



TEST REPORT
ON
2.0 TO 2.5 GHz
SINGLE POLE SIX THROW
HIGH RELIABILITY SWITCH MODULE

AMC MODEL No:
SW-2025-6D

Serial Number: 6MS004024

DESIGNED
BY
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TESTED
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REPORTED
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November 3, 2004

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ISO9001 : 2000 CERTIFIED

Handwritten notes:
XO NI SKM DRH PW
EST LC-S/K M PA
D

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SINGLE POLE SIX THROW SWITCH MODULE AMC MODEL No: SW-2025-6D

FEATURES:

- **2.0 TO 2.5 GHz FREQUENCY RANGE**
- **DESIGNED FOR HIGH RELIABILITY APPLICATIONS**
- **INTEGRAL TTL DRIVER**

SPECIFICATIONS:

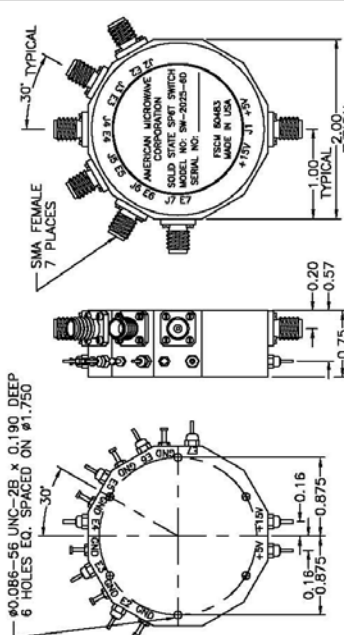
- **FREQUENCY** : 2.0 TO 2.5 GHz
- **INSERTION LOSS** : 1.5 dB MAXIMUM
- **INSERTION LOSS BALANCE** : 0.4 dB MAXIMUM
- **INSERTION LOSS VARIATION OVER TEMP** : ± 0.1 dB MAXIMUM OVER OPERATING TEMP RANGE
- **INSERTION LOSS VARIATION OVER FREQ** : ± 0.1 dB MAXIMUM
- **ISOLATION** : 40 dB MINIMUM
- **VSWR (ON)** : 1.4:1
- **RF POWER** : +30 dBm CW MAXIMUM
- **SWITCHING TIME**
 - RISE : 40 nS MAXIMUM
 - FALL : 40 nS MAXIMUM
 - ON : 400 nS MAXIMUM
 - OFF : 400 nS MAXIMUM
- **SETTLING TIME**
 - ON : 0.7 μ S MAXIMUM
 - OFF : 1.0 μ S MAXIMUM
- **VOLTAGE TRANSIENTS** : 1 V_{pp} MAXIMUM ACROSS 50 Ω LOAD
STANDARD TTL COMPATIBLE
- **CONTROLS** : 6 INDIVIDUAL CONTROLS
LOGIC "0"=INSERTION LOSS
LOGIC "1"=ISOLATION (SEE TRUTH TABLE)
- **HARMONIC DISTORTION PRODUCTS** : 65 dBc MINIMUM

- SPURIOUS SIGNALS / SPECTRAL PURITY
 - (AM/PM SIDEBANDS IN OPERATING BAND 2 TO 2.5 GHz) : 100 dB BELOW THE OUTPUT SIGNAL LEVEL
 - IN NON OPERATING BAND (100 MHz TO 2 GHz AND 2.5 TO 10 GHz) : 65 dB BELOW THE OUTPUT SIGNAL LEVEL
- RF LEAKAGE
 - RADIATIVE : -90 dBm/SQUARE FOOT, 1 FOOT DISTANCE APPROXIMATELY
 - CONDUCTIVE : -90 dBm ON SUPPLY AND CONTROL LINES
- RADIATION SUSCEPTIBILITY : ≥ -76 dBm FOR RF INTERFERENCE FIELD OF -20 dBm/SQUARE FOOT
- CONDUCTED SUSCEPTIBILITY : ≥ -76 dBm FOR RF INTERFERENCE LEVEL OF -20 dBm ON DC POWER LINES
- CONDUCTED SUSCEPTIBILITY (INTERMODULATION) : ≥ -85 dBm FOR -20 dBm RF INTERFERENCE LEVEL ON DC POWER LINES
- POWER SUPPLY : +5 VDC ± 5% @ 120 mA MAXIMUM
+15 VDC ± 5% @ 40 mA MAXIMUM
- CONNECTORS
 - RF INPUT / OUTPUT : SMA FEMALE
 - POWER : SOLDER PIN
 - CONTROL : SOLDER PIN
- SIZE : 2 " DIAMETER x 0.75" THICK

PRODUCT FEATURE

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A		ORIGINAL RELEASE, JOB # 10358-1E	11/22/92	

MECHANICAL OUTLINE



MECHANICAL OUTLINE
 60.086-56 UNC-2B x 0.190 DEEP
 6 HOLES EQ. SPACED ON #1.750

NOTES:

- 1) DIMENSIONS ARE IN INCHES
- 2) TOLERANCES: X.XX ±0.020
X.XXX ±0.010
APPROX. 6 OZ
- 3) WEIGHT:
- 4) MATERIALS PROCESS AND PARTS TO: MIL-T-19500, MIL-N-38510
CLASS B, MIL-F-18870 JANITX
TYPE, ER COMPONENTS
- 5) REQUIREMENT MIL-STD-454
(5 AND 9), MIL-F-18870

DESCRIPTION

AMC MODEL SW-2025-6D IS A REFLECTIVE SP6T SWITCH MODULE WITH INTEGRAL TTL DRIVER, DESIGNED FOR HIGH RELIABILITY APPLICATIONS SUCH AS SHIPBOARD RADARS WHERE SWITCHING SPEED, ISOLATION AND SPECTRAL PURITY ARE OF EXTREME IMPORTANCE.

SPECIFICATIONS

- FREQUENCY RANGE 2.0-2.5 GHz MINIMUM
- INSERTION LOSS 1.5 dB MAXIMUM
- INSERTION LOSS BALANCE 0.4 dB MAXIMUM
- INSERTION LOSS VARIATION OVER TEMPERATURE ±0.1 dB MAXIMUM OVER OPERATING TEMPERATURE RANGE
- INSERTION LOSS VARIATION OVER FREQUENCY ±0.1 dB MAXIMUM
- ISOLATION 40 dB MINIMUM
- VSWR (ON) 1.4:1 MAXIMUM
- RF POWER +30 dBm CW MAXIMUM
- SWITCHING TIME
- RISE (10% RF TO 90% RF) 40 ns MAXIMUM
- FALL (90% RF TO 10% RF) 40 ns MAXIMUM
- ON (50% TTL TO 90% RF) 400 ns MAXIMUM
- OFF (50% TTL TO 10% RF) 400 ns MAXIMUM
- SETTling TIME
- ON (90% TO WITHIN ±0.25 dB OF INSERTION LOSS) 0.7 μs MAXIMUM
- OFF (10% TO MINIMUM ISOLATION REQUIREMENT) 1.0 μs MAXIMUM
- VOLTAGE TRANSIENTS 1 Vpp MAXIMUM ACROSS 50Ω LOAD
- CONTROLS STANDARD TTL COMPATIBLE
- 6 INDIVIDUAL CONTROLS
- LOGIC "0" = INSERTION LOSS
- LOGIC "1" = ISOLATION
- (SEE TRUTH TABLE, ON SHEET 2 OF 2)
- HARMONIC DISTORTION PRODUCTS 65 dBc MINIMUM
- SPURIOUS SIGNALS/SPECTRAL PURITY (AM/PM SIDEBANDS IN OPERATING BAND 2-2.5 GHz) 100 dB BELOW THE OUTPUT SIGNAL LEVEL
- IN NON OPERATING BAND (100 MHz-2 GHz & 2.5 TO 10 GHz) 65 dB BELOW THE OUTPUT SIGNAL LEVEL
- RF LEAKAGE
- RADIATIVE -90 dBm/SQUARE FOOT, 1 FOOT DISTANCE APPROXIMATELY
- CONDUCTIVE -90 dBm ON SUPPLY AND CONTROL LINES.
- RADIATION SUSCEPTIBILITY ≥-76 dBm FOR RF INTERFERENCE FIELD OF -20 dBm/SQUARE FOOT
- CONDUCTED SUSCEPTIBILITY ≥-76 dBm FOR RF INTERFERENCE LEVEL OF -20 dBm ON DC POWER LINES
- CONDUCTED SUSCEPTIBILITY (INTERMODULATION) ≥-85 dBm FOR -20 dBm RF INTERFERENCE LEVEL ON DC POWER LINES
- POWER SUPPLY +5VDC ±5% @ 120 mA MAXIMUM
- +15VDC ±5% @ 40 mA MAXIMUM (OVER VOLTAGE PROTECTED)
- CONNECTORS
- RF INPUT/OUTPUT SMA FEMALE
- POWER SOLDER PIN
- CONTROL SOLDER PIN
- SIZE 2" DIAMETER x 0.75" THICK

ENVIRONMENTAL RATINGS

- TEMPERATURE 0°C TO +65°C (OPERATING)
-55°C TO +70°C (STORAGE)
- HUMIDITY MIL-STD-202, METHOD 103, CONDITION B
- SHOCK MIL-S-901 GRADE A, CLASS I DR II
- VIBRATION MIL-S-167, TYPE 1 VIBRATION, 0.1G SINUSOIDAL 25 Hz TO 2000 Hz
- MTBF 1 x 10⁶ HOURS @ +50°C OPERATION

ENVIRONMENTAL STRESS SCREENING (ESS)

- TEMPERATURE CYCLES 10 CYCLES, 1/2 HOUR SOAK MINUTE, -55°C TO +85°C
- TEMPERATURE SHOCK 4 CYCLES, -55°C TO +85°C
- VIBRATION 10 G @ 60 Hz FOR 1 MINUTE, 3 AXIS
- BURN IN (OPERATING) MIL-STD-883 METHOD 1015.4 TEST CONDITION B, 160 HOURS @ 125°C JUNCTION TEMPERATURE (105°C AMBIENT)
- ESS (NEXT HIGHER ASSEMBLY) THERMAL 5 CYCLES, 5°C PER MINUTE, -55°C TO +55°C, 20 TO 2000 Hz AND 6 G RMS, 10 MINUTES PER AXIS AT +55°C/-55°C
- RANDOM VIBRATION 20 TO 2000 Hz AND 6 G RMS, 10 MINUTES PER AXIS AT +55°C/-55°C

APPROVALS

DATE: 11/22/92

CHECKED: W/gpp

PRODUCT FEATURE

SW-2025-6D
(E-BAND)

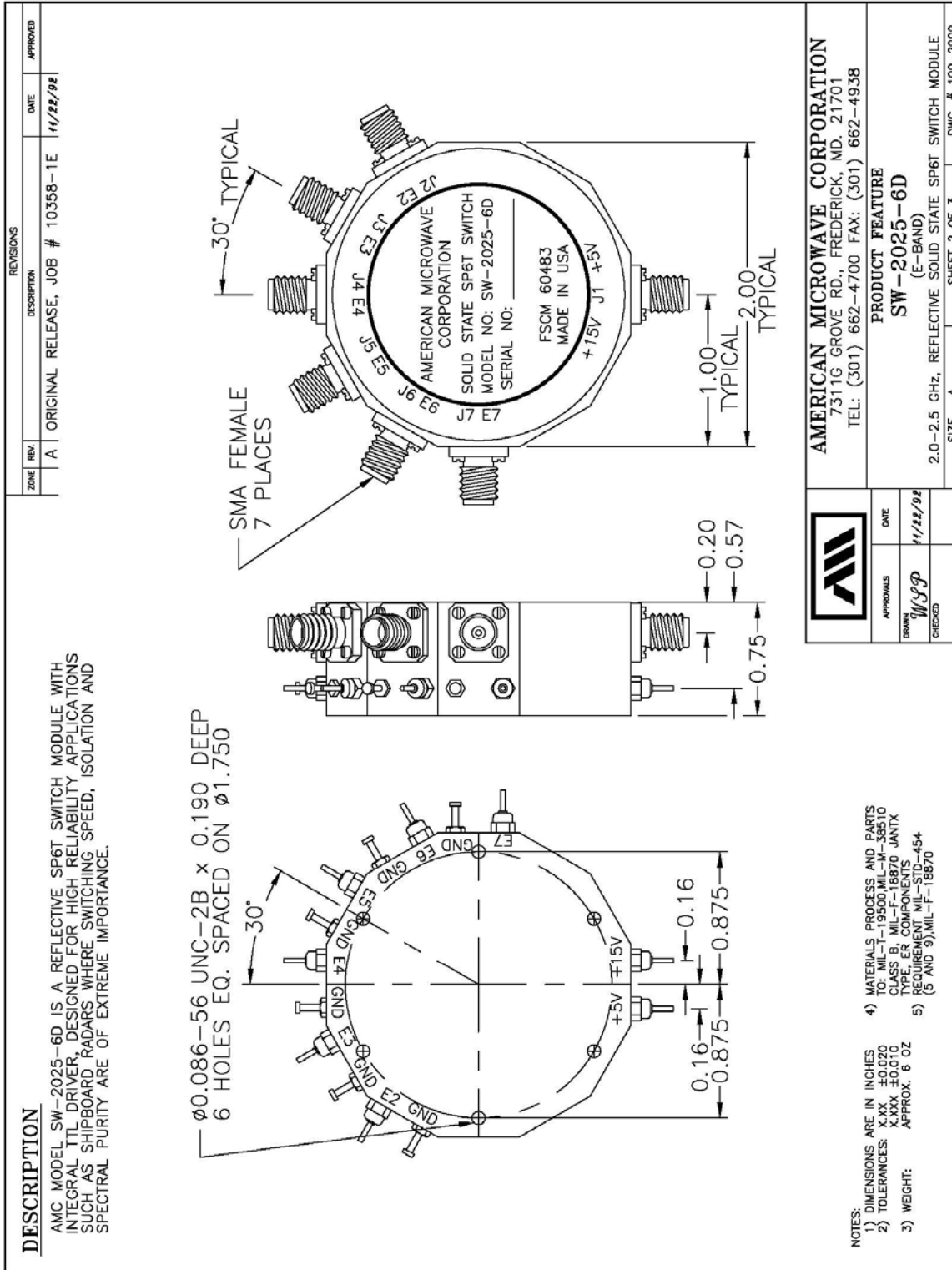
2.0-2.5 GHz, REFLECTIVE SOLID STATE SP6T SWITCH MODULE

SIZE: A SHEET 1 OF 3 DWG. # 100-2909

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OUTLINE DRAWING



FUNCTIONAL SCHEMATIC

