TEST REPORT

ON

1.7 TO 18.3 GHz

SINGLE POLE EIGHT THROW

REFLECTIVE PIN DIODE SWITCH

AMC MODEL No:

MSN-8DR-06-DEC-SP

OPTION 10719, B05, LVT-COM

Serial Numbers: 8MS91196 THRU 8MS911101

DESIGNED
BY
Dr. A. Gorwara

TESTED
BY
R. Afable

REPORTED
BY
E. Elder

October 21, 2004

AMERICAN MICROWAVE CORPORATION., 7311-G Grove Road, Frederick, MD 21704
Tel: 301-662-4700 • Fax: 301-662-4938 • Email: 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
- MECHANICAL OUTLINE — PAGE 5
- FUNCTIONAL SCHEMATIC — PAGE 6
- TEST DATA ON MSN-8DR-06-DEC-SP OPTIONS 10719, HPR5W, LVT-COM SERIAL NUMBERS 8MS91196 THRU 8MS911101 — PAGE 7
- TEST DATA FOR MSN-8DR-06-DEC-SP OPTIONS 10719, HPR5W, LVT-COM SERIAL NUMBERS 8MS91196 — PAGE 8
- TEST DATA FOR MSN-8DR-06-DEC-SP OPTIONS 10719, HPR5W, LVT-COM SERIAL NUMBERS 8MS91197 — PAGE 9
- TEST DATA FOR MSN-8DR-06-DEC-SP OPTIONS 10719, HPR5W, LVT-COM SERIAL NUMBERS 8MS91198 — PAGE 10
- TEST DATA FOR MSN-8DR-06-DEC-SP OPTIONS 10719, HPR5W, LVT-COM SERIAL NUMBERS 8MS91199 — PAGE 11
- TEST DATA FOR MSN-8DR-06-DEC-SP OPTIONS 10719, HPR5W, LVT-COM SERIAL NUMBERS 8MS911100 — PAGE 12
- TEST DATA FOR MSN-8DR-06-DEC-SP OPTIONS 10719, HPR5W, LVT-COM SERIAL NUMBERS 8MS911101 — PAGE 13

SINGLE POLE EIGHT THROW REFLECTIVE PIN DIODE SWITCH AMC MODEL No: MSN-8DR-06-DEC-SP OPTIONS 10719, B05, LVT-COM

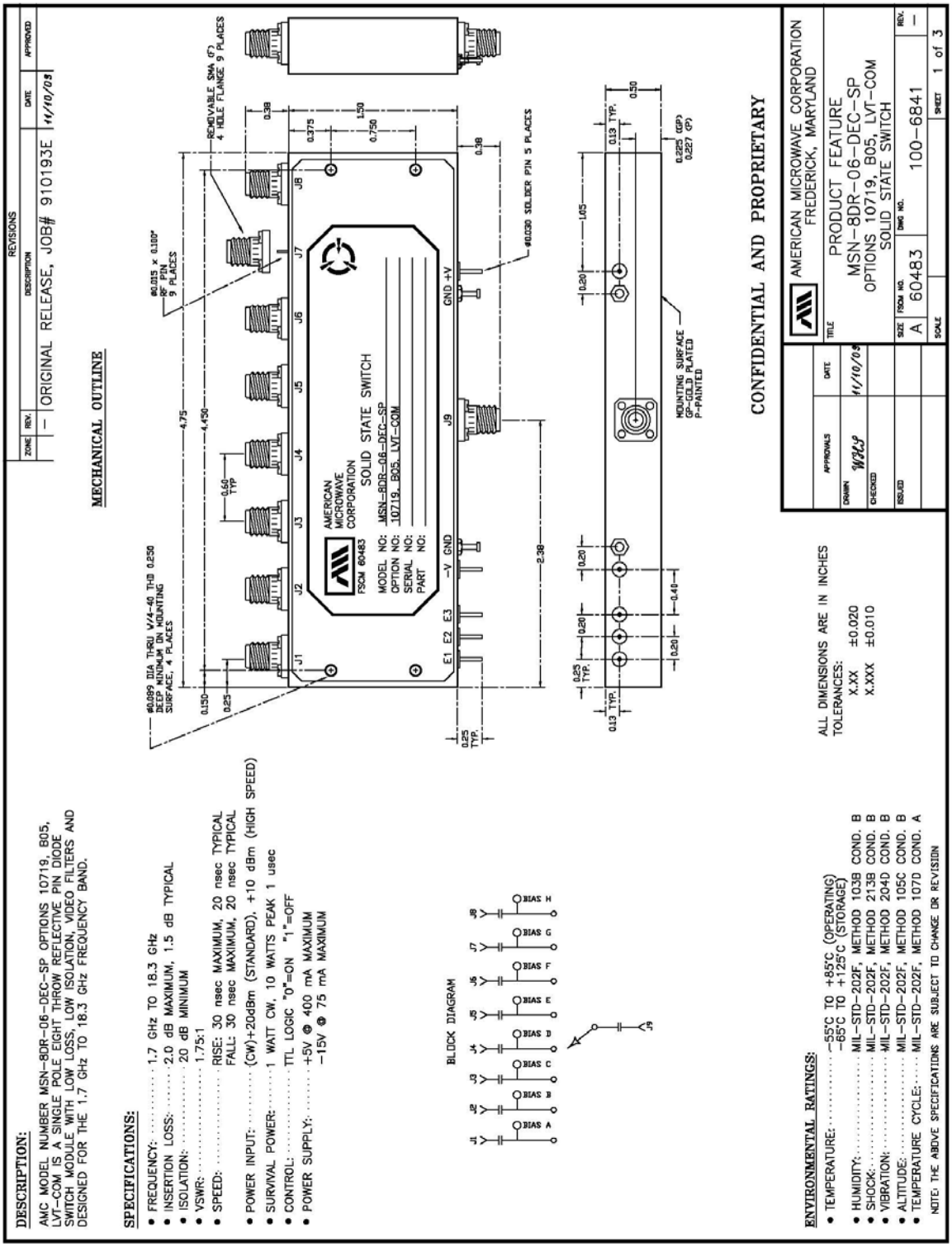
FEATURES:

- **1.7 TO 18.3 GHz FREQUENCY RANGE**
- **2.0 dB MAXIMUM LOW INSERTION LOSS**
- **20 dB MINIMUM LOW ISOLATION**
- **DESIGNED WITH VIDEO FILTERS**

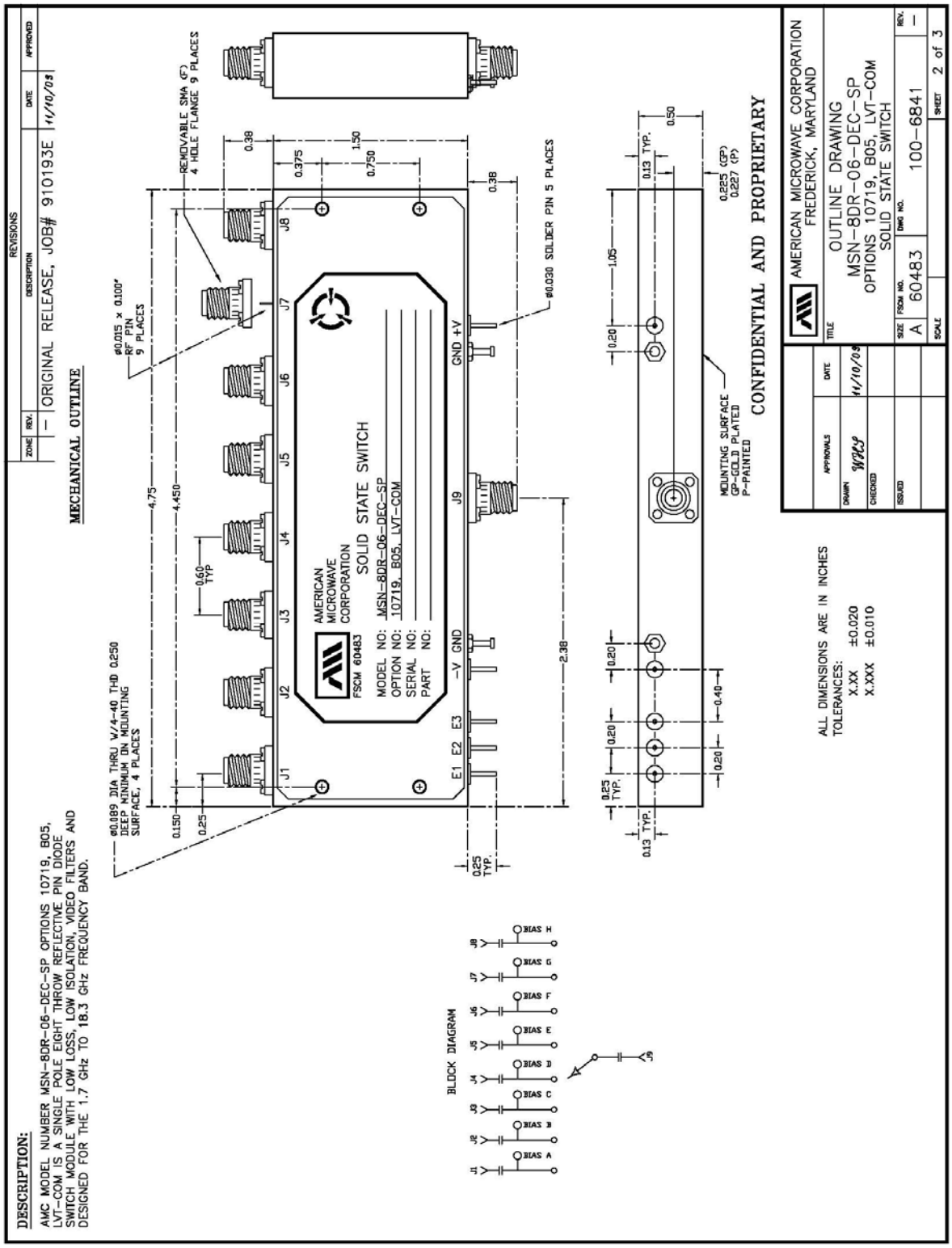
SPECIFICATIONS:

FREQUENCY	:	1.7 TO 18.3 GHz
INSERTION LOSS	:	2.0 dB MAXIMUM, 1.5 dB TYPICAL
ISOLATION	:	20 dB MINIMUM
VSWR	:	1.75:1
SPEED	:	RISE: 30 nsec MAXIMUM, 20 nsec TYPICAL
	:	FALL: 30 nsec MAXIMUM, 20 nsec TYPICAL
POWER INPUT	:	(CW)+20 dBm (STANDARD), +10 dBm (HIGH SPEED)
SURVIVAL POWER	:	1 WATT CW, 10 WATTS PEAK 1 usec
CONTROL	:	TTL LOGIC “0”=ON, “1”=OFF
POWER SUPPLY	:	+5V @ 400 mA MAXIMUM
	:	-5V @ 75 mA MAXIMUM

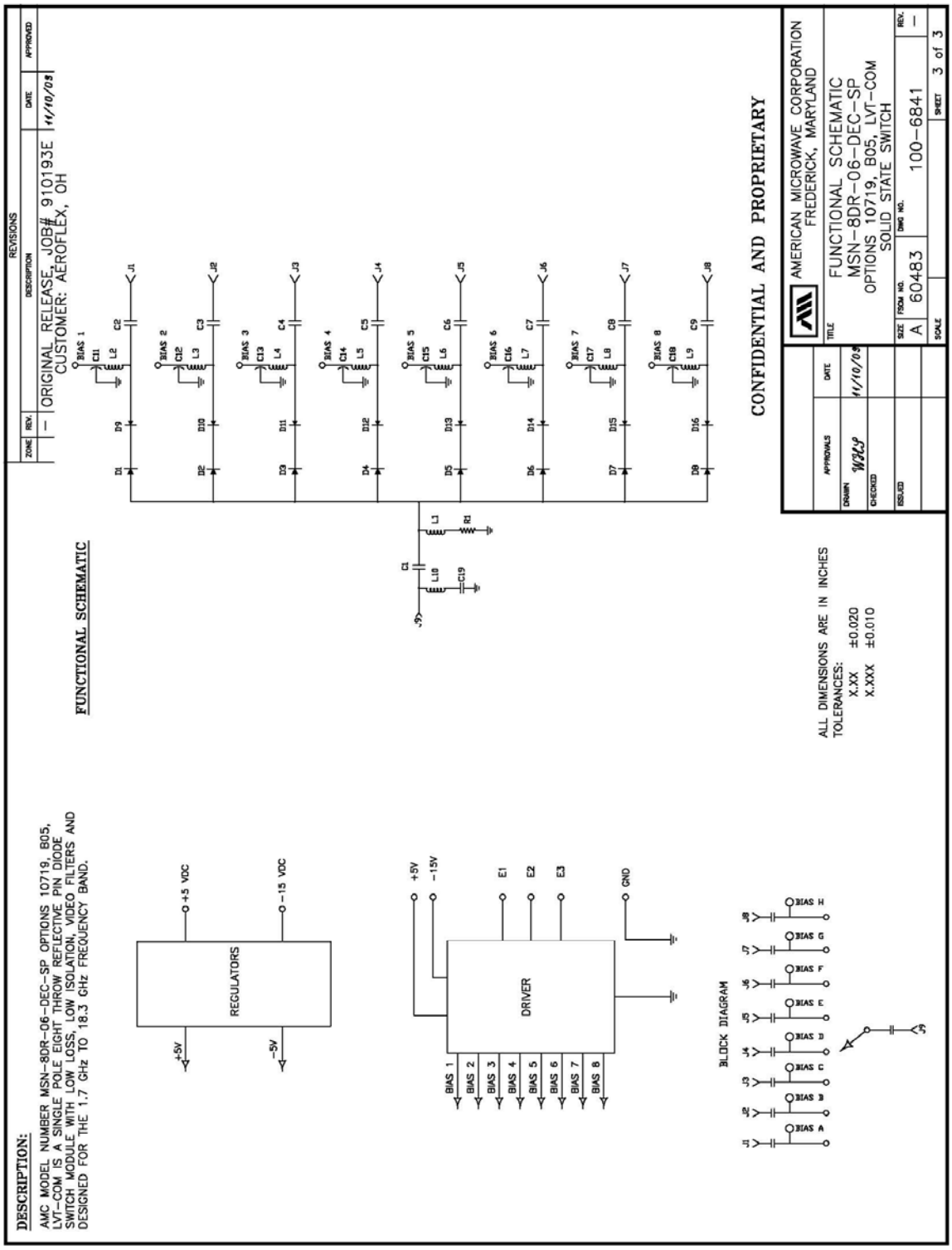
PRODUCT FEATURE



OUTLINE DRAWING



FUNCTIONAL SCHEMATIC



FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

MSN-8DR-06-DEC-SP
OPTION 10719, B05, LVT-COM

Serial Numbers:

8MS9196 THRU 8MS911101

AMERICAN MICROWAVE CORPORATION, 7311-G Grove Road, Frederick, MD 21704
Tel: 301-662-4700 ● Fax: 301-662-4938 ● Email: sales@americanmicrowavecorp.com
Website: http://www.americanmicrowavecorp.com

FINAL TEST DATA

AMC MODEL NO: MSN-8DR-06-DEC-SP OPTIONS 10719, B05, LVT-COM
SERIAL NUMBER: 8MS9196

FORM: 011-SW-DTA 19/1199

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

DATE: 4-2-00

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: AEROFLEX
TECHNICIAN: RA
JOB NO: 910193E
MODEL NO: MSN-8DR-06-DEC-SP
OPTION NO: 10719, B05, LVT-COM
SERIAL NO: 8MS91196
SPECIFICATION:
CURRENT DRAW: + 5 VDC @ 32 mA; - 15VDC @ 71 mA
FREQUENCY RANGE: 1.7-18.3 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
J9-J1 2.98 dB	11.86 dB	1.69 : 1	11.86 dB	1.69 : 1	dB	1. : 1
J9-J2 2.63 dB	11.55 dB	1.72 : 1	13.12 dB	1.57 : 1	dB	1. : 1
J9-J3 2.37 dB	10.78 dB	1.81 : 1	10.03 dB	1.92 : 1	dB	1. : 1
J9-J4 2.23 dB	12.04 dB	1.67 : 1	10.95 dB	1.79 : 1	dB	1. : 1
J9-J5 2.32 dB	11.95 dB	1.68 : 1	11.06 dB	1.78 : 1	dB	1. : 1
J9-J6 2.39 dB	11.40 dB	1.74 : 1	9.72 dB	1.97 : 1	dB	1. : 1
J9-J7 2.64 dB	11.23 dB	1.76 : 1	12.10 dB	1.66 : 1	dB	1. : 1
J9-J8 3.01 dB	11.97 dB	1.67 : 1	12.99 dB	1.58 : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J9-J1 > 20 dB	nS	2 nS	nS	4 nS
J9-J2 > 20 dB	nS	2 nS	nS	6 nS
J9-J3 > 20 dB	nS	2 nS	nS	8 nS
J9-J4 > 20 dB	nS	2 nS	nS	5 nS
J9-J5 > 20 dB	nS	2 nS	nS	4 nS
J9-J6 > 20 dB	nS	2 nS	nS	6 nS
J9-J7 > 20 dB	nS	2 nS	nS	8 nS
J9-J8 > 20 dB	nS	2 nS	nS	7 nS
	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: Wiltron 37347A

PROGRAM MANAGER/SUPERVISOR APPROVAL: DATED: 3/31/00

QA/QC APPROVAL: DATED: 4/2/00

VICE PRESIDENT/GENERAL MANAGER APPROVAL: DATED: 4/2/00

FINAL TEST DATA

AMC MODEL NO: MSN-8DR-06-DEC-SP OPTIONS 10719, B05, LVT-COM
SERIAL NUMBER: 8MS9197

FORM: 011-SW-DTA 19/1199

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

DATE: 4-2-00

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: AEROFLEX
JOB NO: 910193E
MODEL NO: MSN-8DR-06-DEC-SP
SERIAL NO: 8MS9197
CURRENT DRAW: + 5 VDC @ 10 mA; - 15VDC @ 58 mA

TECHNICIAN: RA
OPTION NO: 10719, B05, LVT-COM
SPECIFICATION:
FREQUENCY RANGE: 1.7-18.3 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
J9-J1 3.20 dB	13.04 dB	1.57 : 1	11.65 dB	1.71 : 1	dB	1. : 1
J9-J2 2.96 dB	10.28 dB	1.88 : 1	11.35 dB	1.74 : 1	dB	1. : 1
J9-J3 2.45 dB	10.81 dB	1.81 : 1	9.78 dB	1.96 : 1	dB	1. : 1
J9-J4 2.47 dB	10.47 dB	1.86 : 1	10.62 dB	1.83 : 1	dB	1. : 1
J9-J5 2.91 dB	10.19 dB	1.90 : 1	10.16 dB	1.90 : 1	dB	1. : 1
J9-J6 3.54 dB	8.81 dB	2.14 : 1	9.29 dB	2.04 : 1	dB	1. : 1
J9-J7 2.69 dB	11.50 dB	1.73 : 1	10.23 dB	1.82 : 1	dB	1. : 1
J9-J8 3.20 dB	10.77 dB	1.81 : 1	11.60 dB	1.71 : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J9-J1 > 20 dB	nS	2 nS	nS	6 nS
J9-J2 > 20 dB	nS	2 nS	nS	5 nS
J9-J3 > 20 dB	nS	2 nS	nS	4 nS
J9-J4 > 20 dB	nS	2 nS	nS	6 nS
J9-J5 > 20 dB	nS	2 nS	nS	6 nS
J9-J6 > 20 dB	nS	2 nS	nS	6 nS
J9-J7 > 20 dB	nS	2 nS	nS	6 nS
J9-J8 > 20 dB	nS	4 nS	nS	6 nS
	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: Wiltron 37347A

PROGRAM MANAGER/SUPERVISOR APPROVAL: DATED: 3/31/00

QA/QC APPROVAL: DATED: 4/2/00

VICE PRESIDENT/GENERAL MANAGER APPROVAL: DATED: 4/2/00

FINAL TEST DATA

AMC MODEL NO: MSN-8DR-06-DEC-SP OPTIONS 10719, B05, LVT-COM
SERIAL NUMBER: 8MS9198

FORM: 011-SW-DTA '9/1199

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

DATE: 3/29/00

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: AEROFLEX
JOB NO: 910193E
MODEL NO: MSN-8DR-06-DEC-SP
SERIAL NO: 8MS91198
CURRENT DRAW: + 5 VDC @ 23 mA; - 15VDC @ 66 mA

TECHNICIAN: RA
OPTION NO: 10719, B05, LVT-COM
SPECIFICATION:
FREQUENCY RANGE: 1.7-18.3 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
J9-J1 3.39 dB	10.65 dB	1.83 : 1	12.29 dB	1.64 : 1	dB	1. : 1
J9-J2 2.91 dB	11.92 dB	1.68 : 1	12.24 dB	1.65 : 1	dB	1. : 1
J9-J3 2.25 dB	10.36 dB	1.87 : 1	10.70 dB	1.82 : 1	dB	1. : 1
J9-J4 2.27 dB	12.08 dB	1.66 : 1	10.37 dB	1.87 : 1	dB	1. : 1
J9-J5 2.28 dB	9.85 dB	1.95 : 1	8.80 dB	2.14 : 1	dB	1. : 1
J9-J6 2.23 dB	11.07 dB	1.78 : 1	12.20 dB	1.65 : 1	dB	1. : 1
J9-J7 2.60 dB	12.39 dB	1.63 : 1	13.73 dB	1.52 : 1	dB	1. : 1
J9-J8 3.06 dB	10.71 dB	1.82 : 1	10.99 dB	1.79 : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J9-J1 >20 dB	nS	4 nS	nS	11 nS
J9-J2 >20 dB	nS	6 nS	nS	8 nS
J9-J3 >20 dB	nS	6 nS	nS	7 nS
J9-J4 >20 dB	nS	6 nS	nS	6 nS
J9-J5 >20 dB	nS	3 nS	nS	7 nS
J9-J6 >20 dB	nS	8 nS	nS	6 nS
J9-J7 >20 dB	nS	3 nS	nS	5 nS
J9-J8 >20 dB	nS	2 nS	nS	3 nS
	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: Wiltron 37347A

PROGRAM MANAGER/SUPERVISOR APPROVAL: Helen Stilton DATED: 3/30/00

QA/QC APPROVAL: [illegible] DATED: 3/30/00

VICE PRESIDENT/GENERAL MANAGER APPROVAL: RA DATED: 3/30/00

FINAL TEST DATA

AMC MODEL NO: MSN-8DR-06-DEC-SP OPTIONS 10719, B05, LVT-COM
SERIAL NUMBER: 8MS9199

FORM: 011-SW-DTA 19/' '9

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

DATE: 3/29/00

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: AEROFLEX
JOB NO: 910193E
MODEL NO: MSN-8DR-06-DEC-SP
SERIAL NO: 8MS91199
CURRENT DRAW: + 5 VDC @ 24 mA; - 15VDC @ 74 mA

TECHNICIAN: RA
OPTION NO: 10719, B05, LVT-COM
SPECIFICATION:
FREQUENCY RANGE: 1.7-18.3 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
J9-J1 3.21 dB	13.94 dB	1.50 : 1	13.72 dB	1.52 : 1	dB	1. : 1
J9-J2 2.92 dB	12.29 dB	1.64 : 1	12.63 dB	1.61 : 1	dB	1. : 1
J9-J3 2.67 dB	11.28 dB	1.75 : 1	12.18 dB	1.65 : 1	dB	1. : 1
J9-J4 2.38 dB	12.37 dB	1.63 : 1	12.87 dB	1.59 : 1	dB	1. : 1
J9-J5 2.69 dB	11.31 dB	1.75 : 1	13.29 dB	1.55 : 1	dB	1. : 1
J9-J6 2.58 dB	11.58 dB	1.72 : 1	10.53 dB	1.85 : 1	dB	1. : 1
J9-J7 2.72 dB	11.42 dB	1.73 : 1	12.47 dB	1.62 : 1	dB	1. : 1
J9-J8 3.14 dB	11.45 dB	1.73 : 1	14.03 dB	1.50 : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J9-J1 >20 dB	nS	2 nS	nS	5 nS
J9-J2 >20 dB	nS	4 nS	nS	5 nS
J9-J3 >20 dB	nS	4 nS	nS	4 nS
J9-J4 >20 dB	nS	3 nS	nS	6 nS
J9-J5 >20 dB	nS	6 nS	nS	5 nS
J9-J6 >20 dB	nS	2 nS	nS	4 nS
J9-J7 >20 dB	nS	13 nS	nS	5 nS
J9-J8 >20 dB	nS	3 nS	nS	7 nS
	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: Wiltron 3734A

PROGRAM MANAGER/SUPERVISOR APPROVAL: Helen Stanton DATED: 3/30/00

QA/QC APPROVAL: [illegible] DATED: 3/30/00

VICE PRESIDENT/GENERAL MANAGER APPROVAL: RA DATED: 3/30/00

FINAL TEST DATA

AMC MODEL NO: MSN-8DR-06-DEC-SP OPTIONS 10719, B05, LVT-COM
SERIAL NUMBER: 8MS911100

FORM: 011-SW-DTA 19''99

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

DATE: 3/29/00

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: AEROFLEX
JOB NO: 910193E
MODEL NO: MSN-8DR-06-DEC-SP
SERIAL NO: 8MS911100
CURRENT DRAW: + 5 VDC @ 42 mA; - 15VDC @ 90 mA

TECHNICIAN: PA
OPTION NO: 10719, B05, LVT-COM
SPECIFICATION:
FREQUENCY RANGE: 1.7-18.3 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
J9-J1 3.09 dB	11.92 dB	1.68 : 1	11.26 dB	1.75 : 1	dB	1. : 1
J9-J2 2.54 dB	12.50 dB	1.62 : 1	10.95 dB	1.79 : 1	dB	1. : 1
J9-J3 2.35 dB	17.15 dB	1.32 : 1	11.34 dB	1.74 : 1	dB	1. : 1
J9-J4 2.29 dB	11.81 dB	1.69 : 1	11.24 dB	1.76 : 1	dB	1. : 1
J9-J5 2.51 dB	12.94 dB	1.58 : 1	10.47 dB	1.86 : 1	dB	1. : 1
J9-J6 2.50 dB	12.77 dB	1.60 : 1	11.07 dB	1.78 : 1	dB	1. : 1
J9-J7 2.50 dB	16.89 dB	1.33 : 1	10.76 dB	1.82 : 1	dB	1. : 1
J9-J8 3.00 dB	13.63 dB	1.53 : 1	9.87 dB	1.95 : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J9-J1 >20 dB	nS	5 nS	nS	5 nS
J9-J2 >20 dB	nS	5 nS	nS	5 nS
J9-J3 >20 dB	nS	6 nS	nS	5 nS
J9-J4 >20 dB	nS	3 nS	nS	13 nS
J9-J5 >20 dB	nS	3 nS	nS	8 nS
J9-J6 >20 dB	nS	4 nS	nS	11 nS
J9-J7 >20 dB	nS	2 nS	nS	6 nS
J9-J8 >20 dB	nS	2 nS	nS	3 nS
	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: Wiltron 37347A

PROGRAM MANAGER/SUPERVISOR APPROVAL: [signature] DATED: 3/30/00

QA/QC APPROVAL: [signature] DATED: 3/30/00

VICE PRESIDENT/GENERAL MANAGER APPROVAL: PA DATED: 3/30/00

FINAL TEST DATA

AMC MODEL NO: MSN-8DR-06-DEC-SP OPTIONS 10719, B05, LVT-COM
SERIAL NUMBER: 8MS911101

A !CAN MICROWAVE CORPORATION
731 GROVE RD., FREDERICK MD. 21704
TEL: 301-662-4700 FAX: 301-662-4938

DATE: 4-2-00

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: AEROFLEX
JOB NO: 910193E
MODEL NO: MSN-8DR-06-DEC-SP
SERIAL NO: 8MS911101
CURRENT DRAW: + 5 VDC @ 10 mA; - 15VDC @ 65 mA

TECHNICIAN: RA
OPTION NO: 10719, B05, LVT-COM
SPECIFICATION:
FREQUENCY RANGE: 1.7-18.3 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
J9-J1 4.31 dB	11.48 dB	1.73 : 1	12.24 dB	1.65 : 1	dB	1. : 1
J9-J2 2.70 dB	12.21 dB	1.65 : 1	10.91 dB	1.80 : 1	dB	1. : 1
J9-J3 2.37 dB	10.88 dB	1.80 : 1	11.05 dB	1.78 : 1	dB	1. : 1
J9-J4 2.22 dB	13.01 dB	1.58 : 1	10.57 dB	1.84 : 1	dB	1. : 1
J9-J5 2.18 dB	12.75 dB	1.60 : 1	11.26 dB	1.75 : 1	dB	1. : 1
J9-J6 2.53 dB	11.56 dB	1.72 : 1	12.14 dB	1.66 : 1	dB	1. : 1
J9-J7 2.29 dB	12.48 dB	1.62 : 1	13.44 dB	1.54 : 1	dB	1. : 1
J9-J8 3.02 dB	12.40 dB	1.63 : 1	13.40 dB	1.54 : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J9-J1 > 20 dB	nS	2 nS	nS	5 nS
J9-J2 > 20 dB	nS	2 nS	nS	2 nS
J9-J3 > 20 dB	nS	2 nS	nS	4 nS
J9-J4 > 20 dB	nS	2 nS	nS	2 nS
J9-J5 > 20 dB	nS	2 nS	nS	2 nS
J9-J6 > 20 dB	nS	2 nS	nS	2 nS
J9-J7 > 20 dB	nS	2 nS	nS	2 nS
J9-J8 > 20 dB	nS	5 nS	nS	8 nS
	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: Wiltron 37347A

PROGRAM MANAGER/SUPERVISOR APPROVAL: Helen [signature] DATED: 3/31/00

QA/QC APPROVAL: [signature] DATED: 4/2/00

VICE PRESIDENT/GENERAL MANAGER APPROVAL: [signature] DATED: 4/2/00