



**TEST REPORT**  
**ON**  
**7.2 TO 8.5 GHz**  
**SINGLE POLE FIVE THROW**  
**REFLECTIVE SWITCH MODULE**

**AMC MODEL No:**  
**SWN-1170-5DR**  
**OPTION MCLID5-14**

**Serial Numbers: 5MS102002 THRU 5MS102010**

**DESIGNED**  
**BY**  
**R. Afable**

**TESTED**  
**BY**  
**T. Phung**

**REPORTED**  
**BY**  
**E. Elder**

**October 28, 2004**

*DRH*  
*ES*  
*SKM*  
*JDT*  
*LC*  
*hK*  
*Ch*

**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**

## TABLE OF CONTENTS

●	PRODUCT DESCRIPTION AND ELECTRICAL SPECIFICATIONS	PAGE 3
●	PRODUCT FEATURE AND ENVIRONMENTAL SPECIFICATIONS	PAGE 4
●	OUTLINE DRAWING	PAGE 5
●	FUNCTIONAL SCHEMATIC	PAGE 6
●	TEST DATA ON SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBERS 5MS102002 THRU 5MS102010	PAGE 7
●	TEST DATA FOR SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBER 5MS102002	PAGE 8
●	TEST DATA FOR SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBER 5MS102003	PAGE 9
●	TEST DATA FOR SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBER 5MS102004	PAGE 10
●	TEST DATA FOR SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBER 5MS102005	PAGE 11
●	TEST DATA FOR SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBER 5MS102006	PAGE 12
●	TEST DATA FOR SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBER 5MS102007	PAGE 13
●	TEST DATA FOR SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBER 5MS102008	PAGE 14
●	TEST DATA FOR SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBER 5MS102009	PAGE 15
●	TEST DATA FOR SWN-1170-5DR OPTION MCLID5-14 SERIAL NUMBER 5MS102010	PAGE 16

## SINGLE POLE FIVE THROW REFLECTIVE SWITCH MODULE AMC MODEL No: SWN-1170-5DR OPTION MCLID5-14

### FEATURES:

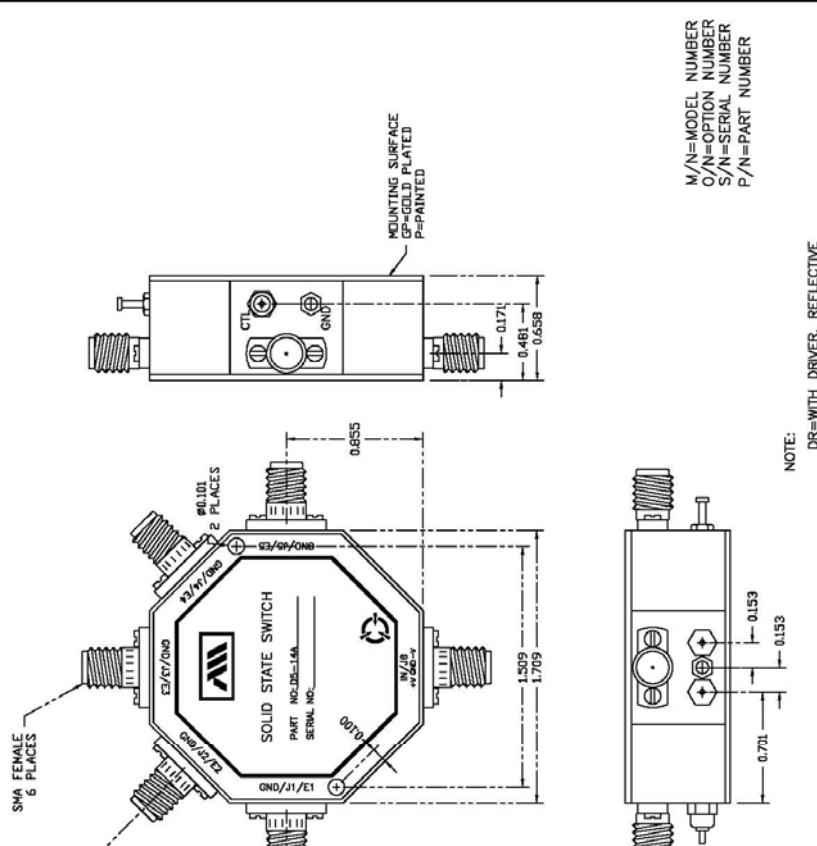
- **7.2 TO 8.5 GHz FREQUENCY RANGE**
- **LOW INSERTION LOSS**
- **HIGH ISOLATION**
- **INTEGRAL TTL DRIVER**



### SPECIFICATIONS:

- |                  |   |                              |
|------------------|---|------------------------------|
| ● FREQUENCY      | : | 7.2 TO 8.5 GHz               |
| ● INSERTION LOSS | : | 2.30 dB MAXIMUM              |
| ● ISOLATION      | : | 60 dB MINIMUM                |
| ● VSWR           | : | 1.9:1                        |
| ● SPEED          | : | RISE: 100 ns MAXIMUM         |
|                  | : | FALL: 100 ns MAXIMUM         |
|                  | : | DELAY ON: 150 ns TYPICAL     |
|                  | : | DELAY OFF: 150 ns TYPICAL    |
| ● CONTROL        | : | TTL LOGIC "0"=ON, "1"=OFF    |
| ● POWER SUPPLY   | : | +5V @ 70 mA MAXIMUM          |
|                  | : | -5V @ 70 mA MAXIMUM          |
| ● CONNECTORS     | : | RF CONNECTORS ARE SMA FEMALE |
| ● SIZE           | : | 1.71" FLAT TO FLAT 0.65" (H) |
| ● WEIGHT         | : | 2 OZ                         |

## PRODUCT FEATURE

<p><b>REVISIONS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>ZONE</th> <th>REV.</th> <th>DESCRIPTION</th> <th>DATE</th> <th>APPROVED</th> </tr> <tr> <td></td> <td>—</td> <td>ORIGINAL JOB 011249E</td> <td>01/11/04</td> <td></td> </tr> </table>	ZONE	REV.	DESCRIPTION	DATE	APPROVED		—	ORIGINAL JOB 011249E	01/11/04		 <p style="text-align: right;">M/N=MODEL NUMBER      O/N=OPTION NUMBER      S/N=SERIAL NUMBER      P/N=PART NUMBER</p> <p style="text-align: center;">NOTE:      DR=WITH DRIVER, REFLECTIVE      DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;"><b>AMERICAN MICROWAVE CORPORATION</b> FREDERICK, MARYLAND</td> </tr> <tr> <td style="width: 50%;">CONTRACT NO.</td> <td style="width: 50%;">TITLE</td> </tr> <tr> <td>APPROVALS</td> <td>DATE</td> </tr> <tr> <td>DESIGN RAB</td> <td>01/11/04</td> </tr> <tr> <td>CHECKED</td> <td></td> </tr> <tr> <td>ESDUD</td> <td></td> </tr> <tr> <td>SIZE FROM NO.</td> <td>ENG NO.</td> </tr> <tr> <td>A 60483</td> <td>100-5932</td> </tr> <tr> <td>SCALE N/S</td> <td>SHEET 1 of 3</td> </tr> </table> <p style="text-align: center;">OUTLINE DRAWING      SWN-1170-5DR      OPTION MCLID5-14</p> <p style="text-align: center;">ALL DIMENSIONS ARE IN INCHES      TOLERANCES: ±0.020      X.XXX ±0.010</p>	<b>AMERICAN MICROWAVE CORPORATION</b> FREDERICK, MARYLAND		CONTRACT NO.	TITLE	APPROVALS	DATE	DESIGN RAB	01/11/04	CHECKED		ESDUD		SIZE FROM NO.	ENG NO.	A 60483	100-5932	SCALE N/S	SHEET 1 of 3
ZONE	REV.	DESCRIPTION	DATE	APPROVED																										
	—	ORIGINAL JOB 011249E	01/11/04																											
<b>AMERICAN MICROWAVE CORPORATION</b> FREDERICK, MARYLAND																														
CONTRACT NO.	TITLE																													
APPROVALS	DATE																													
DESIGN RAB	01/11/04																													
CHECKED																														
ESDUD																														
SIZE FROM NO.	ENG NO.																													
A 60483	100-5932																													
SCALE N/S	SHEET 1 of 3																													

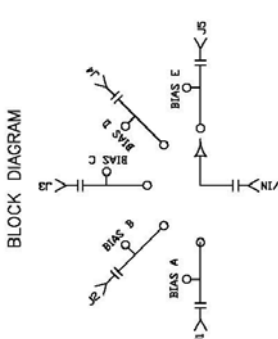
  

**DESCRIPTION:**  
 AMC MODEL SWN-1170-5DR, OPTION MCLID5-14 IS A SINGLE POLE FIVE THROW REFLECTIVE SWITCH MODULE, WITH LOW INSERTION LOSS, HIGH ISOLATION, AND TTL DRIVER DESIGNED FOR 7.2 GHz TO 8.5 GHz OPERATION.

**SPECIFICATIONS:**

- FREQUENCY: 7.2 GHz TO 8.5 GHz
- INSERTION LOSS: 2.30 dB MAXIMUM
- ISOLATION: 60 dB MINIMUM
- VSWR: 1.9:1
- SPEED: RISE: 100ns MAXIMUM (90% TO 10% OR  $\pm 45,000^\circ$ )  
 FALL: 100ns MAXIMUM (10% TO 90% OF RF)  
 DELAY ON: 150ns TYPICAL  
 DELAY OFF: 150ns TYPICAL
- CONTROL: TTL LOGIC (O=ON, 1=OFF)
- POWER SUPPLY: +5V @ 70 mA MAXIMUM  
 -5V @ 70 mA MAXIMUM
- CONNECTORS: RF CONNECTORS ARE SMA FEMALE
- SIZE: 1.71" FLAT TO FLAT x 0.65" (H)
- WEIGHT: 2 OZ.

**BLOCK DIAGRAM**

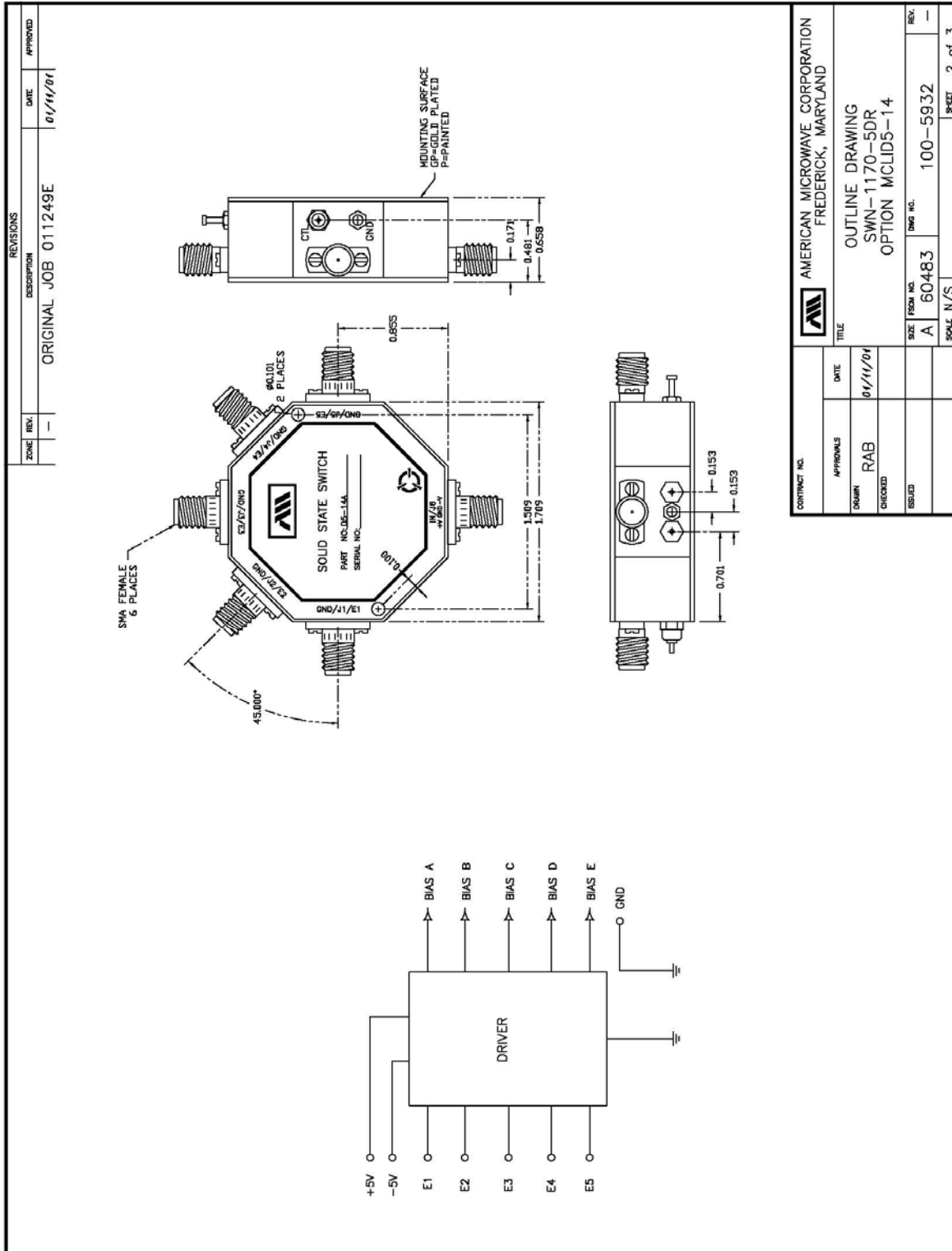


**ENVIRONMENTAL RATINGS:**

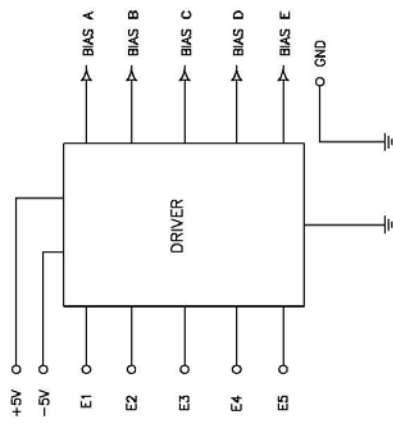
- TEMPERATURE: -55°C TO +85°C (OPERATING)  
 -65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

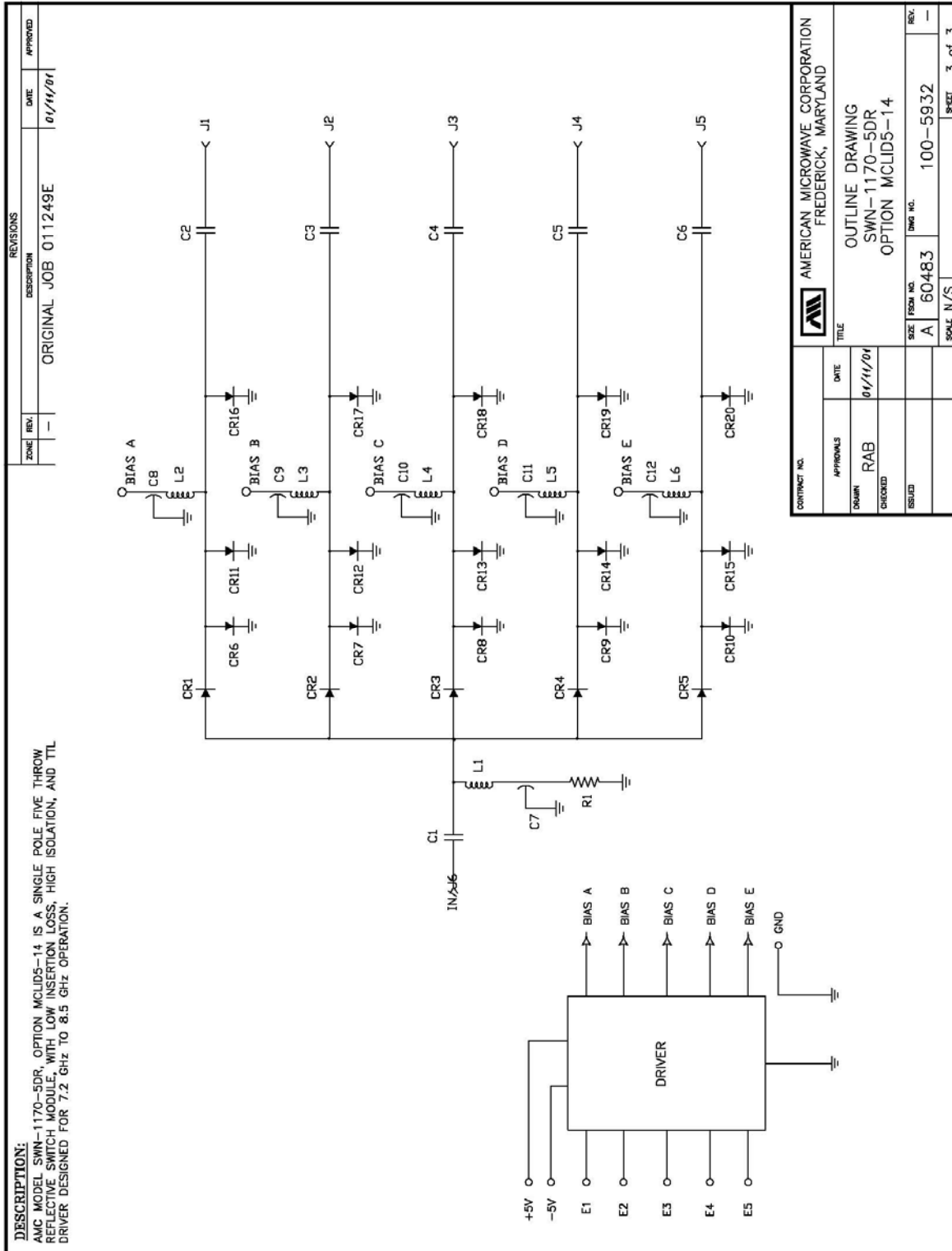
**OUTLINE DRAWING**



 AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND	
CONTRACT NO. APPROVALS DRAWN CHECKED ISSUED	TITLE DATE 01/11/04 RAB
SIZE FROM NO. A 60483	DWG NO. 100-5932
SCALE N/S	SHEET 2 of 3



## FUNCTIONAL SCHEMATIC



## FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

**SWN-1170-5DR**  
**OPTION MCLID5-14**

Serial Numbers:

**5MS102002 THRU 5MS102010**

**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-5DR OPTIONS MCLID5-14, SERIAL NUMBER: 5MS102002

FORM: 158-SW-DTA 09/15/00



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

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

DATE: 6-05-01

CUSTOMER: K & O INTERNATIONAL      TECHNICIAN: T. PHUNG  
 JOB NO: 011249E  
 MODEL NO: SWN-1170-5DR      OPTION NO: MCLID5-14  
 SERIAL NO: 5MS102002      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 70 mA; -5 VDC @ 70 mA      FREQUENCY RANGE: 7.2-8.5 GHz

INSERTION LOSS (WORSE CASE)	RETURN LOSS (WORSE CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J6-J1 1.46 dB	18.37 dB	1.27: 1	20.97 dB	1.20: 1	— dB	1. : 1
J6-J2 1.45 dB	19.16 dB	1.25: 1	23.81 dB	1.14: 1	— dB	1. : 1
J6-J3 1.49 dB	19.02 dB	1.25: 1	23.91 dB	1.14: 1	— dB	1. : 1
J6-J4 1.46 dB	20.17 dB	1.22: 1	22.30 dB	1.17: 1	— dB	1. : 1
J6-J5 1.51 dB	18.84 dB	1.26: 1	19.97 dB	1.22: 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
J6-J1 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J2 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J3 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J4 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J5 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 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: 4/8/2001  
 QA/QC APPROVAL: INSP. BY Q1      DATED: 6/7/01



**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-5DR OPTIONS MCLID5-14, SERIAL NUMBER: 5MS102003

FORM: 158-SW-DTA 09/15/00



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

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

DATE: 6-04-01

CUSTOMER: K & O INTERNATIONAL      TECHNICIAN: T. PHUNG  
 JOB NO: 011249E  
 MODEL NO: SWN-1170-5DR      OPTION NO: MCLID 5-14  
 SERIAL NO: 5MS102003      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 70 mA; -5 VDC @ 70 mA      FREQUENCY RANGE: 7.2-8.5 GHz

INSERTION LOSS (WORSE CASE)	RETURN LOSS (WORSE CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J6-J1 1.47 dB	17.71 dB	1.30 : 1	21.19 dB	1.19 : 1	— dB	1. : 1
J6-J2 1.47 dB	19.30 dB	1.24 : 1	18.65 dB	1.26 : 1	— dB	1. : 1
J6-J3 1.47 dB	18.33 dB	1.28 : 1	23.86 dB	1.14 : 1	— dB	1. : 1
J6-J4 1.53 dB	18.96 dB	1.25 : 1	20.33 dB	1.21 : 1	— dB	1. : 1
J6-J5 1.52 dB	17.03 dB	1.33 : 1	23.21 dB	1.15 : 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
J6-J1 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J2 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J3 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J4 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J5 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 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 8720D  
 QA/QC APPROVAL: INSF. BY Q1      DATED: 6/7/01

**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-5DR OPTIONS MCLID5-14, SERIAL NUMBER: 5MS102004

FORM: 158-SW-DTA 09/15/00



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

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

DATE: 6-05-01

CUSTOMER: K & O INTERNATIONAL      TECHNICIAN: T. PHUNG  
 JOB NO: 011249E  
 MODEL NO: SWN-1170-5DR      OPTION NO: MCLID 5-14  
 SERIAL NO: 5MS102004      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 70 mA; -5 VDC @ 70 mA      FREQUENCY RANGE: 7.2-8.5 GHz

INSERTION LOSS (WORSE CASE)	RETURN LOSS (WORSE CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J6-J1 1.63 dB	12.70 dB	1.60 : 1	14.81 dB	1.44 : 1	— dB	1. : 1
J6-J2 1.55 dB	16.07 dB	1.37 : 1	20.83 dB	1.20 : 1	— dB	1. : 1
J6-J3 1.59 dB	16.27 dB	1.36 : 1	17.52 dB	1.31 : 1	— dB	1. : 1
J6-J4 1.53 dB	16.40 dB	1.30 : 1	23.57 dB	1.14 : 1	— dB	1. : 1
J6-J5 1.53 dB	16.09 dB	1.37 : 1	20.57 dB	1.21 : 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
J6-J1 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J2 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J3 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J4 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J5 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 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: #78720D  
 QA/QC APPROVAL: INSP BY Q1      DATED: 6/7/01

**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-5DR OPTIONS MCLID5-14, SERIAL NUMBER: 5MS102005

FORM: 158-SW-DTA 09/15/00



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

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

DATE: 6-05-01

CUSTOMER: K & O INTERNATIONAL      TECHNICIAN: T. PHUNG  
 JOB NO: 011249E  
 MODEL NO: SWN-1170-5DR      OPTION NO: MCLID 5-14  
 SERIAL NO: 5MS102005      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 70 mA; -5 VDC @ 70 mA      FREQUENCY RANGE: 7.2-8.5 GHz

INSERTION LOSS (WORSE CASE)	RETURN LOSS (WORSE CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J6-J1 1.59 dB	14.89 dB	1.44 : 1	19.73 dB	1.23 : 1	— dB	1. : 1
J6-J2 1.50 dB	19.15 dB	1.25 : 1	21.33 dB	1.19 : 1	— dB	1. : 1
J6-J3 1.43 dB	19.98 dB	1.22 : 1	21.76 dB	1.18 : 1	— dB	1. : 1
J6-J4 1.49 dB	19.27 dB	1.24 : 1	24.17 dB	1.13 : 1	— dB	1. : 1
J6-J5 1.51 dB	18.84 dB	1.26 : 1	23.59 dB	1.14 : 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
J6-J1 >60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J2 >60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J3 >60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J4 >60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J5 >60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 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: HP8720D  
 QA/QC APPROVAL: INSP. BY Q1      DATED: 6/7/01

**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-5DR OPTIONS MCLID5-14, SERIAL NUMBER: 5MS102006

FORM: 158-SW-DTA 09/15/00



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

DATE: 8-02-01

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

CUSTOMER: K & O INTERNATIONAL      TECHNICIAN: T. PHUNG  
 JOB NO: 011249E  
 MODEL NO: SWN-1170-5DR      OPTION NO: MCLID 5-14  
 SERIAL NO: 5MS102006      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 70 mA; -5 VDC @ 70 mA      FREQUENCY RANGE: 7.2-8.5 GHz

INSERTION LOSS (WORSE CASE)	RETURN LOSS (WORSE CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J6-J1 <u>1.73</u> dB	<u>16.08</u> dB	<u>1.97</u> : 1	<u>12.71</u> dB	<u>1.60</u> : 1	<u>    </u> dB	<u>1. : 1</u>
J6-J2 <u>1.67</u> dB	<u>17.70</u> dB	<u>1.36</u> : 1	<u>14.08</u> dB	<u>1.49</u> : 1	<u>    </u> dB	<u>1. : 1</u>
J6-J3 <u>1.47</u> dB	<u>21.04</u> dB	<u>1.19</u> : 1	<u>17.85</u> dB	<u>1.29</u> : 1	<u>    </u> dB	<u>1. : 1</u>
J6-J4 <u>1.61</u> dB	<u>19.15</u> dB	<u>1.25</u> : 1	<u>14.46</u> dB	<u>1.47</u> : 1	<u>    </u> dB	<u>1. : 1</u>
J6-J5 <u>1.62</u> dB	<u>20.59</u> dB	<u>1.21</u> : 1	<u>16.67</u> dB	<u>1.34</u> : 1	<u>    </u> dB	<u>1. : 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

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J6-J1 <u>&gt; 60</u> dB	<u>&lt; 150</u> nS	<u>&lt; 100</u> nS	<u>&lt; 150</u> nS	<u>&lt; 100</u> nS
J6-J2 <u>&gt; 60</u> dB	<u>&lt; 150</u> nS	<u>&lt; 100</u> nS	<u>&lt; 150</u> nS	<u>&lt; 100</u> nS
J6-J3 <u>&gt; 60</u> dB	<u>&lt; 150</u> nS	<u>&lt; 100</u> nS	<u>&lt; 150</u> nS	<u>&lt; 100</u> nS
J6-J4 <u>&gt; 60</u> dB	<u>&lt; 150</u> nS	<u>&lt; 100</u> nS	<u>&lt; 150</u> nS	<u>&lt; 100</u> nS
J6-J5 <u>&gt; 60</u> dB	<u>&lt; 150</u> nS	<u>&lt; 100</u> nS	<u>&lt; 150</u> nS	<u>&lt; 100</u> 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 8720D  
 QA/QC APPROVAL: BY Q1      DATED: 6/7/01

**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-5DR OPTIONS MCLID5-14, SERIAL NUMBER: 5MS102007

FORM: 158-SW-DTA 09/15/00



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

DATE: 6.02.01

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

CUSTOMER: K & O INTERNATIONAL      TECHNICIAN: T. PHUNG  
 JOB NO: 011249E  
 MODEL NO: SWN-1170-5DR      OPTION NO: MCLID 5-14  
 SERIAL NO: 5MS102007      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 70 mA; -5 VDC @ 70 mA FREQUENCY RANGE: 7.2-8.5 GHz

INSERTION LOSS (WORSE CASE)	RETURN LOSS (WORSE CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J6-J1 1.61 dB	15.72 dB	1.39 : 1	15.55 dB	1.40 : 1	— dB	1. : 1
J6-J2 1.54 dB	17.54 dB	1.31 : 1	20.29 dB	1.21 : 1	— dB	1. : 1
J6-J3 1.50 dB	15.94 dB	1.38 : 1	22.32 dB	1.17 : 1	— dB	1. : 1
J6-J4 1.48 dB	16.66 dB	1.34 : 1	22.36 dB	1.16 : 1	— dB	1. : 1
J6-J5 1.58 dB	15.67 dB	1.39 : 1	22.18 dB	1.17 : 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
J6-J1 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J2 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J3 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J4 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J5 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 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 8720D  
 QA/QC APPROVAL: INSP BY QI      DATED: 6/7/01

**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-5DR OPTIONS MCLID5-14, SERIAL NUMBER: 5MS102008

FORM: 158-SW-DTA 09/15/00



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

DATE: 6-02-01

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

CUSTOMER: K & O INTERNATIONAL      TECHNICIAN: T. PHUNG  
 JOB NO: 011249E  
 MODEL NO: SWN-1170-5DR      OPTION NO: MCLID 5-14  
 SERIAL NO: 5MS102008      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 70 mA; -5 VDC @ 70 mA      FREQUENCY RANGE: 7.2-8.5 GHz

INSERTION LOSS (WORSE CASE)	RETURN LOSS (WORSE CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J6-J1 <u>1.47</u> dB	<u>18.14</u> dB	<u>1.28</u> : 1	<u>20.65</u> dB	<u>1.20</u> : 1	— dB	1. : 1
J6-J2 <u>1.55</u> dB	<u>20.97</u> dB	<u>1.20</u> : 1	<u>18.07</u> dB	<u>1.29</u> : 1	— dB	1. : 1
J6-J3 <u>1.39</u> dB	<u>22.11</u> dB	<u>1.17</u> : 1	<u>20.04</u> dB	<u>1.22</u> : 1	— dB	1. : 1
J6-J4 <u>1.48</u> dB	<u>22.00</u> dB	<u>1.17</u> : 1	<u>17.44</u> dB	<u>1.31</u> : 1	— dB	1. : 1
J6-J5 <u>1.59</u> dB	<u>18.20</u> dB	<u>1.28</u> : 1	<u>22.25</u> dB	<u>1.17</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

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J6-J1 > <u>60</u> dB	< <u>150</u> nS	< <u>100</u> nS	< <u>150</u> nS	< <u>100</u> nS
J6-J2 > <u>60</u> dB	< <u>150</u> nS	< <u>100</u> nS	< <u>150</u> nS	< <u>100</u> nS
J6-J3 > <u>60</u> dB	< <u>150</u> nS	< <u>100</u> nS	< <u>150</u> nS	< <u>100</u> nS
J6-J4 > <u>60</u> dB	< <u>150</u> nS	< <u>100</u> nS	< <u>150</u> nS	< <u>100</u> nS
J6-J5 > <u>60</u> dB	< <u>150</u> nS	< <u>100</u> nS	< <u>150</u> nS	< <u>100</u> 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 8720D  
 QA/QC APPROVAL: INSP. BY QT      DATED: 6/7/01

**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-5DR OPTIONS MCLID5-14, SERIAL NUMBER: 5MS102009

FORM: 158-SW-DTA 09/15/00



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

DATE: 6.01.01

FINAL TEST DATA  
 ON  
 MICROWAVE SWITCH

CUSTOMER: K & O INTERNATIONAL      TECHNICIAN: T. PHUNG  
 JOB NO: 011249E  
 MODEL NO: SWN-1170-5DT      OPTION NO: MCLID 5-14  
 SERIAL NO: 5MS 102609      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 70 mA; -5 VDC @ 70 mA      FREQUENCY RANGE: 7.2-8.5 GHz

INSERTION LOSS (WORSE CASE)	RETURN LOSS (WORSE CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J6-J1 1.40 dB	16.34 dB	1.36 : 1	23.05 dB	1.15 : 1	— dB	1. : 1
J6-J2 1.34 dB	19.69 dB	1.23 : 1	19.35 dB	1.24 : 1	— dB	1. : 1
J6-J3 1.36 dB	18.14 dB	1.28 : 1	24.05 dB	1.13 : 1	— dB	1. : 1
J6-J4 1.31 dB	20.85 dB	1.20 : 1	20.16 dB	1.22 : 1	— dB	1. : 1
J6-J5 1.50 dB	15.20 dB	1.42 : 1	18.54 dB	1.27 : 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
J6-J1 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J2 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J3 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J4 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 nS
J6-J5 > 60 dB	< 150 nS	< 100 nS	< 150 nS	< 100 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 8720D  
 QA/QC APPROVAL: INSP. BY Q1      DATED: 6/7/01

## FINAL TEST DATA

AMC MODEL NO: SWN-1170-5DR OPTIONS MCLID5-14, SERIAL NUMBER: 5MS102010

FORM: 158-SW-DTA 9/15/00



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

### FINAL TEST DATA ON MICROWAVE SWITCH

DATE: 6-01-01

CUSTOMER: K & O INTERNATIONAL      TECHNICIAN: T. PHUNG  
 JOB NO: 011249E  
 MODEL NO: SWN-1170-5DT      OPTION NO: MCLID 5-14  
 SERIAL NO: 5MS102010      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 70 mA; -5 VDC @ 70 mA      FREQUENCY RANGE: 7.2-8.5 GHz

INSERTION LOSS (WORSE CASE)	RETURN LOSS (WORSE CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J6-J1 <u>1.42</u> dB	<u>17.19</u> dB	<u>1.32 : 1</u>	<u>21.44</u> dB	<u>1.19 : 1</u>	<u>      </u> dB	<u>1. : 1</u>
J6-J2 <u>1.37</u> dB	<u>21.10</u> dB	<u>1.19 : 1</u>	<u>18.63</u> dB	<u>1.27 : 1</u>	<u>      </u> dB	<u>1. : 1</u>
J6-J3 <u>1.28</u> dB	<u>19.96</u> dB	<u>1.25 : 1</u>	<u>19.03</u> dB	<u>1.25 : 1</u>	<u>      </u> dB	<u>1. : 1</u>
J6-J4 <u>1.32</u> dB	<u>18.19</u> dB	<u>1.28 : 1</u>	<u>23.77</u> dB	<u>1.14 : 1</u>	<u>      </u> dB	<u>1. : 1</u>
J6-J5 <u>1.44</u> dB	<u>14.57</u> dB	<u>1.46 : 1</u>	<u>19.21</u> dB	<u>1.25 : 1</u>	<u>      </u> dB	<u>1. : 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

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J6-J1 <u>&gt;60</u> dB	<u>&lt;150</u> nS	<u>&lt;160</u> nS	<u>&lt;150</u> nS	<u>&lt;100</u> nS
J6-J2 <u>&gt;60</u> dB	<u>&lt;150</u> nS	<u>&lt;100</u> nS	<u>&lt;150</u> nS	<u>&lt;100</u> nS
J6-J3 <u>&gt;60</u> dB	<u>&lt;150</u> nS	<u>&lt;100</u> nS	<u>&lt;150</u> nS	<u>&lt;100</u> nS
J6-J4 <u>&gt;60</u> dB	<u>&lt;150</u> nS	<u>&lt;100</u> nS	<u>&lt;150</u> nS	<u>&lt;100</u> nS
J6-J5 <u>&gt;60</u> dB	<u>&lt;150</u> nS	<u>&lt;150</u> nS	<u>&lt;150</u> nS	<u>&lt;100</u> 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 8720D  
 QA/QC APPROVAL: INSP. BY QI      DATED: 6/7/01