



**TEST REPORT**

**ON**

**0.1 GHz to 20 GHz**

**VERY HIGH ISOLATION**

**RADIAL, ABSORPTIVE**

**SP8T SOLID STATE RADIAL SWITCH**

**AMC MODEL No:**

**MSR-8DT-07-AKG-STANDARD**

**Option 0120**

**Serial Numbers: 8MS102001**

**DESIGNED**

**BY**

**A. K. Gorwara & R. Afable**

**TESTED**

**BY**

**T. Phung**

**REPORTED**

**BY**

**W. Steinhaus**

**March 9, 2004**

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**ISO9001 : 1994 CERTIFIED**

*Handwritten signatures and initials:*  
JW, SSC, JDT, WJ, DRH, LC, WBS, JRM

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## SP8T, ABSORPTIVE, RADIAL, PIN DIODE SWITCH AMC MODEL No: MSR-8DT-07-AKG-STANDARD OPTION 0120

### FEATURES:

- **RADIAL**
- **BROADBAND**
- **LOW INSERTION LOSS**
- **VERY HIGH ISOLATION**



### SPECIFICATIONS:

- FREQUENCY : 0.1 GHz TO 20 GHz
- INSERTION LOSS : 6 dB MAXIMUM
- ISOLATION : 110 dB MINIMUM
- VSWR : ABSORPTIVE IN/OUT: 2.0:1 MAXIMUM  
ABSORPTIVE OUT/OUT: 2.0:1 MAXIMUM
- SPEED : RISE: 300 nS TYPICAL, FALL: 300 nS TYPICAL
- RF POWER : +30 dBm (1 WATT)
- CONTROL : TTL LOGIC "0"=ON, "1"=OFF
- POWER SUPPLY : +5V @ 500 mA MAXIMUM  
-5V @ 100 mA MAXIMUM
- RF PHASE TRACKING : 0.2 DEGREES PER DEGREE C, ALL PORTS WITH  
RESPECT TO COMMON WITH TEMPERATURE
- SIZE : DIAMETER OF 1.500" X 0.400" (H)
- WEIGHT : 2.5 OUNCES TYPICAL

**PRODUCT FEATURE**

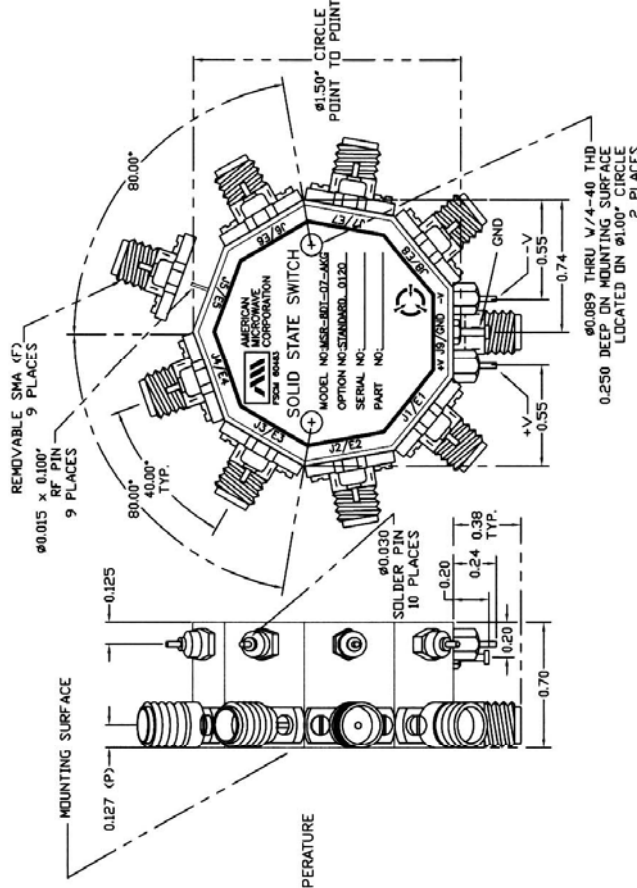
<p>REVISIONS</p> <p>DATE</p> <p>APPROVED</p>	<p>DESCRIPTION</p> <p>ORIGINAL JOB# 011246E</p>	<p>DATE</p> <p>01/28/01</p>	<p>APPROVED</p>
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**DESCRIPTION:**  
AMC MODEL MSR-8DT-07-AKG-STANDARD IS A SINGLE POLE EIGHT THROW, ABSORPTIVE/NON-REFLECTIVE SWITCH MODULE WITH LOW INSERTION LOSS, VERY HIGH ISOLATION AND WITH INTEGRAL TTL DRIVER DESIGNED FOR 0.1 GHz TO 20 GHz OPERATION.

**SPECIFICATIONS:**

- FREQUENCY: 0.1 GHz TO 20 GHz
- INSERTION LOSS: 6 dB MAXIMUM
- ISOLATION: 110 dB MINIMUM
- VSWR: ABSORPTIVE IN/OFF: 2.0:1 MAXIMUM  
ABSORPTIVE OUT/OFF: 2.0:1 MAXIMUM
- SPEED: RISE: 300ns TYPICAL  
FALL: 300ns TYPICAL
- RF POWER: +30dBm (1 WATT)
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: +5V @ 500 mA MAX.  
-12V @ 100 mA MAX.
- RF PHASE TRACKING: 0.2 DEGREES PER DEGREE C  
ALL PORTS WITH RESPECT TO COMMON WITH TEMPERATURE
- SIZE: Ø1.500 CIRCLE POINT TO POINT X 0.400 (H)
- WEIGHT: 2.5 OUNCES TYPICAL



REMOVABLE SMA (F) 9 PLACES  
Ø0.015 X 0.100" RF PIN 9 PLACES

80.00" TYP.

80.00" TYP.

Ø1.50" CIRCLE POINT TO POINT

SOLID STATE SWITCH

AMERICAN MICROWAVE CORPORATION  
FREDERICK, MARYLAND

MODEL NO: MSR-8DT-07-AKG  
OPTION NO: STANDARD 0120  
SERIAL NO:  
PART NO:

Ø0.089 THRU 1/4-40 THD  
0.250 DEEP IN MOUNTING SURFACE  
LOCATED ON Ø1.000" CIRCLE  
2 PLACES

0.127 (P)

0.70

0.20

0.24

0.38

TYP.

Ø0.030

SOLDER PIN 10 PLACES

0.20

0.55

0.74

GND

+V

-V

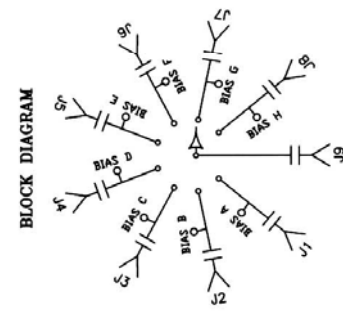
  

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: 0°C TO +55°C (OPERATING)  
-65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B CONDITION B
- SHOCK: MIL-STD-202F, METHOD 213B CONDITION B
- VIBRATION: MIL-STD-202F, METHOD 2040 CONDITION B
- ALTITUDE: MIL-STD-202F, METHOD 105C CONDITION B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D CONDITION A

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

**CONFIDENTIAL AND PROPRIETARY**

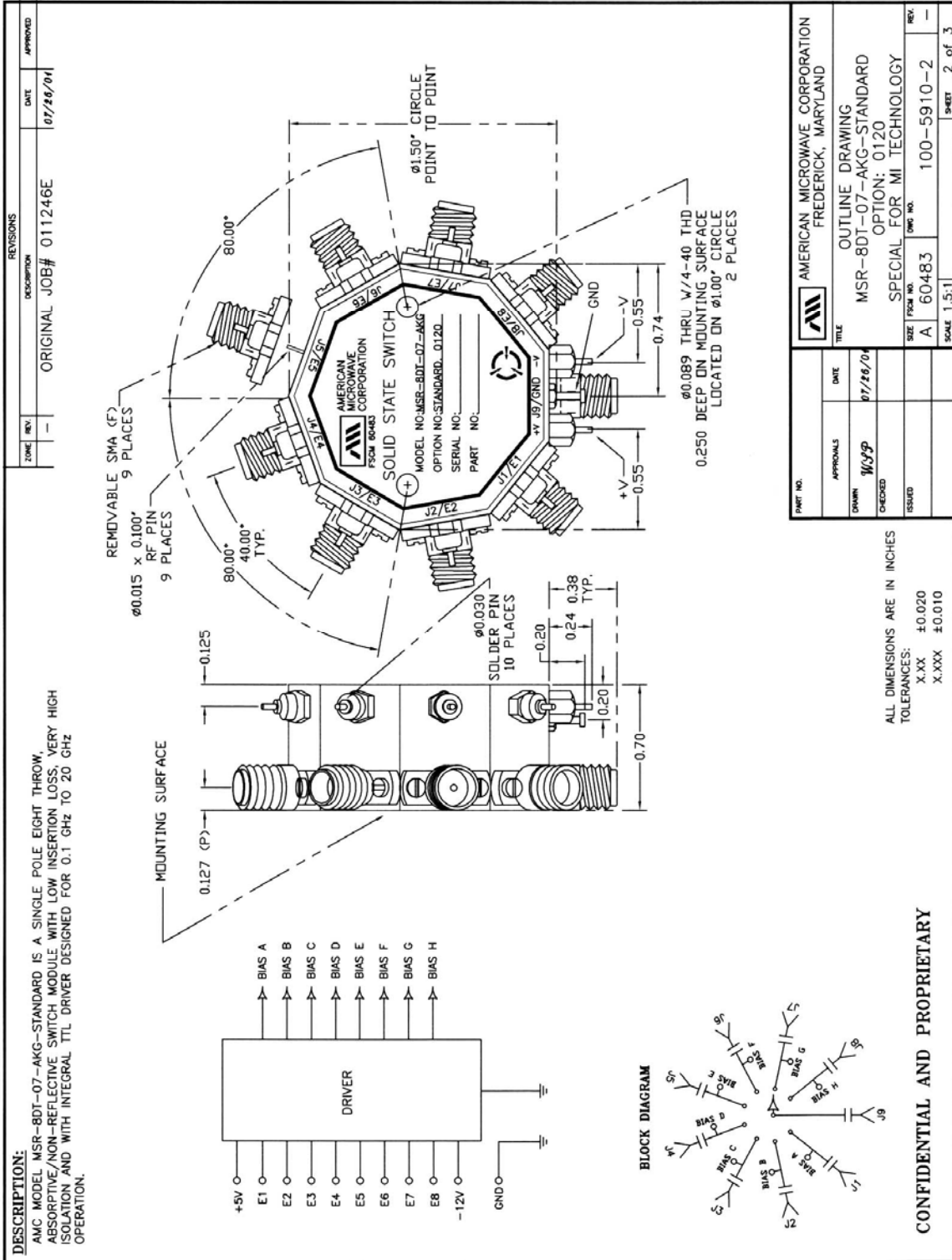


**BLOCK DIAGRAM**

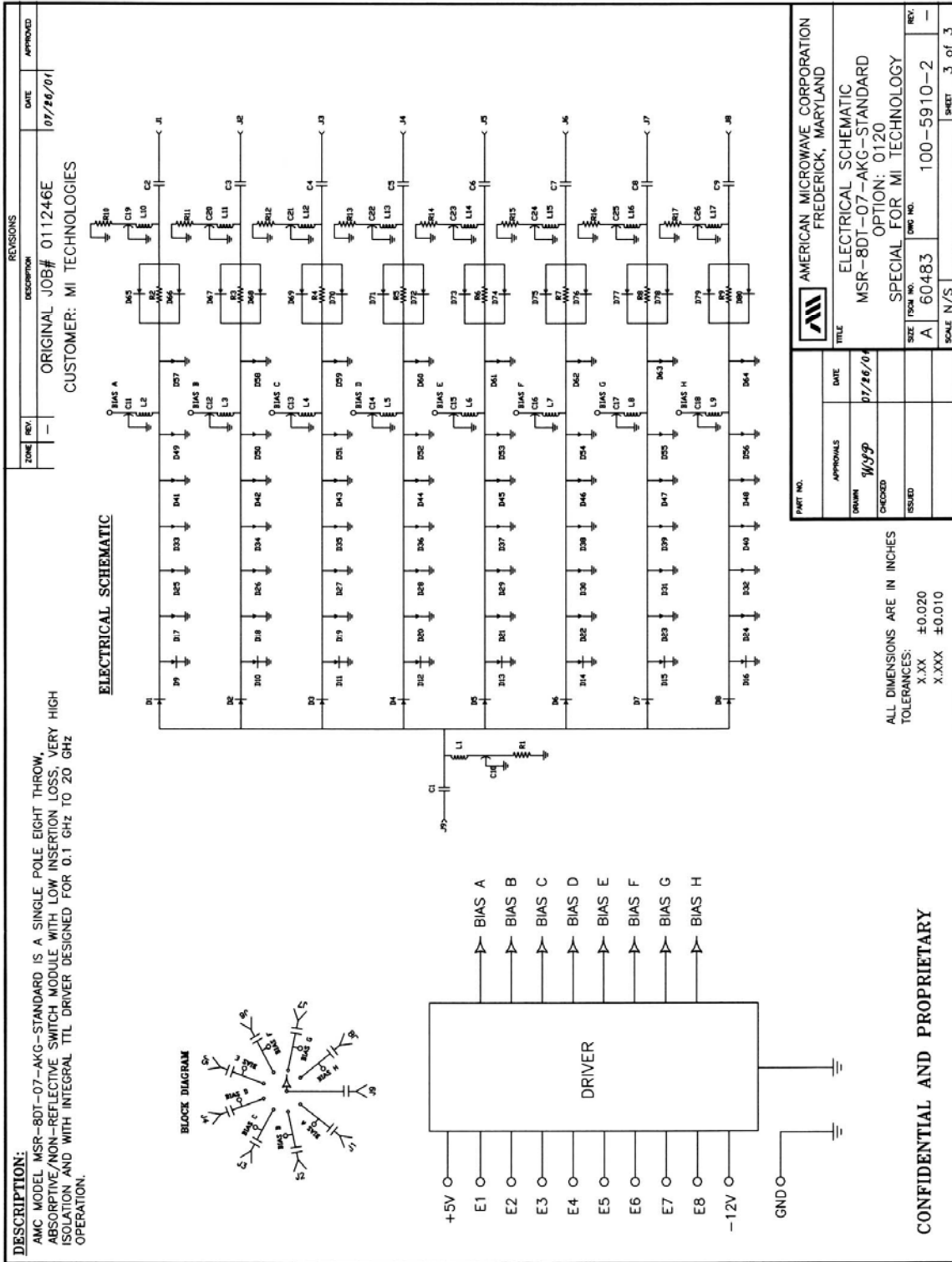
  

<p>APPROVALS</p> <p>DATE</p> <p>01/28/01</p>	<p>AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND</p>	<p>PRODUCT FEATURE</p> <p>MSR-8DT-07-AKG-STANDARD OPTION: 0120</p> <p>SPECIAL FOR MI TECHNOLOGY</p>	<p>SIZE FROM NO. A 60483</p> <p>DATE NO. 100-5910-2</p>	<p>SCALE 1.25:1</p> <p>SHEET 1 of 3</p>
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**OUTLINE DRAWING**



**FUNCTIONAL SCHEMATIC**



## FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

**MSR-8DT-07-AKG-STANDARD  
Option 0120**

Serial Number:

**8MS102001**

**FINAL TEST DATA**

AMC MODEL NO: MSR-8DT-07-AKG-STANDARD OPTION 0120, SERIAL NUMBER: 8MS102001

FORM: 100-5904



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: 3/30/01

CUSTOMER: MI TECHNOLOGIES      TECHNICIAN: T. PHUNG  
 JOB NO: 011246E  
 MODEL NO: MSR-8DT-07-AKG-STANDARD      OPTION NO: 0120  
 SERIAL NO: 8MS102001      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 260 mA; -12 VDC @ 60 mA      FREQUENCY RANGE: 0.1 GHz TO 20 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
J9-J1 6.08 dB	11.45 dB	1.73 : 1	10.54 dB	1.85 : 1	10.41 dB	1.86 : 1
J9-J2 5.13 dB	12.99 dB	1.58 : 1	12.00 dB	1.67 : 1	10.60 dB	1.84 : 1
J9-J3 5.26 dB	13.68 dB	1.52 : 1	12.72 dB	1.60 : 1	13.15 dB	1.56 : 1
J9-J4 5.09 dB	12.20 dB	1.65 : 1	10.10 dB	1.91 : 1	10.23 dB	1.89 : 1
J9-J5 5.23 dB	13.53 dB	1.53 : 1	11.97 dB	1.67 : 1	15.45 dB	1.41 : 1
J9-J6 5.01 dB	13.06 dB	1.57 : 1	11.28 dB	1.75 : 1	10.43 dB	1.86 : 1
J9-J7 5.75 dB	12.05 dB	1.67 : 1	11.49 dB	1.73 : 1	11.67 dB	1.71 : 1
J9-J8 5.73 dB	10.21 dB	1.89 : 1	10.71 dB	1.82 : 1	09.91 dB	1.94 : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J9-J1 > 110 dB	— nS	< 300 nS	— nS	< 300 nS
J9-J2 > 110 dB	— nS	< 300 nS	— nS	< 300 nS
J9-J3 > 110 dB	— nS	< 300 nS	— nS	< 300 nS
J9-J4 > 110 dB	— nS	< 300 nS	— nS	< 300 nS
J9-J5 > 110 dB	— nS	< 300 nS	— nS	< 300 nS
J9-J6 > 110 dB	— nS	< 300 nS	— nS	< 300 nS
J9-J7 > 110 dB	— nS	< 300 nS	— nS	< 300 nS
J9-J8 > 110 dB	— nS	< 300 nS	— nS	< 300 nS
	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: HP 8720D

QA/QC APPROVAL: Q4 Donald Harmon      DATED: 4/27/01