
<b>SERIAL NUMBER</b>	<b>: 2MS010361</b>
<b>ENGINEER</b>	<b>: RENE AFABLE</b>
<b>VOLTAGE &amp; CURRENT DRAW</b>	<b>: +5vdc @ 62.5mA</b>

#### INSERTION LOSS & RETURN LOSS\*

J2-J1



\*J2: INPUT ARM  
\* FAIL SAFE ARM

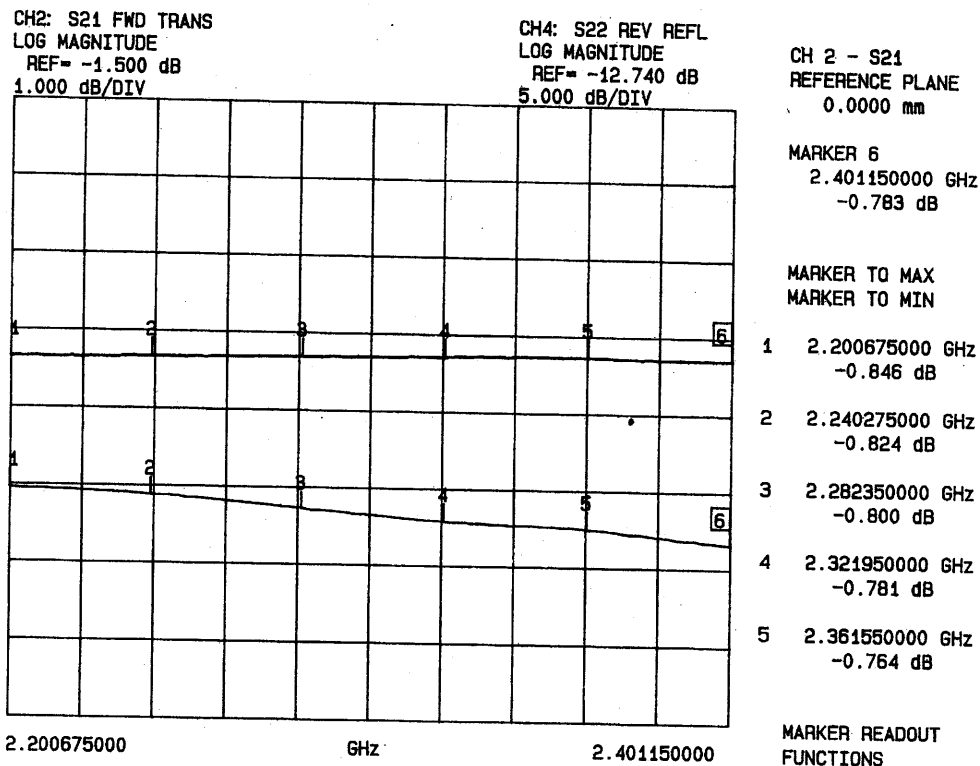
FREQUENCY	INSERTION LOSS	RETURN LOSS
2.20 GHz	0.42 dB	19.85 dB
2.24 GHz	0.43 dB	20.14 dB
2.28 GHz	0.42 dB	20.01 dB
2.32 GHz	0.41 dB	20.11 dB
2.36 GHz	0.40 dB	19.92 dB
2.40 GHz	0.43 dB	20.02 dB



### SUMMARY TEST DATA

<b>MODEL NUMBER</b>	<b>: SWN-218-2DR-SS-FS</b>
<b>SERIAL NUMBER</b>	<b>: 2MS010361</b>
<b>ENGINEER</b>	<b>: RENE AFABLE</b>
<b>VOLTAGE &amp; CURRENT DRAW</b>	<b>: +5vdc @ 62.5mA</b>

#### INSERTION LOSS & RETURN LOSS\* J1-J3



\*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
2.20 GHz	0.84 dB	18.70 dB
2.24 GHz	0.82 dB	19.30 dB
2.28 GHz	0.80 dB	20.65 dB
2.32 GHz	0.78 dB	22.30 dB
2.36 GHz	0.76 dB	23.63 dB
2.40 GHz	0.78 dB	24.37 dB

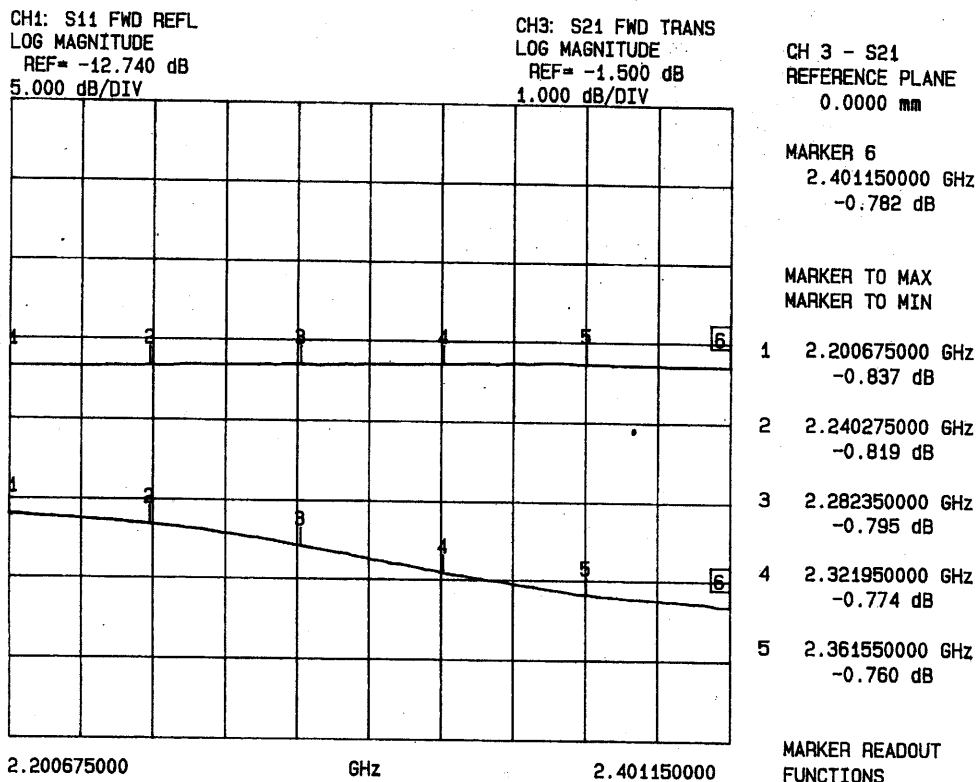


### SUMMARY TEST DATA

<b>MODEL NUMBER</b>	<b>: SWN-218-2DR-SS-FS</b>
<b>SERIAL NUMBER</b>	<b>: 2MS010361</b>
<b>ENGINEER</b>	<b>: RENE AFABLE</b>
<b>VOLTAGE &amp; CURRENT DRAW</b>	<b>: +5vdc @ 62.5mA</b>

#### INSERTION LOSS & RETURN LOSS\*

J3-J1



\*J3: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
2.20 GHz	0.83 dB	17.97 dB
2.24 GHz	0.81 dB	18.34 dB
2.28 GHz	0.79 dB	19.13 dB
2.32 GHz	0.77 dB	19.86 dB
2.36 GHz	0.76 dB	20.24 dB
2.40 GHz	0.78 dB	21.14 dB



**TEST DATA**  
**ON THE**  
**FAIL SAFE ARM**  
**FROM**  
**40 MHz TO 18 GHz**  
**LOW INSERTION LOSS**  
**SINGLE POWER SUPPLY**  
**FAIL SAFE**  
**REFLECTIVE**  
**SP2T**  
**SOLID STATE SWITCH**

**AMC MODEL No:**  
**SWN-218-2DR-SS-FS**  
(Serial Number: 2MS010361)

**PREPARED**  
**BY**  
**KATIE BAISEY**

**TESTED**  
**BY**  
**RENE AFABLE**

**NOVEMBER 21, 2000**

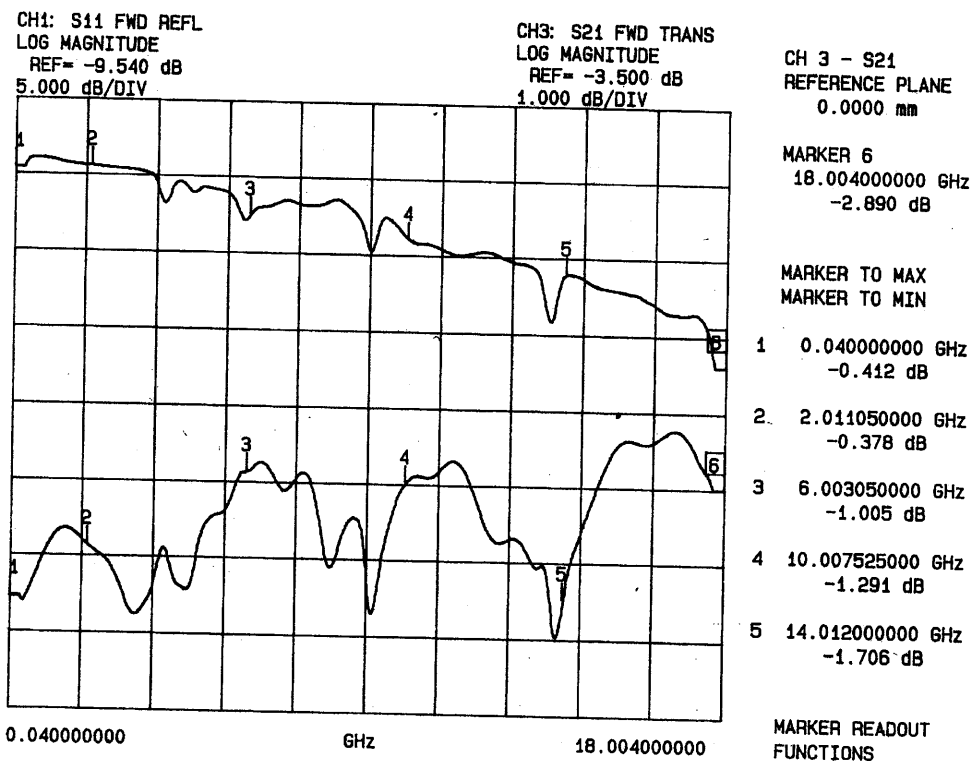


### SUMMARY TEST DATA

<b>MODEL NUMBER</b>	<b>: SWN-218-2DR-SS-FS</b>
<b>SERIAL NUMBER</b>	<b>: 2MS010361</b>
<b>ENGINEER</b>	<b>: RENE AFABLE</b>
<b>VOLTAGE &amp; CURRENT DRAW</b>	<b>: +5vdc @ 62.5mA</b>

### INSERTION LOSS & RETURN LOSS\*

J1-J2



\*J1: INPUT ARM  
\* FAIL SAFE ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	0.41 dB	22.19 dB
2.0 GHz	0.37 dB	18.84 dB
6.0 GHz	1.00 dB	13.82 dB
10.0 GHz	1.29 dB	14.42 dB
14.0 GHz	1.70 dB	21.90 dB
18.0 GHz	2.89 dB	14.51 dB



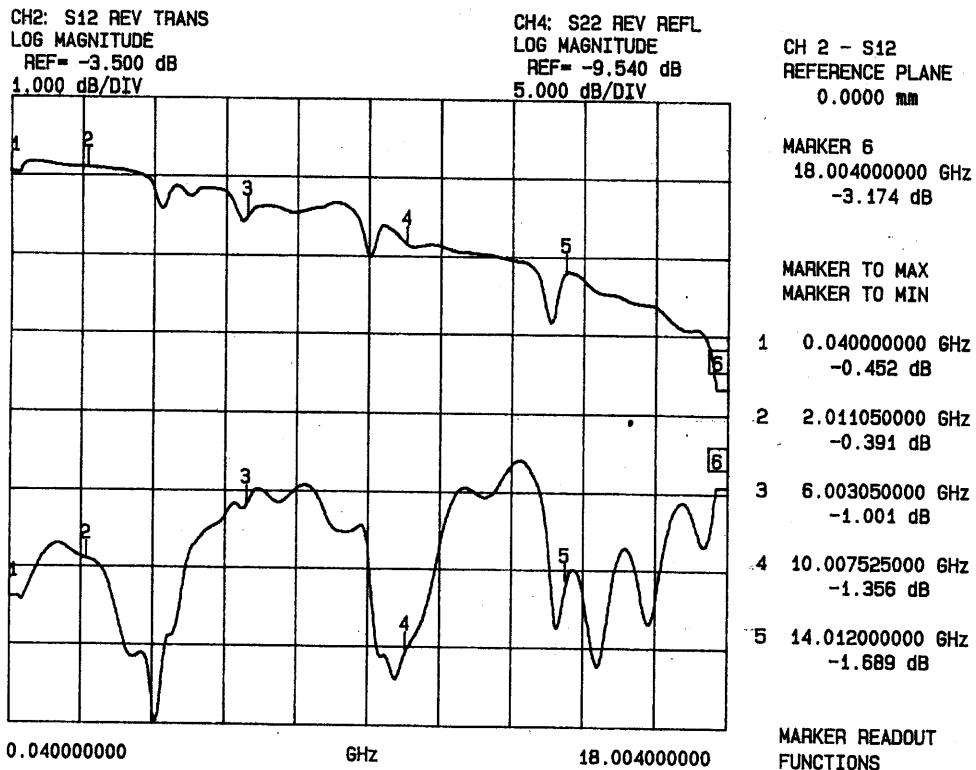
### SUMMARY TEST DATA

MODEL NUMBER  
 SERIAL NUMBER  
 ENGINEER  
 VOLTAGE & CURRENT DRAW

: SWN-218-2DR-SS-FS  
 : 2MS010361  
 : RENE AFABLE  
 : + 5vdc @ 62.5mA

#### INSERTION LOSS & RETURN LOSS\*

J2-J1



\*J2: INPUT ARM  
 \* FAIL SAFE ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	0.45 dB	21.49 dB
2.0 GHz	0.39 dB	19.01 dB
6.0 GHz	1.00 dB	15.34 dB
10.0 GHz	1.35 dB	24.75 dB
14.0 GHz	1.68 dB	20.32 dB
18.0 GHz	3.17 dB	14.10 dB



## SUMMARY TEST DATA

MODEL NUMBER	: SWN-218-2DR-SS-FS
SERIAL NUMBER	: 2MS010361
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 62.5mA

### SWITCHING SPEED

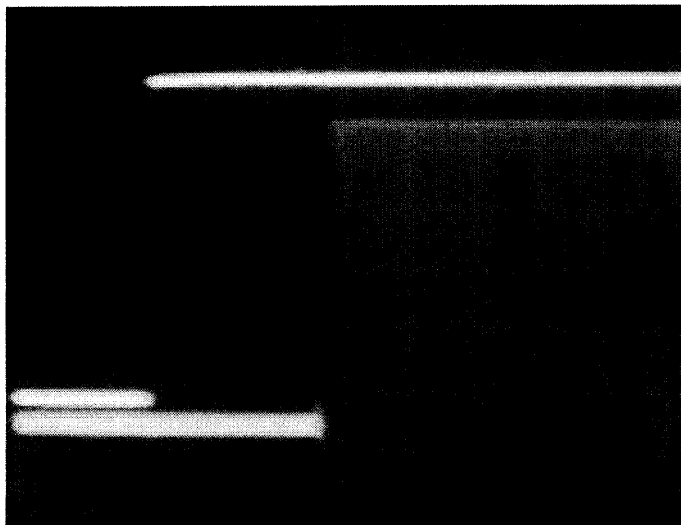
"Rise/Fall" Time: 10% RF to 90% RF & 90% RF to 10% RF  
 "On/Off" Time: 50% TTL to 90% RF or 10% RF

#### J1-J2 (FAIL SAFE ARM)

"DELAY ON": 1.4  $\mu$ S  
 "RISE TIME": 30 nS

HORIZONTAL SCALE:  
 500 nS PER DIVISION

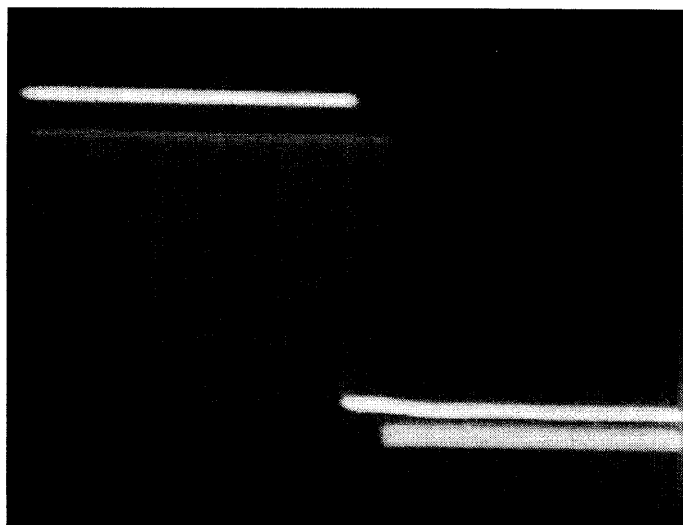
VERTICAL SCALE:  
 10 mV PER DIVISION



"DELAY OFF": 300 nS  
 "FALL TIME": 4 nS

HORIZONTAL SCALE:  
 500 nS PER DIVISION

VERTICAL SCALE:  
 10 mV PER DIVISION



NOVEMBER 21, 2000





## SUMMARY TEST DATA

MODEL NUMBER	: SWN-218-2DR-SS-FS
SERIAL NUMBER	: 2MS010361
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 62.5mA

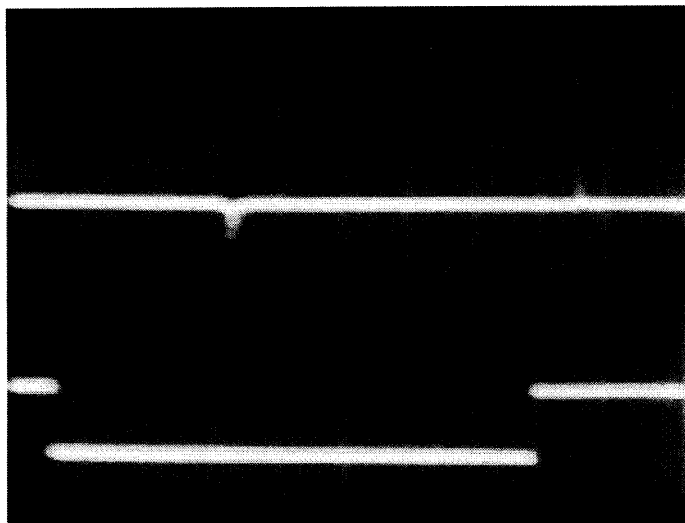
### VIDEO TRANSIENTS

J1-J2 (FAIL SAFE ARM)

≤510 mV P-P  
MEASURED IN A  
300 MHZ BANDWIDTH

VERTICAL SCALE:  
200 mV PER DIVISION

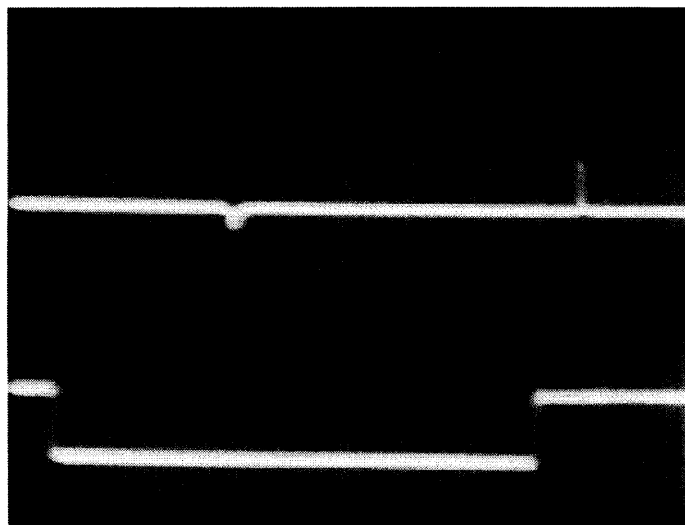
HORIZONTAL SCALE:  
500 nS PER DIVISION



≤210 mV P-P  
MEASURED IN A  
20 MHZ BANDWIDTH

VERTICAL SCALE:  
200 mV PER DIVISION

HORIZONTAL SCALE:  
500 nS PER DIVISION



NOVEMBER 21, 2000



## SUMMARY TEST DATA

MODEL NUMBER	: SWN-218-2DR-SS-FS
SERIAL NUMBER	: 2MS010361
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 62.5mA

### SWITCHING SPEED

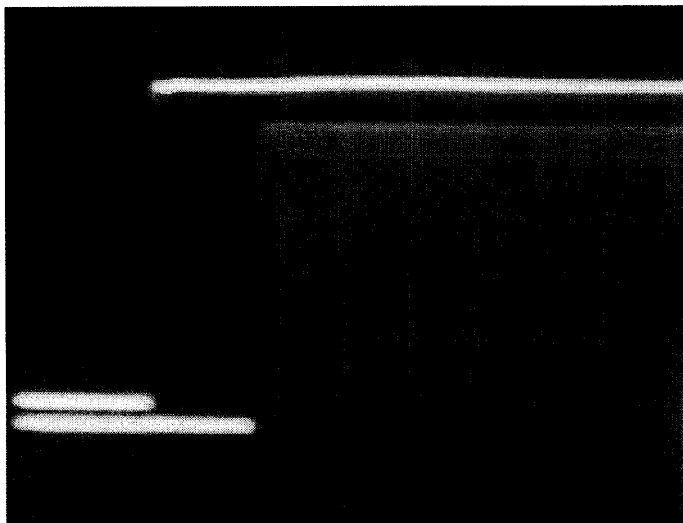
"Rise/Fall" Time: 10% RF to 90% RF & 90% RF to 10% RF  
 "On/Off" Time: 50% TTL to 90% RF or 10% RF

J1-J3

"DELAY ON": 320 nS  
 "RISE TIME": 4 nS

HORIZONTAL SCALE:  
 200 nS PER DIVISION

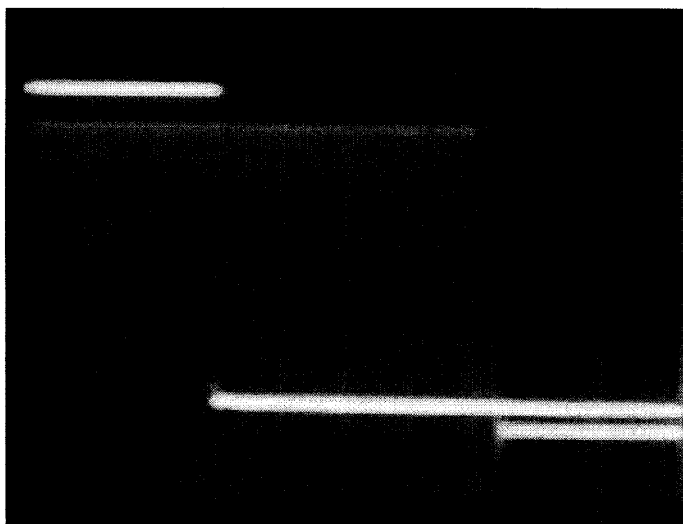
VERTICAL SCALE:  
 10 mV PER DIVISION



"DELAY OFF": 1.36 uS  
 "FALL TIME": 6 nS

HORIZONTAL SCALE:  
 200 nS PER DIVISION

VERTICAL SCALE:  
 10 mV PER DIVISION



NOVEMBER 21, 2000



## SUMMARY TEST DATA

MODEL NUMBER	: SWN-218-2DR-SS-FS
SERIAL NUMBER	: 2MS010361
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 62.5mA

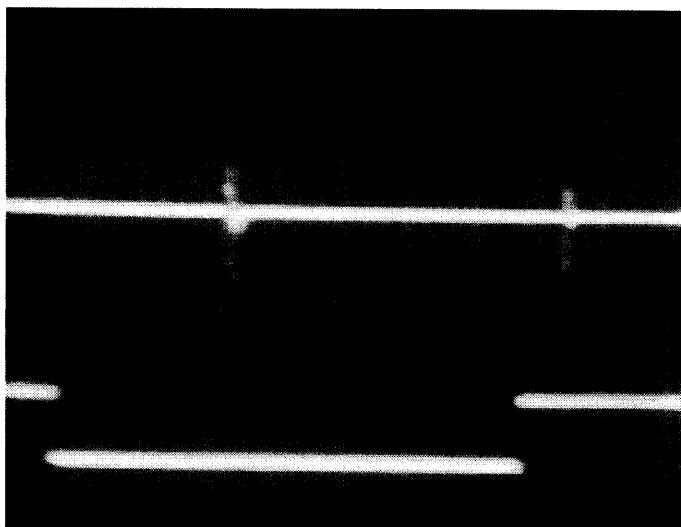
### VIDEO TRANSIENTS

J1-J3

≤910 mV P-P  
MEASURED IN A  
300 MHZ BANDWIDTH

VERTICAL SCALE:  
200 mV PER DIVISION

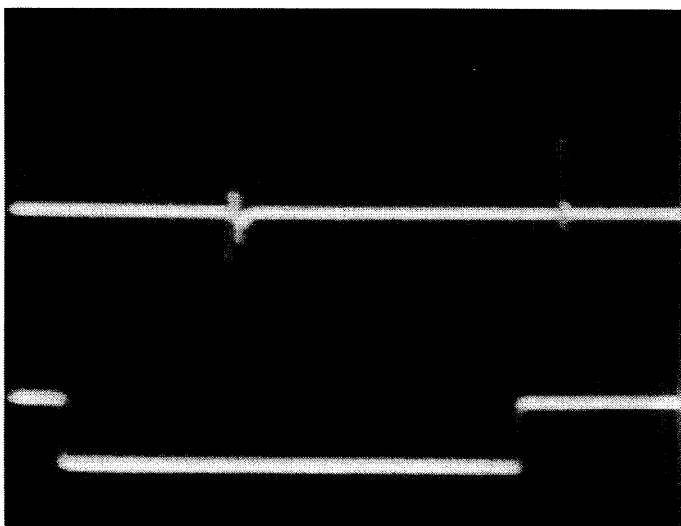
HORIZONTAL SCALE:  
500 nS PER DIVISION



≤400 mV P-P  
MEASURED IN A  
20 MHZ BANDWIDTH

VERTICAL SCALE:  
200 mV PER DIVISION

HORIZONTAL SCALE:  
500 nS PER DIVISION



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**APPENDIX A**  
**MISCELLANEOUS**  
**TEST DATA AND PLOTS**  
**ON**  
**ISOLATION**  
**AS**  
**MEASURED**  
**ON A VECTOR NETWORK ANALYZER**  
**ON A**  
**FAIL SAFE**  
**SP2T**  
**SOLID STATE SWITCH**  
**AMC MODEL No:**  
**SWN-218-2DR-SS-FS**  
**(Serial Number: 2MS010361)**  
**FROM**  
**1 GHz TO 5 GHz**  
**AND**  
**2.2 GHz TO 2.4 GHz**  
**NOVEMBER 21, 2000**

7311 G GROVE ROAD, FREDERICK, MARYLAND 21704 • Tel. (301) 662-4700 • Fax (301) 662-4938



**ISOLATION DATA  
AND PLOTS  
FROM  
1 GHz TO 5 GHz  
ON A  
LOW INSERTION LOSS  
SINGLE POWER SUPPLY  
FAIL SAFE  
REFLECTIVE  
SP2T  
SOLID STATE SWITCH**

**AMC MODEL No:  
SWN-218-2DR-SS-FS  
(Serial Number: 2MS010361)**

**PREPARED  
BY  
KATIE BAISEY**

**TESTED  
BY  
RENE AFABLE**

**NOVEMBER 21, 2000**

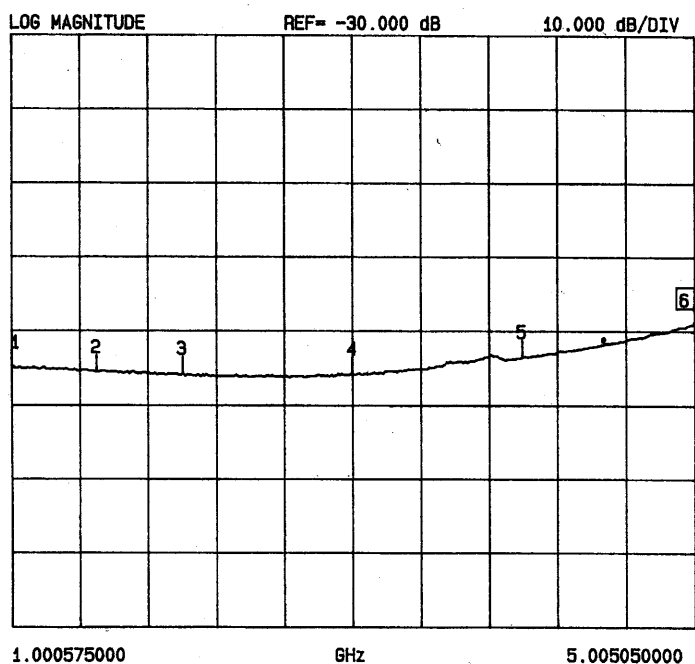


## SUMMARY TEST DATA

MODEL NUMBER	: SWN-218-2DR-SS-FS
SERIAL NUMBER	: 2MS010361
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: + 5vdc @ 62.5mA

### ISOLATION\* (AS MEASURED ON A VECTOR NETWORK ANALYZER) J1-J2

S21 FORWARD TRANSMISSION



CH 3 - S21  
REFERENCE PLANE  
0.0000 mm

MARKER 6  
5.005050000 GHz  
-29.003 dB

MARKER TO MAX  
MARKER TO MIN

- 1 1.000575000 GHz  
-34.946 dB
- 2 1.512050000 GHz  
-35.540 dB
- 3 2.011050000 GHz  
-35.855 dB
- 4 3.009050000 GHz  
-35.870 dB
- 5 4.007050000 GHz  
-33.534 dB

MARKER READOUT  
FUNCTIONS

\*J1: INPUT ARM

FREQUENCY	ISOLATION
1.0 GHz	34.94 dB
1.5 GHz	35.54 dB
2.0 GHz	35.85 dB
3.0 GHz	35.87 dB
4.0 GHz	33.53 dB
5.0 GHz	29.00 dB

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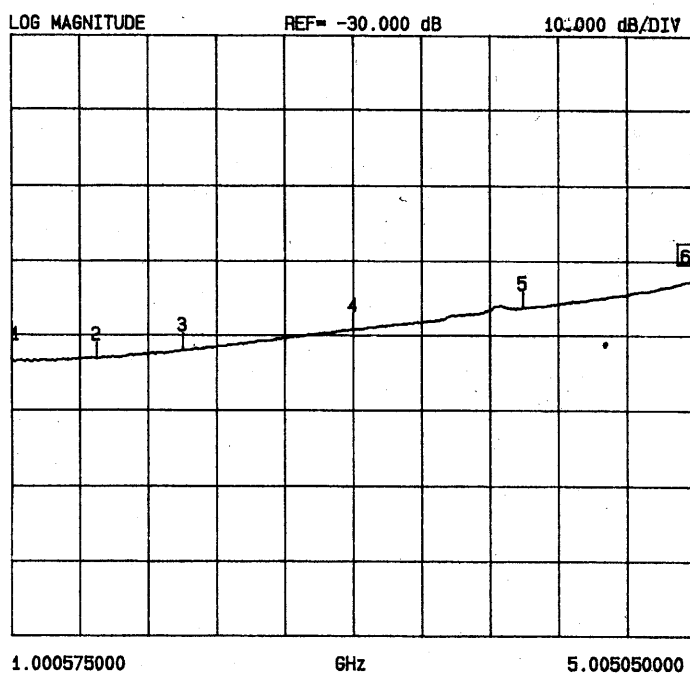


### SUMMARY TEST DATA

**MODEL NUMBER** : SWN-218-2DR-SS-FS  
**SERIAL NUMBER** : 2MS010361  
**ENGINEER** : RENE AFABLE  
**VOLTAGE & CURRENT DRAW** : +5vdc @ 62.5mA

**ISOLATION\***  
 (AS MEASURED ON A VECTOR NETWORK ANALYZER )  
**J1-J3**

S21 FORWARD TRANSMISSION



CH 3 - S21  
 REFERENCE PLANE  
 0.0000 mm

MARKER 6  
 5.005050000 GHz  
 -22.492 dB

MARKER TO MAX  
 MARKER TO MIN

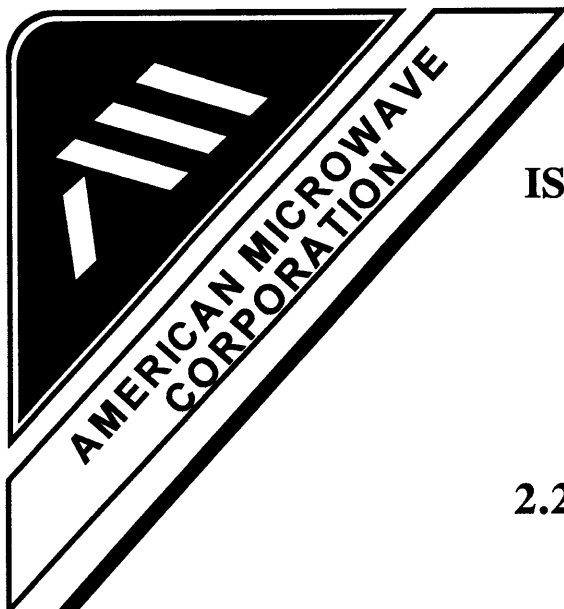
- 1 1.000575000 GHz  
-33.279 dB
- 2 1.512050000 GHz  
-33.184 dB
- 3 2.011050000 GHz  
-32.052 dB
- 4 3.009050000 GHz  
-29.191 dB
- 5 4.007050000 GHz  
-26.275 dB

MARKER READOUT FUNCTIONS

\*J1: INPUT ARM

FREQUENCY	ISOLATION
1.0 GHz	33.27 dB
1.5 GHz	33.18 dB
2.0 GHz	32.05 dB
3.0 GHz	29.19 dB
4.0 GHz	26.27 dB
5.0 GHz	22.49 dB

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**ISOLATION DATA  
AND PLOTS  
FROM  
2.2 GHz TO 2.4 GHz  
ON A  
LOW INSERTION LOSS  
SINGLE POWER SUPPLY  
FAIL SAFE  
REFLECTIVE  
SP2T  
SOLID STATE SWITCH**

**AMC MODEL No:  
SWN-218-2DR-SS-FS  
(Serial Number: 2MS010361)**

**PREPARED  
BY  
KATIE BAISEY**

**TESTED  
BY  
RENE AFABLE**

**NOVEMBER 21, 2000**

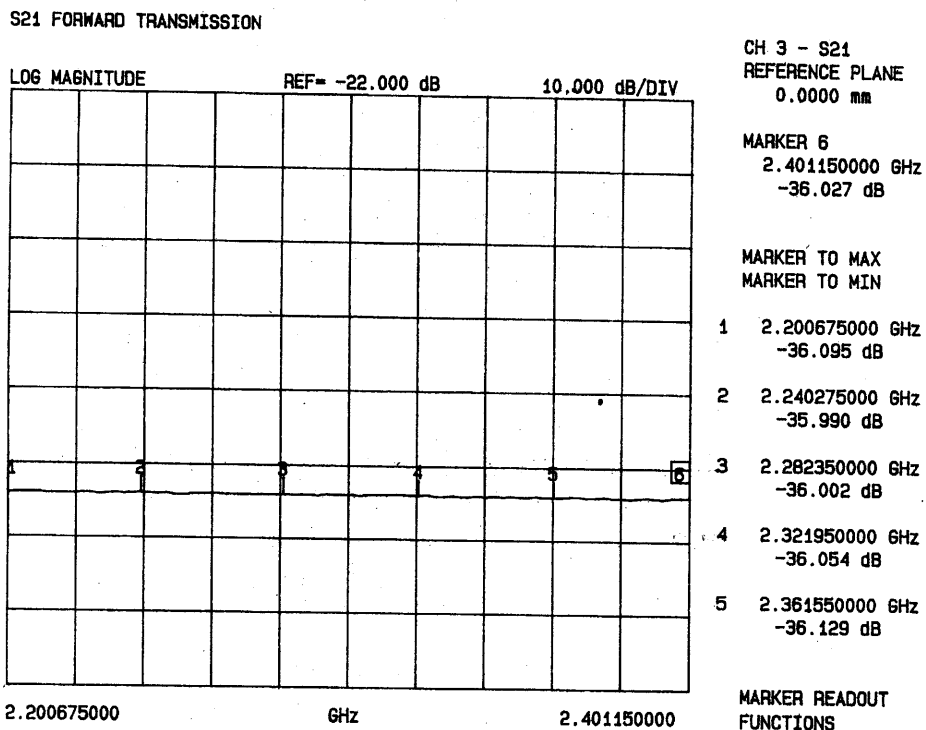




## SUMMARY TEST DATA

MODEL NUMBER	: SWN-218-2DR-SS-FS
SERIAL NUMBER	: 2MS010361
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 62.5mA

**ISOLATION\***  
(AS MEASURED ON A VECTOR NETWORK ANALYZER)  
J1-J2



\*J1: INPUT ARM  
\*FAIL SAFE ARM

FREQUENCY	ISOLATION
2.20 GHz	36.09 dB
2.24 GHz	35.99 dB
2.28 GHz	36.00 dB
2.32 GHz	36.05 dB
2.36 GHz	36.12 dB
2.40 GHz	36.02 dB

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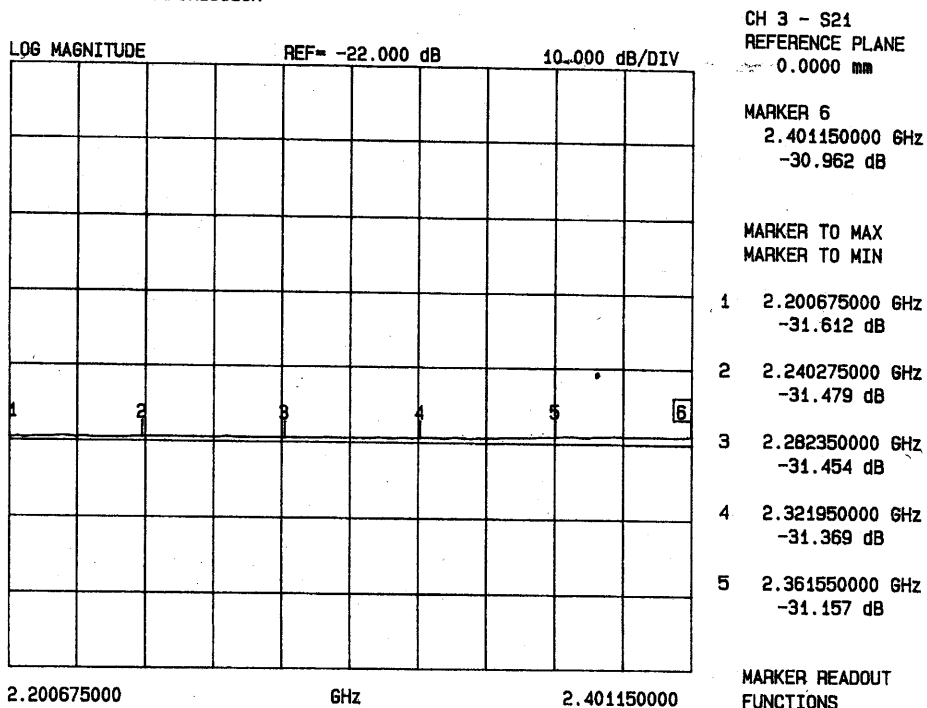


## SUMMARY TEST DATA

<b>MODEL NUMBER</b>	<b>: SWN-218-2DR-SS-FS</b>
<b>SERIAL NUMBER</b>	<b>: 2MS010361</b>
<b>ENGINEER</b>	<b>: RENE AFABLE</b>
<b>VOLTAGE &amp; CURRENT DRAW</b>	<b>: +5vdc @ 62.5mA</b>

**ISOLATION\***  
 (AS MEASURED ON A VECTOR NETWORK ANALYZER)  
 J1-J3

S21 FORWARD TRANSMISSION



**\*J1: INPUT ARM**

FREQUENCY	ISOLATION
2.20 GHz	31.61 dB
2.24 GHz	31.47 dB
2.28 GHz	31.45 dB
2.32 GHz	31.36 dB
2.36 GHz	31.15 dB
2.40 GHz	30.96 dB

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