



TEST REPORT  
ON  
14 TO 22 GHz  
SINGLE POLE FIVE THROW  
ABSORPTIVE / NON-REFLECTIVE SWITCH MODULE

AMC MODEL No:  
**MSN-5DT-05-STANDARD**  
OPTION 1422, 12X, LVT

Serial Numbers: 5MS910062 AND 5MS911087

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**October 26, 2004**

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**ISO9001 : 2000 CERTIFIED**

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## SINGLE POLE FIVE THROW ABSORPTIVE / NON-REFLECTIVE SWITCH MODULE AMC MODEL No: MSN-5DT-05-STANDARD OPTION 1422, 12X, LVT

### FEATURES:

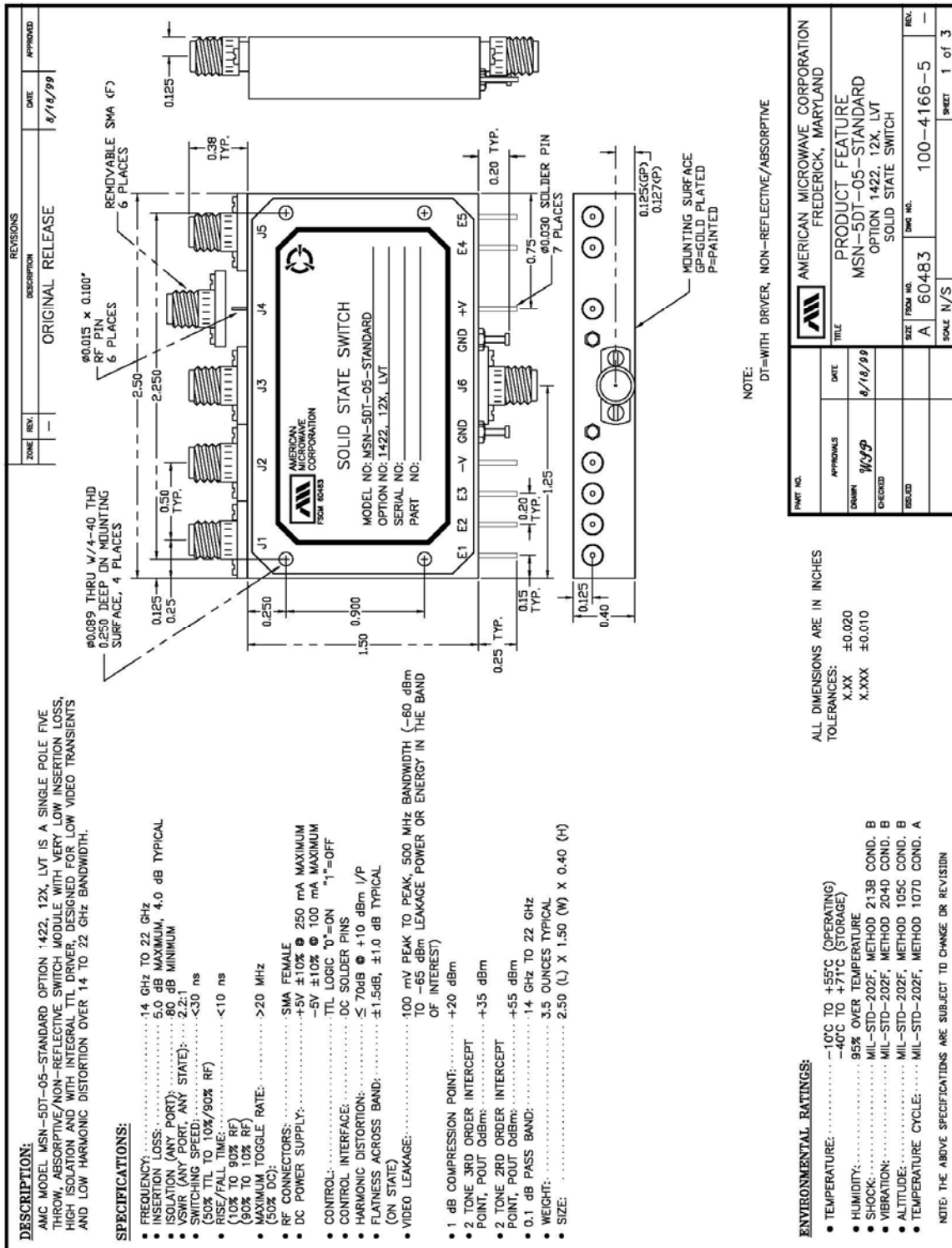
- **LOW INSERTION LOSS**
- **HIGH ISOLATION**
- **LOW VIDEO TRANSIENTS**
- **LOW HARMONIC DISTORTION**



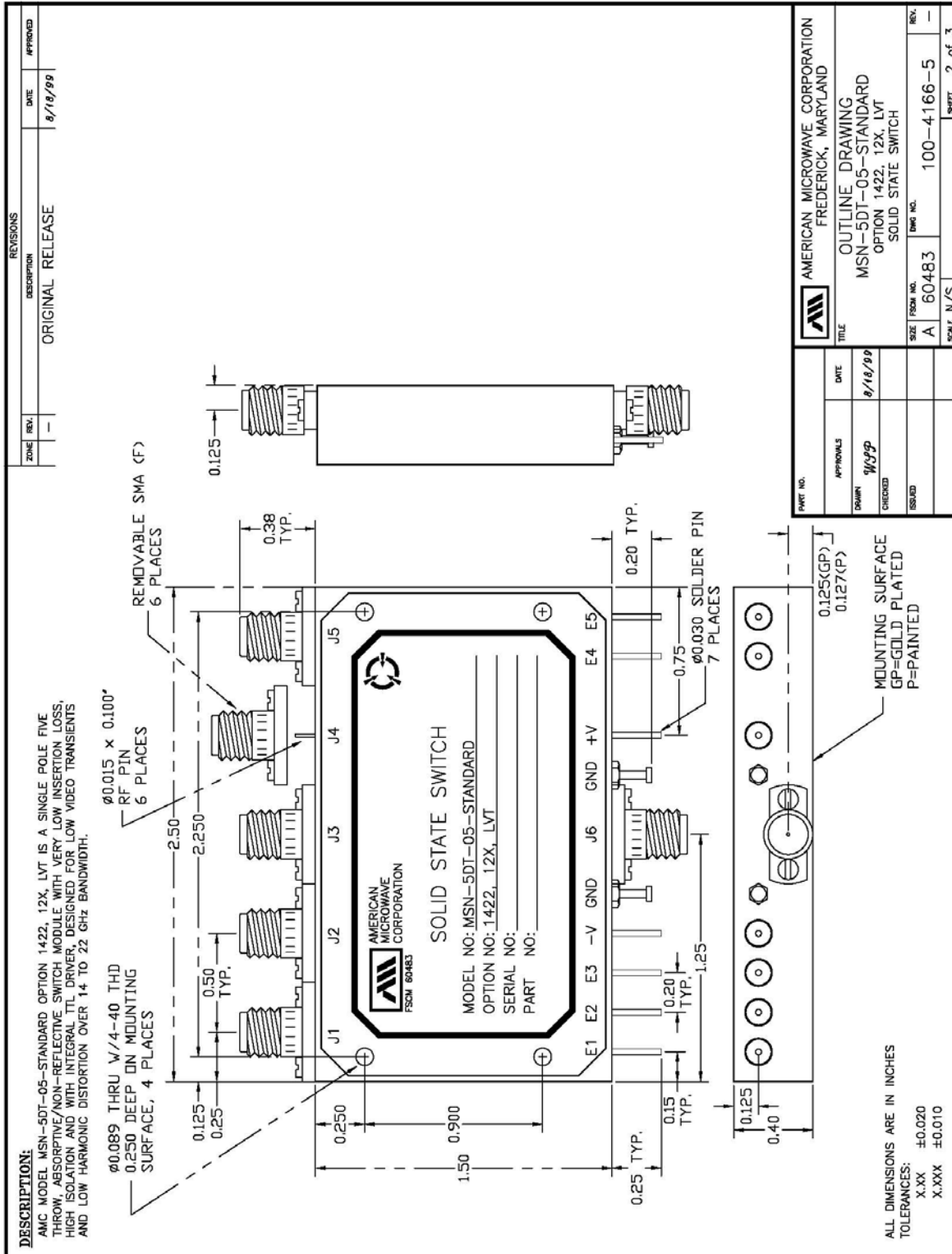
### SPECIFICATIONS:

- |   |   |   |
|---|---|---|
| ● FREQUENCY   | : | 14 TO 22 GHz  |
| ● INSERTION LOSS  | : | 5.0 dB MAXIMUM, 4.0 dB TYPICAL  |
| ● ISOLATION   | : | 80 dB MINIMUM   |
| ● VSWR  | : | 2.2:1   |
| ● SWITCHING SPEED   | : | < 30 ns   |
| ● RISE / FALL TIME  | : | < 10 ns   |
| ● MAXIMUM TOGGLE RATE   | : | > 20 ns   |
| ● RF CONNECTORS   | : | SMA FEMALE  |
| ● DC POWER SUPPLY   | : | +5 V $\pm 10\%$ @ 250 mA MAXIMUM<br>-5 V $\pm 10\%$ @ 100 mA MAXIMUM  |
| ● CONTROL   | : | TTL LOGIC "0"=ON , "1"=OFF  |
| ● CONTROL INTERFACE   | : | DC SOLDER PINS  |
| ● HARMONIC DISTORTION   | : | $\leq 70$ dB @ +10 dBm I/P  |
| ● FLATNESS ACROSS BAND (ON STATE)                                     | : | $\pm 1.5$ dB, $\pm 1.0$ dB TYPICAL  |
| ● VIDEO LEAKAGE   | : | 100 mV PEAK TO PEAK, 500 MHz BANDWIDTH (-60 dBm TO -65 dBm LEAKAGE POWER OR ENERGY IN THE BAND OF INTEREST) |
| ● 1 dB COMPRESSION POINT  | : | +20 dBm   |
| ● 2 TONE 3 <sup>RD</sup> ORDER INTERCEPT POINT, P <sub>OUT</sub> 0dBm | : | +35 dBm   |
| ● 2 TONE 2 <sup>ND</sup> ORDER INTERCEPT POINT, P <sub>OUT</sub> 0dBm | : | +55 dBm   |
| ● 0.1 dB PASS BAND  | : | 14 GHz TO 22 GHz  |

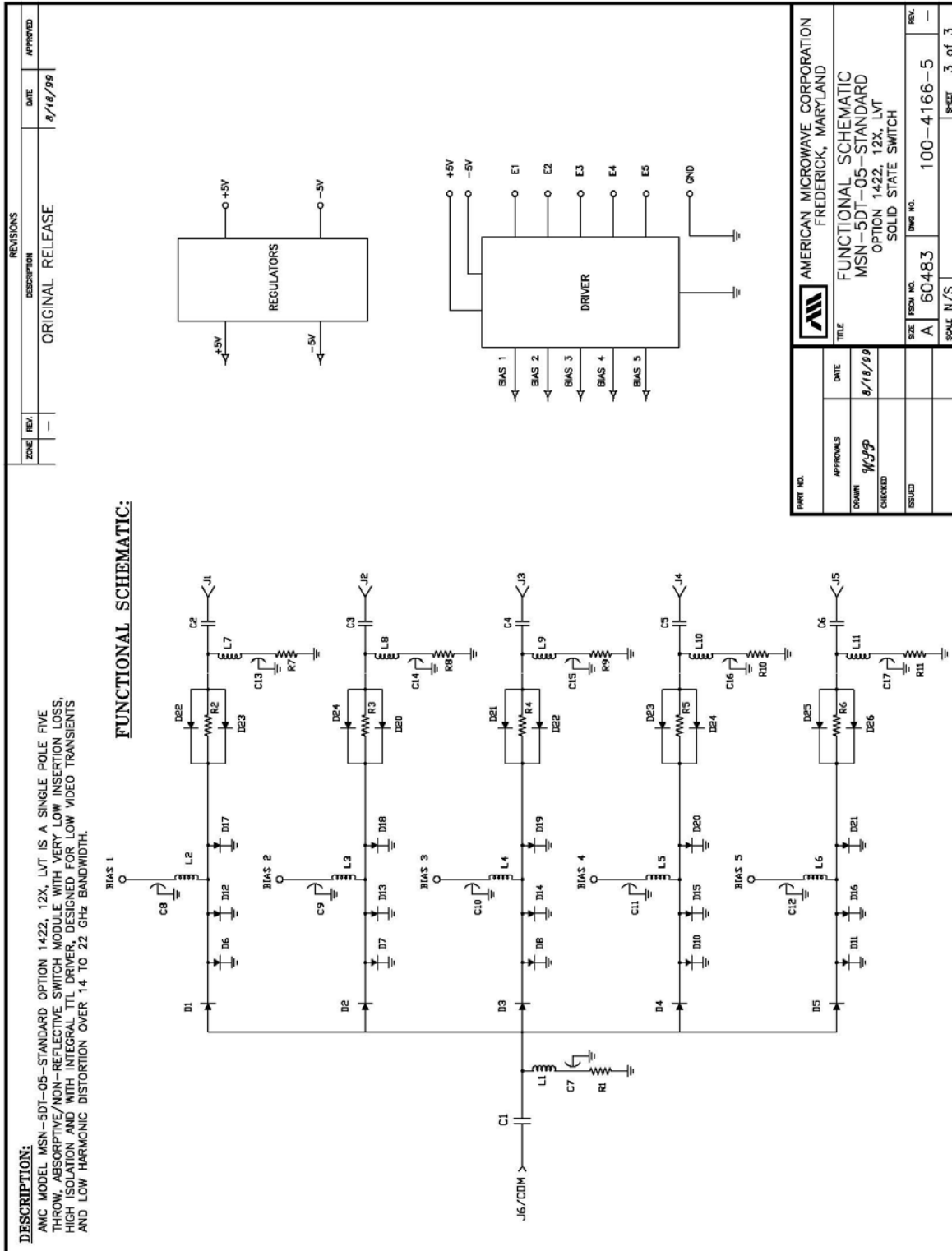
## PRODUCT FEATURE



**OUTLINE DRAWING**



## FUNCTIONAL SCHEMATIC



## FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

**MSN-5DT-05-STANDARD**  
**OPTION 1422, 12X, LVT**

Serial Numbers:

**5MS910062 AND 5MS911087**







## FINAL TEST DATA

AMC MODEL NO: MSN-5DT-05-STANDARD OPTION 1422, 12X, LVT SERIAL NUMBER: 5MS911087

FORM: SW-DTA 12/14/99



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

DATE: 1/29/00

### FINAL TEST DATA ON MICROWAVE SWITCH

CUSTOMER: TELEMUS TECHNICIAN: PA  
 JOB NO: 907134E-4  
 MODEL NO: MSN-5DT-05-STD OPTION NO: 1422, 12X, LVT  
 SERIAL NO: 5MS911087 SPECIFICATION:  
 CURRENT DRAW: + 5VDC @ 90 mA; - 5 VDC @ 40 mA FREQUENCY RANGE: 14 GHz TO 22 GHz

| INSERTION LOSS<br>(WORST CASE) | RETURN LOSS (WORST CASE) |            |                 |                   |                  |                    |
|--------------------------------|--------------------------|------------|-----------------|-------------------|------------------|--------------------|
|                                | INPUT dB                 | INPUT VSWR | OUTPUT ON<br>dB | OUTPUT ON<br>VSWR | OUTPUT OFF<br>dB | OUTPUT OFF<br>VSWR |
| J6-J1 4.53 dB                  | 12.98 dB                 | 1.58 : 1   | 12.99 dB        | 1.58 : 1          | 10.24 dB         | 1.89 : 1           |
| J6-J2 4.85 dB                  | 8.62 dB                  | 2.18 : 1   | 9.04 dB         | 2.09 : 1          | 9.92 dB          | 1.94 : 1           |
| J6-J3 4.77 dB                  | 10.19 dB                 | 1.90 : 1   | 9.81 dB         | 1.96 : 1          | 14.07 dB         | 1.49 : 1           |
| J6-J4 4.53 dB                  | 9.61 dB                  | 1.99 : 1   | 8.99 dB         | 2.10 : 1          | 9.40 dB          | 2.03 : 1           |
| J6-J5 4.30 dB                  | 11.48 dB                 | 1.73 : 1   | 11.10 dB        | 1.77 : 1          | 9.18 dB          | 2.07 : 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 | 13 nS           | 1 nS      | 15 nS     | 7 nS      |
| J6-J2 60 dB | 12 nS           | 1 nS      | 15 nS     | 7 nS      |
| J6-J3 60 dB | 11 nS           | 1 nS      | 15 nS     | 7 nS      |
| J6-J4 60 dB | 13 nS           | 3 nS      | 18 nS     | 9 nS      |
| J6-J5 60 dB | 11 nS           | 1 nS      | 14 nS     | 6 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 8722D

PROGRAM MANAGER/SUPERVISOR APPROVAL: PA DATED: 1/29/00

QA/QC APPROVAL: [Signature] DATED: JAN 31 2000

VICE PRESIDENT/GENERAL MANAGER APPROVAL: [Signature] DATED: 1/29/00