

## DESCRIPTION

AMC MODEL SW-0910-2D IS A REFLECTIVE SPDT 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 ..... 8890 - 10310 MHz MINIMUM
- INSERTION LOSS ..... 1.1 ±0.3 dB @ +25° ±5°C
- INSERTION LOSS BALANCE ..... 0.2 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 ..... +20 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) ..... 1.2 μs MAXIMUM
- VOLTAGE TRANSIENTS ..... 1 Vpp MAXIMUM ACROSS 50Ω LOAD
- CONTROLS ..... STANDARD TTL COMPATIBLE  
2 INDIVIDUAL CONTROLS  
LOGIC "0" = INSERTION LOSS  
LOGIC "1" = ISOLATION  
(SEE TRUTH TABLE)
- HARMONIC DISTORTION PRODUCTS ..... 56 dBc MINIMUM
- SPURIOUS SIGNALS/SPECTRAL PURITY  
(AM/PM SIDEBANDS IN OPERATING BAND) ..... 80 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) ..... ≥ -86 dBm FOR -20 dBm RF  
INTERFERENCE LEVEL ON DC POWER LINES
- POWER SUPPLY ..... +5VDC ±5% @ 90 mA MAXIMUM  
+15VDC ±5% @ 30 mA MAXIMUM  
(OVER VOLTAGE PROTECTED)
- CONNECTORS
  - RF INPUT/OUTPUT ..... SMA FEMALE
  - POWER ..... SOLDER PIN
  - CONTROL ..... SMA FEMALE
- SIZE ..... 1.85" x 1.41" x 0.50"

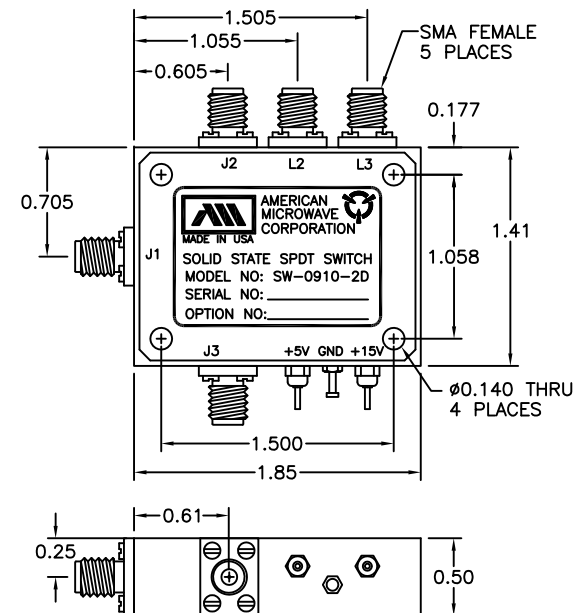
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ORIGINAL RELEASE, JOB # 10358-2E	11/22/92	
	B	SEE ECN# 12-035	7/16/12	RA

## MECHANICAL OUTLINE

TRUTH TABLE		
L3	L2	RF PATH ON
1	0	J1-J2
0	1	J1-J3

### NOTES:

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



## 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 OR II
- VIBRATION ..... MIL-S-167, TYPE 1 VIBRATION, 0.1G SINUSOIDAL 25 Hz TO 2000 Hz
- MTBF ..... 1 x 10<sup>6</sup> 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.
  - RANDOM VIBRATION ..... 20 TO 2000 Hz AND 6 G RMS, 10 MINUTES PER AXIS AT +55°C/-55°C.



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APPROVALS	DATE
DRAWN <i>WJP</i>	11/22/92
CHECKED	

### PRODUCT FEATURE

**SW-0910-2D**

(I-BAND)

9-10 GHz, REFLECTIVE SOLID STATE SPDT SWITCH MODULE

SIZE A SHEET 1 OF 2 DWG. # 100-2910