



**TEST REPORT**  
**ON**  
**0.3 TO 20 GHz**  
**SINGLE POLE TWO THROW**  
**REFLECTIVE / NON-ABSORPTIVE PIN DIODE SWITCH**

**AMC MODEL No:**  
**MSN-2DR-025-COMSOL**

Serial Numbers: 2MS801654, 2MS801671, AND 2MS801672

DESIGNED  
BY  
R. Afable / Dr. A. Gorwara

TESTED  
BY  
H. Hahn

REPORTED  
BY  
E. Elder

**September 8, 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 : 2000 CERTIFIED**

Handwritten initials and signatures in blue ink, including DRH, WTS, JDT, PA, MSB, EJC, and LC.

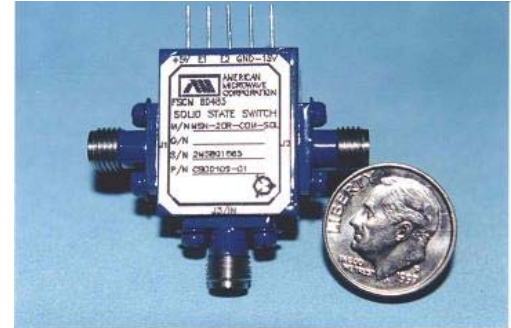
## TABLE OF CONTENTS

●	PRODUCT DESCRIPTION AND ELECTRICAL SPECIFICATIONS	PAGE 3
●	PRODUCT FEATURE AND ENVIRONMENTAL SPECIFICATIONS	PAGE 4
●	FUNCTIONAL SCHEMATIC	PAGE 5
●	TEST DATA ON MSN-2DR-025-COMSOL, SERIAL NUMBERS 2MS801654, 2MS801671, AND 2MS801672	PAGE 6
●	TEST DATA FOR MSN-2DR-025-COMSOL SERIAL NUMBER 2MS801654	PAGE 7
●	TEST DATA FOR MSN-2DR-025-COMSOL SERIAL NUMBER 2MS801671	PAGE 8
●	TEST DATA FOR MSN-2DR-025-COMSOL SERIAL NUMBER 2MS801672	PAGE 9

## SINGLE POLE TWO THROW REFLECTIVE / NON-ABSORPTIVE PIN DIODE SWITCH AMC MODEL No: MSN-2DR-025-COMSOL

### FEATURES:

- **0.3 TO 20 GHz FREQUENCY RANGE**
- **REFLECTIVE / NON-ABSORPTIVE**
- **+5 / -15 VOLT SUPPLIES**



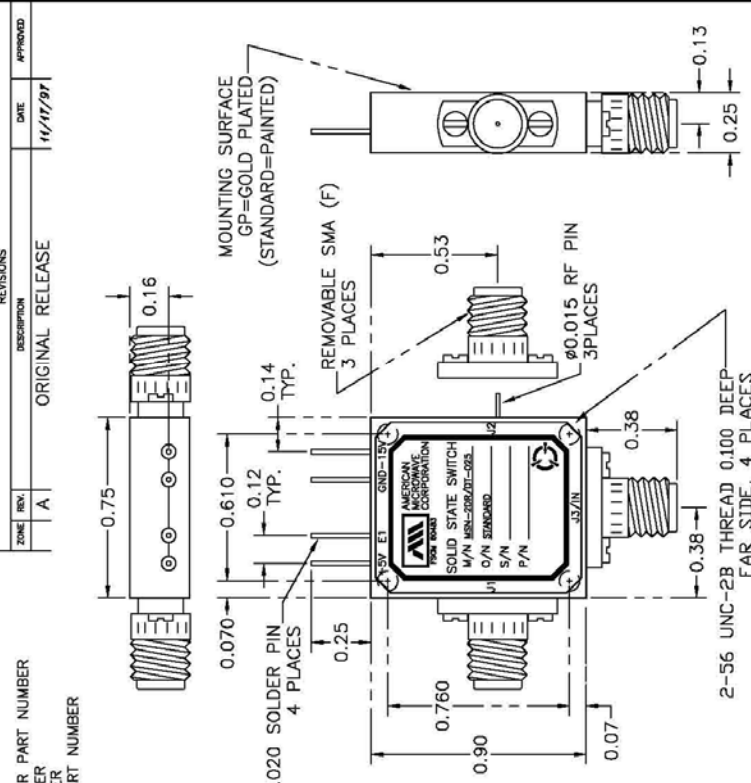
### SPECIFICATIONS:

- **FREQUENCY** : 0.3 TO 20 GHz
- **INSERTION LOSS** : 3.0 dB
- **ISOLATION** : 60 dB MINIMUM
- **VSWR** : 2.2:1
- **SPEED** : RISE: 10 nS TYPICAL, 15 nS MAXIMUM  
: FALL: 10 nS TYPICAL, 15 nS MAXIMUM  
: DELAY ON: 75 nS TYPICAL, 100 nS MAXIMUM  
: DELAY OFF: 75 nS TYPICAL, 100 nS MAXIMUM
- **POWER SUPPLY** : +5 VOLTS @ 50 mA MAXIMUM  
: -15 VOLTS @ 30 mA MAXIMUM
- **RF POWER RATING** : +27 dBm CW MAXIMUM
- **CONTROL** : TTL LOGIC "0"=ON J3-J1, "1"=ON J3-J2

## PRODUCT FEATURE

**REVISIONS**

REV.	DESCRIPTION	DATE	APPROVED
A	ORIGINAL RELEASE	11/17/97	



MOUNTING SURFACE  
GP=GOLD PLATED  
(STANDARD=PAINTED)

REMOVABLE SMA (F)  
3 PLACES

90.015 RF PIN  
3 PLACES

90.020 SOLDER PIN  
4 PLACES

2-56 UNC-2B THREAD 0.100 DEEP  
FAR SIDE, 4 PLACES

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

M/N = MANUFACTURER PART NUMBER  
 O/N = OPTION NUMBER  
 S/N = SERIAL NUMBER  
 P/N = CUSTOMER PART NUMBER

• FREQUENCY: 0.3 GHz TO 20 GHz  
 • INSERTION LOSS: REFLECTIVE: 3.0db  
 ABSORPTIVE: 3.5db  
 • ISOLATION: 60dB MINIMUM  
 • VSWR: REFLECTIVE IN/OUT: 2.2:1  
 ABSORPTIVE IN/OUT: 2.2:1  
 ABSORPTIVE OUT/OFF: 2.2:1  
 • SPEED: RISE: 10ns TYPICAL, 15ns MAX.  
 FALL: 10ns TYPICAL, 15ns MAX.  
 DELAY ON: 75ns TYPICAL, 100ns MAX.  
 DELAY OFF: 75ns TYPICAL, 100ns MAX.  
 • POWER SUPPLY: +5V @ 50 mA MAX.  
 -15V@ 30mA MAX.(ABSORPTIVE)  
 100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)  
 • RF POWER RATING: +27 dBm CW MAXIMUM  
 • CONTROL: TTL LOGIC "0"=ON "1"=OFF (INDEPENDANT CONTROL)  
 TTL LOGIC "0"=ON "1"=OFF (SINGLE CONTROL)

**OPTIONS:**  
 SINGLE CONTROL WITH SOLDER PIN STANDARD  
 IND-SP ..... INDEPENDANT CONTROL WITH SOLDER PIN  
 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)  
 418 ..... 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 ..... -5V POWER SUPPLIES  
 B03 ..... REVERSE LOGIC "1"=ON "0"=OFF  
 B04 ..... DRIVERLESS, CURRENT CONTROLLED  
 B06 ..... HIGH POWER - SPECIFY CW POWER, PULSE WIDTH,  
 DUTY CYCLE, RF FREQUENCY AND BANDWIDTH.  
 B07 ..... CUSTOM DESIGNED PRODUCT - SPECIFY INITIALS OF CUSTOMER  
 (NOT AVAILABLE WITH OPTION B02)  
 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

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

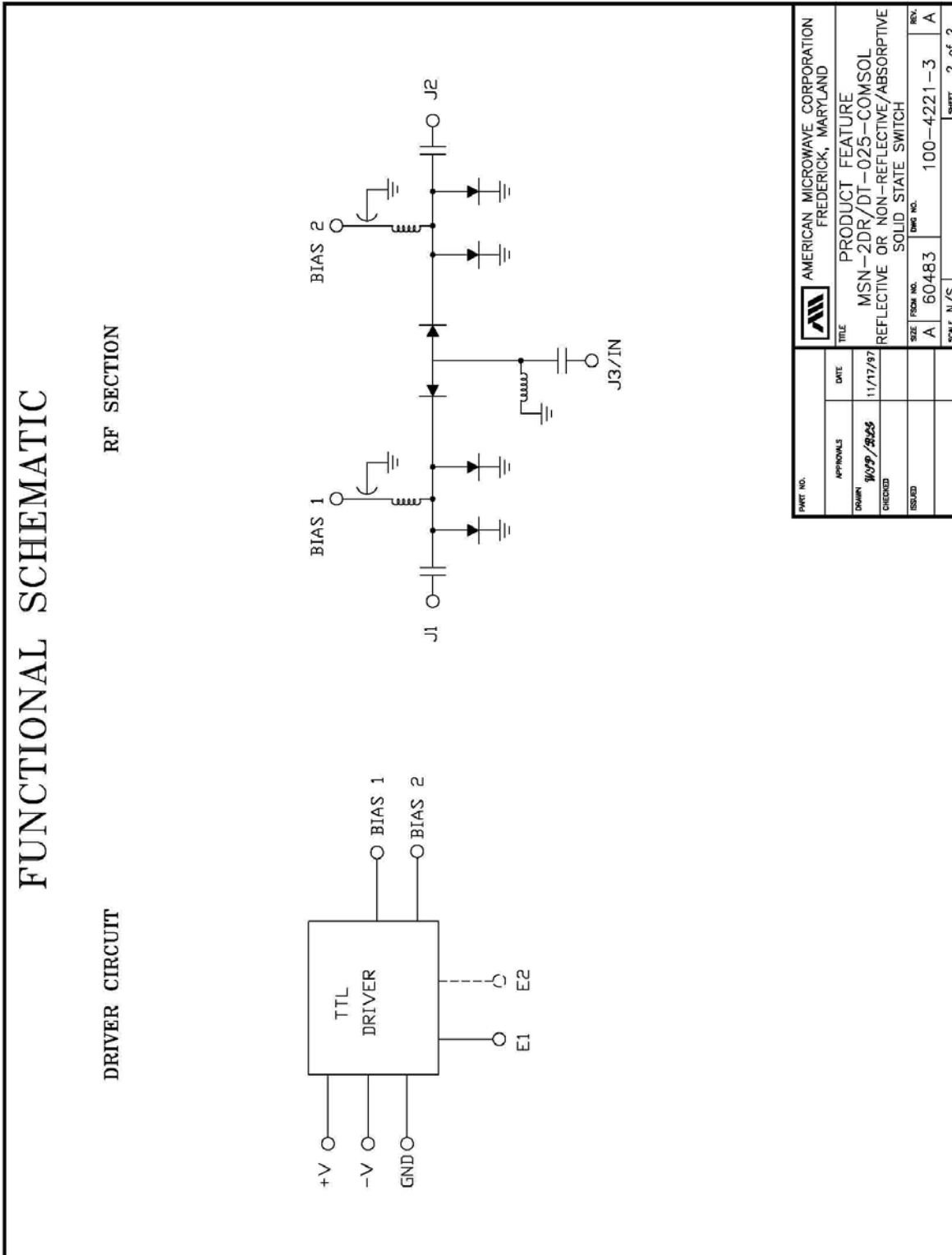
APPROVALS	DATE	TITLE
WPP/SLS	11/17/97	PRODUCT FEATURE
ISSUED		REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE
		SOLID STATE SWITCH

AMERICAN MICROWAVE CORPORATION  
 FREDERICK, MARYLAND

SIZE FROM NO. A 60483 DWG NO. 100-4221-3 REV. A

SCALE N/S SHEET 1 of 2

**FUNCTIONAL SCHEMATIC**



## FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

# MSN-2DR-025-COMSOL

Serial Numbers:

2MS801654, 2MS801671, AND 2MS801672



**FINAL TEST DATA**

AMC MODEL NO: MSN-2DR-025-COMSOL, SERIAL NUMBER: 2MS801654

FORM: SW-01/0791



DATE: 3-31-98

MICROWAVE SWITCH FINAL TEST DATA

OB NO: 80112 MODEL NO: MSN-2DR-con<sup>50C</sup> SERIAL NO: 2MS801654  
 CUSTOMER: Communication Solutions TECHNICIAN: H. HAHN  
 SPECIFICATION: CS00109-01 FREQUENCY RANGE: 0.3-20 GHz

+5V I +30mA  
-15V I -35mA

INSERTION LOSS	VSWR		
	INPUT	OUTPUT ON	OUTPUT OFF
J1-J2 -2.50 dB	-10.73 dB	-11.83 dB	/
J1-J3 -2.69 dB	-9.93 dB	-10.47 dB	/

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 -60 dB	42 ns	/	48 ns	/
J1-J3 -60 dB	52 ns	/	48 ns	/

NOTE: Any additional Test Data on Back

Test: H. HAHN  
 QA/QC: Q2



**FINAL TEST DATA**

AMC MODEL NO: MSN-2DR-025-COMSOL, SERIAL NUMBER: 2MS801671

FORM: SW-01/0791



DATE: 3-31-98

**MICROWAVE SWITCH FINAL TEST DATA**

JOB NO: 80112 MODEL NO: MSN-2DR-con <sup>50C</sup> SERIAL NO: 2MS801671  
 CUSTOMER: Communication Solutions TECHNICIAN: A. H. H. H.  
 SPECIFICATION: C500109-01 FREQUENCY RANGE: 0.3-20 GHz

+5V I +30mA  
 -15V I -35mA

INSERTION LOSS		VSWR		
		INPUT	OUTPUT ON	OUTPUT OFF
J1-J2	-2.19 dB	-11.42 dB	-12.83 dB	/
J1-J3	-2.39 dB	-11.00 dB	-10.99 dB	/

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 -60 dB	58 ns	/	52 ns	/
J1-J3 -60 dB	60 ns	/	50 ns	/

NOTE: Any additional Test Data on Back

Test: [Signature]  
 QA/QC: 02



**FINAL TEST DATA**

AMC MODEL NO: MSN-2DR-025-COMSOL, SERIAL NUMBER: 2MS801672

FORM: SW-01/0791



DATE: 3-31-98

MICROWAVE SWITCH FINAL TEST DATA

OB NO: 80112 MODEL NO: MSN-2DR-con<sup>50C</sup> SERIAL NO: 2MS801672  
 CUSTOMER: Communication Solutions TECHNICIAN: A. H. H. H.  
 SPECIFICATION: C500109-01 FREQUENCY RANGE: 0.3-20 GHz

+5V I +30mA  
 -15V I -35mA

INSERTION LOSS	VSWR		
	INPUT	OUTPUT ON	OUTPUT OFF
J1-J2 -2.16 dB	-12.21 dB	-13.25 dB	/
J1-J3 -2.38 dB	-10.55 dB	-10.49 dB	/

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 -60 dB	56 ns	/	50 ns	/
J1-J3 -60 dB	60 ns	/	50 ns	/

NOTE: Any additional Test Data on Back

Test: A. H. H. H.  
 QA/QC: Q2