



**TEST REPORT**  
**ON**  
**3.1 TO 3.5 GHz**  
**SINGLE POLE TWO THROW**  
**TERMINATED / NON-REFLECTIVE SWITCH MODULE**

**AMC MODEL No:**  
**SWN-218-2DT**  
**OPTION NS**

Serial Numbers: 2MS311912 THRU 2MS311916

DESIGNED  
BY  
R. Afable

TESTED  
BY  
R. Afable

REPORTED  
BY  
E. Elder

**April 19, 2005**

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**ISO9001 : 2000 CERTIFIED**

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## SINGLE POLE TWO THROW TERMINATED / NON-REFLECTIVE SWITCH MODULE AMC MODEL No: SWN-218-2DT OPTION NS

### FEATURES:

- **3.1 TO 3.5 GHz FREQUENCY RANGE**
- **VERY LOW INSERTION LOSS**
- **HIGH ISOLATION**
- **INTEGRAL TTL DRIVER**
- **DESIGNED FOR LOW VIDEO TRANSIENT**
- **HIGH POWER CAPABILITIES**

### SPECIFICATIONS:

● FREQUENCY	: 3.1 TO 3.5 GHz
● INSERTION LOSS	: 1.2±0.2 dB (@3.1 GHz)
● ISOLATION	: 80 dB MINIMUM
● VSWR	: 1.4:1
● FLATNESS	: ±0.25 dB (MAXIMUM) (@ 3.1 TO 3.5 GHz)
● AMPLITUDE VARIATION	: ±0.1 dB (MAXIMUM) (40 MHz BW)
● PHASE VARIATION	: ±1° (MAXIMUM) (40 MHz BW LINEARITY)
● SPEED	: 35 ± 25 nS
● SETTLING TIME	: 200 nS (MAXIMUM)
● TRANSIENTS	: -80 dB (MAXIMUM) (2 TO 4 GHz 500 KHz PRF)
● POWER HANDLING	: +25 dBm (MINIMUM) SURVIVAL(@ 3.1 GHz)
● CONNECTORS	: SMA FEMALE
● POWER SUPPLY	: ± 5 VDC, 200 mA (MAXIMUM)

## PRODUCT FEATURE

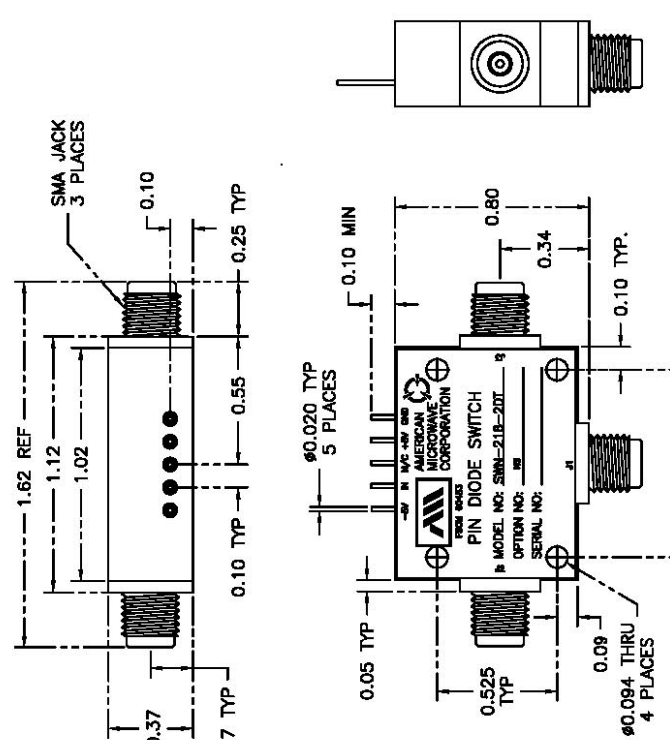
REV.	DESCRIPTION	DATE	APPROVED
1	ORIGINAL RELEASE JOB# 304074E-2	10/18/01	

**DESCRIPTION:**  
 AMC MODEL SWN-218-2DT, OPTION NS, IS A SINGLE POLE DOUBLE THROW, NON-REFLECTIVE SWITCH WITH VERY LOW INSERTION LOSS, HIGH ISOLATION, HIGH POWER, AND WITH A BUILT-IN TTL DRIVER THAT OPERATES FROM 3.1 TO 3.5 GHz.

**SPECIFICATIONS:**

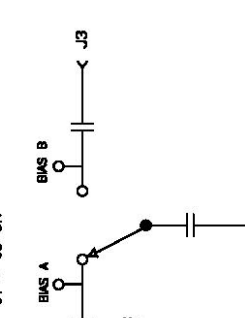
- FREQUENCY: ..... 3.1 - 3.5 GHz (TYP)
- INSERTION LOSS: ..... ( @3.1GHz ) 1.2 ± 0.2dB
- ISOLATION: ..... 80 dB MINIMUM
- VSWR: ..... 1.4:1 (MAX)
- FLATNESS: ..... ( @3.1 to 3.5GHz ) : ±0.25dB (MAX)
- AMPLITUDE VARIATION: ..... ( 40MHz BW ) : ±0.1dB (MAX)
- PHASE VARIATION: ..... ( 40MHz BW LINEARITY ) : ±1° (MAX)
- SPEED: ..... 35±25ns
- SETTLING TIME: ..... 200ns (MAX)
- TRANSIENTS: ..... ( 2 TO 4 GHz 500 KHz PRF ) : -80dBm (MAX)
- POWER HANDLING: ..... ( @3.1GHz ) : +28dBm (MIN) SURVIVAL
- CONNECTORS: ..... SMA FEMALE
- POWER SUPPLY: ..... ± 5VDC, 200mA (MAX)
- LOGIC: ..... "0" J1 - J2 ON  
 "1" J1 - J3 ON



Dimensions shown in drawing:  
 SMA JACK 3 PLACES  
 1.62 REF  
 1.12  
 1.02  
 0.37  
 0.17 TYP  
 0.10 TYP  
 0.55  
 0.25 TYP  
 0.10  
 0.05 TYP  
 0.82 TYP  
 0.09 THRU 4 PLACES  
 0.525 TYP  
 0.10 TYP  
 0.34  
 0.80  
 0.10 MIN  
 5 PLACES  
 PIN DIODE SWITCH  
 PIN DIODE SWITCH  
 MODEL NO: SWN-218-2DT  
 SERIAL NO:

**BLOCK DIAGRAM:**



BIAS A  
 BIAS B  
 J2  
 J3  
 J1

**CONNECTIONS:**

PIN	CONNECTION
E1	-5V
E2	IN
E3	N/C
E4	+5V
E5	GND
J1	RF COMMON
J2	RF
J3	RF

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: ..... -55C TO +125C (STORAGE)
- HUMIDITY: ..... MIL-STD-202F, METHOD 213B COND. B
- SHOCK: ..... MIL-STD-202F, METHOD 2048 COND. B
- VIBRATION: ..... MIL-STD-202F, METHOD 2048 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

**CONFIDENTIAL AND PROPRIETARY**

AMERICAN MICROWAVE CORPORATION  
 FREDERICK, MARYLAND

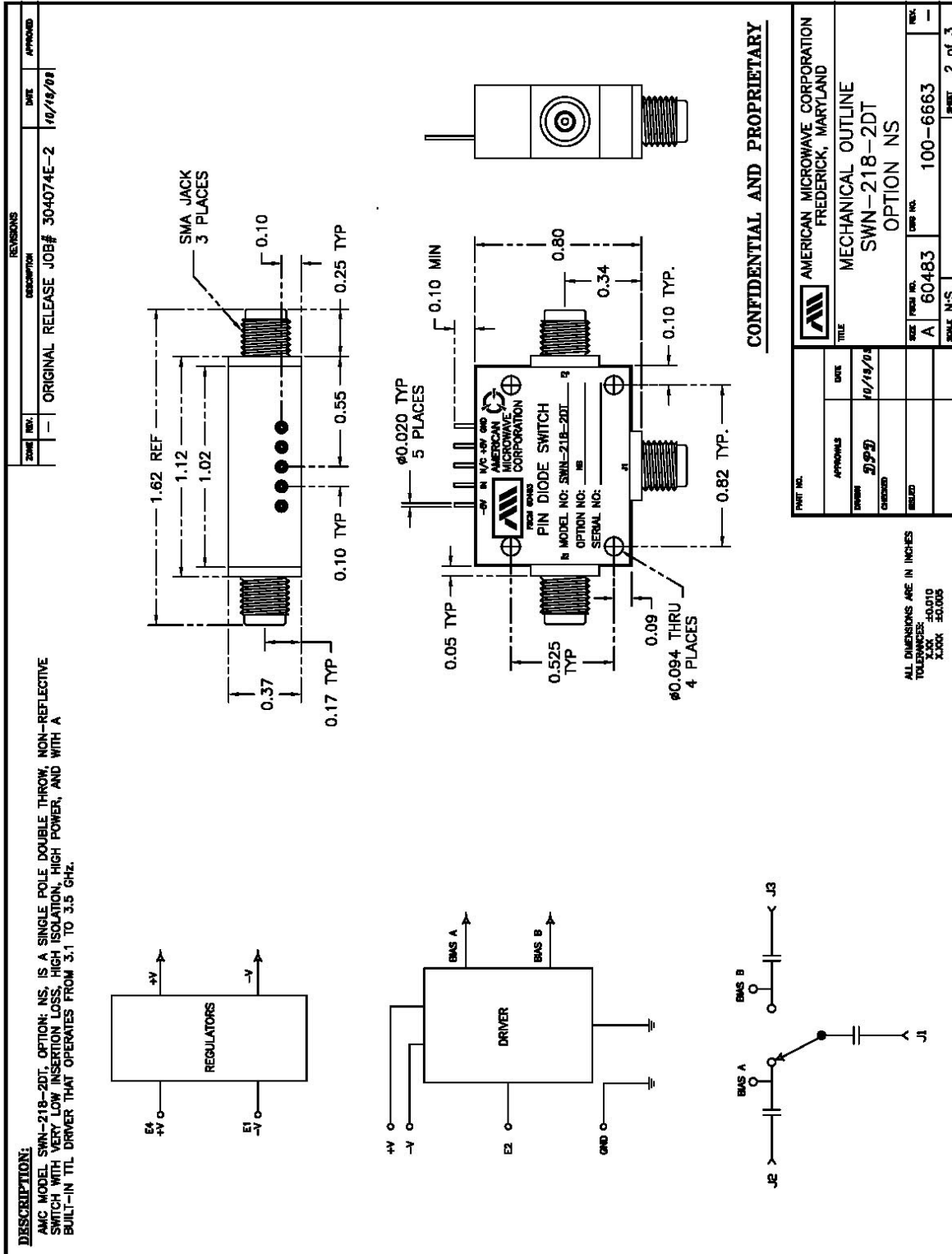
PRODUCT FEATURE  
 SWN-218-2DT  
 OPTION NS

DATE: 10/18/01  
 DRAWN: JPB  
 CHECKED: [ ]  
 BUILT: [ ]

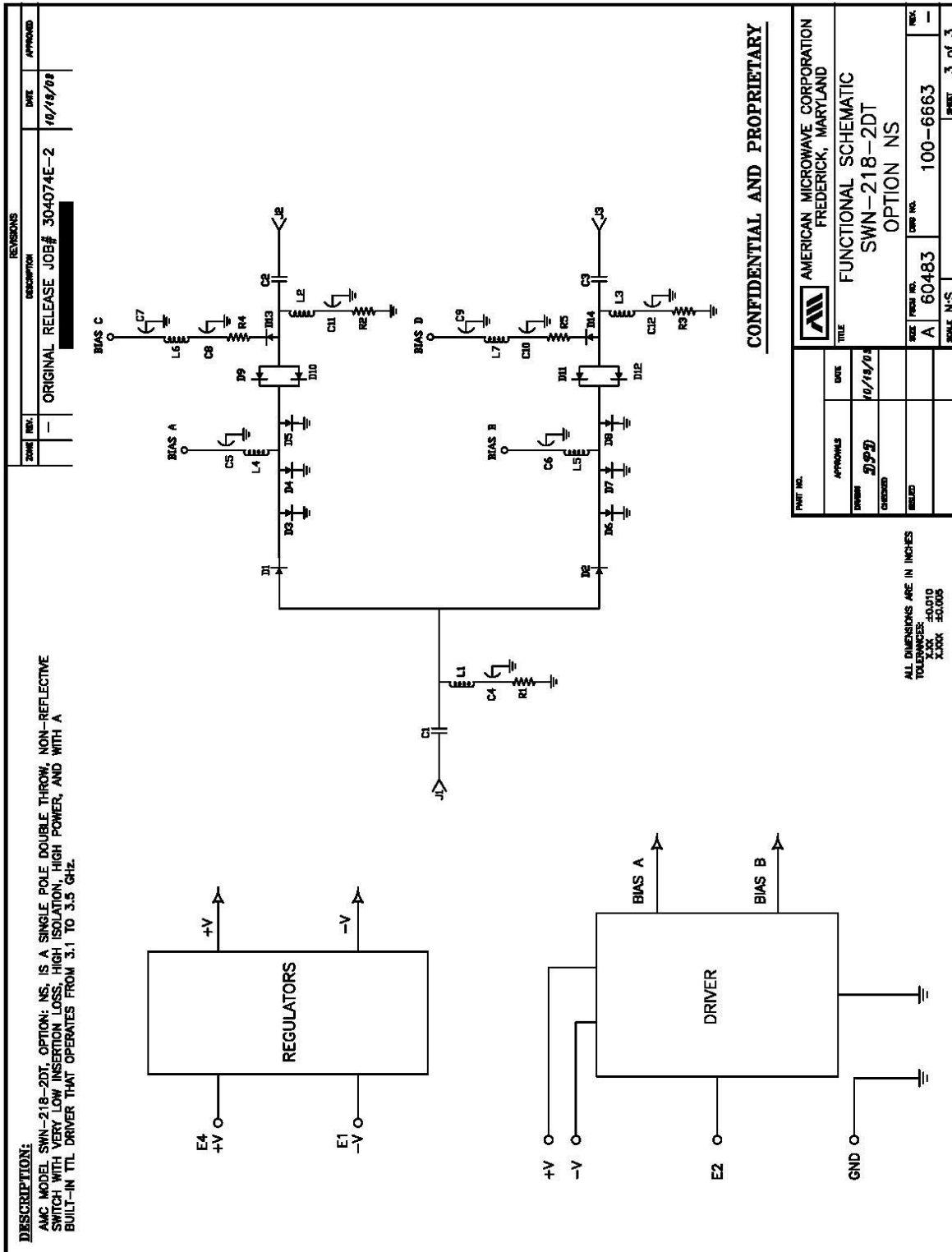
REV. FROM NO. A 60483  
 DWG NO. 100-6663  
 SCALE NS  
 SHEET 1 of 3

ALL DIMENSIONS ARE IN INCHES  
 TOLERANCES: ±0.010  
 ±.005  
 ±.008

**OUTLINE DRAWING**



## FUNCTIONAL SCHEMATIC



## **FINAL TEST DATA**

**FINAL TEST DATA SHEETS**

**FOR**

**AMC MODEL NUMBER**

**SWN-218-2DT  
OPTION NS**

**Serial Numbers:**

**2MS311912 THRU 2MS311916**

**FINAL TEST DATA**

AMC MODEL NO: SWN-218-2DT OPTION NS, SERIAL NUMBER: 2MS311912

FORM: 451-SW-DTA  
 DATE: 11/28/03



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

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

CUSTOMER: NEARSON  
 JOB NO: 304074E-2  
 MODEL NO: SWN-218-2DT  
 SERIAL NO: 2MS311912  
 CURRENT DRAW: +5 VDC @ 65 mA; -5 VDC @ 30 mA

TECHNICIAN: R. Afable  
 OPTION NO: NS  
 SPECIFICATION:  
 FREQUENCY RANGE: 3.1 – 3.5 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	0.74 dB @ 3.1-3.5 GHz	16.64 dB	1.35 : 1	20.58 dB	1.21 : 1	23.25 dB	1.15 : 1
J1-J3	0.73 dB @ 3.1-3.5 GHz	16.62 dB	1.35 : 1	20.51 dB	1.21 : 1	23.75 dB	1.14 : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
ISOLATION		SWITCHING SPEED					
		DELAY ON	RISE TIME	DELAY OFF	FALLTIME		
J1-J2	>80 dB @ 3.1-3.5 GHz	36 nS	6 nS	26 nS	4 nS		
J1-J3	>80 dB @ 3.1-3.5 GHz	36 nS	6 nS	28 nS	4 nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		

NOTE: Any additional test data on back  
 QA/QC APPROVAL: *Douglas V. Dull* TESTED ON: 8722D DATED: 12/01/03







**FINAL TEST DATA**

AMC MODEL NO: SWN-218-2DT OPTION NS, SERIAL NUMBER: 2MS311914

FORM: 451-SW-DTA  
 DATE: 11/28/03



AMERICAN MICROWAVE CORPORATION  
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FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

CUSTOMER: NEARSON  
 JOB NO: 304074E-2  
 MODEL NO: SWN-218-2DT  
 SERIAL NO: 2MS311914  
 CURRENT DRAW: +5 VDC @ 64 mA; -5 VDC @ 31 mA

TECHNICIAN: R. Afable  
 OPTION NO: NS  
 SPECIFICATION:  
 FREQUENCY RANGE: 3.1 - 3.5 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	0.63 dB @ 3.1-3.5 GHz	19.21 dB	1.25 : 1	22.63 dB	1.16 : 1	20.70 dB	1.20 : 1
J1-J3	0.65 dB @ 3.1-3.5 GHz	20.29 dB	1.21 : 1	22.47 dB	1.16 : 1	18.94 dB	1.25 : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
ISOLATION		SWITCHING SPEED					
		DELAY ON	RISE TIME	DELAY OFF	FALLTIME		
J1-J2	>80 dB @ 3.1-3.5 GHz	34 nS	6 nS	30 nS	5 nS		
J1-J3	>80 dB @ 3.1-3.5 GHz	45 nS	6 nS	38 nS	4 nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		

NOTE: Any additional test data on back

TESTED ON: 8722D  
 QA/QC APPROVAL: Dwight V. Smith DATED: 12/01/03

**FINAL TEST DATA**

AMC MODEL NO: SWN-218-2DT OPTION NS, SERIAL NUMBER: 2MS311915

FORM: 451-SW-DTA  
 DATE: 11/28/03



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FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

CUSTOMER: NEARSON  
 JOB NO: 304074E-2  
 MODEL NO: SWN-218-2DT  
 SERIAL NO: 2MS311915  
 CURRENT DRAW: + 5 VDC @ 65 mA; - 5 VDC @ 32 mA

TECHNICIAN: R. Afable  
 OPTION NO: NS  
 SPECIFICATION:  
 FREQUENCY RANGE: 3.1 - 3.5 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	0.75 dB @ 3.1-3.5 GHz	18.90 dB	1.126 : 1	23.91 dB	1.114 : 1	26.38 dB	1.110 : 1
J1-J3	0.67 dB @ 3.1-3.5 GHz	18.79 dB	1.126 : 1	23.57 dB	1.114 : 1	23.01 dB	1.115 : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB @ GHz	dB	1. : 1	dB	1. : 1	dB	1. : 1
ISOLATION		SWITCHING SPEED					
		DELAY ON	RISE TIME	DELAY OFF	FALLTIME		
J1-J2	>80 dB @ 3.1-3.5 GHz	40 nS	6 nS	37 nS	4 nS		
J1-J3	>80 dB @ 3.1-3.5 GHz	40 nS	6 nS	37 nS	4 nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		

NOTE: Any additional test data on back

TESTED ON: 8722D  
 02 DATED: 12/01/03  
 OA/OC APPROVAL: *[Signature]*

