

DESCRIPTION

AMC MODEL SW-4045-5DT IS AN ABSORPTIVE SP5T 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 400-450 MHz MINIMUM
- INSERTION LOSS -1.4 Db MAXIMUM
- 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 90 dB MINIMUM
- VSWR (ON/OFF) 1.3:1 MAXIMUM
- RF POWER +16 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) 300 ns MAXIMUM
 - OFF (50% TTL TO 10% RF) 300 ns MAXIMUM
- SETTLING TIME
 - ON (90% TO WITHIN ± 0.25 dB OF INSERTION LOSS) 0.7 μ s MAXIMUM
 - OFF (10% TO MINIMUM ISOLATION REQUIREMENT) 1.0 μ s MAXIMUM
- VOLTAGE TRANSIENTS 1 Vpp MAXIMUM ACROSS 50 Ω LOAD
- CONTROLS STANDARD TTL COMPATIBLE
 - 5 INDIVIDUAL CONTROLS
 - LOGIC "0" = INSERTION LOSS
 - LOGIC "1" = ISOLATION (SEE TRUTH TABLE)
- HARMONIC DISTORTION PRODUCTS 50 dBc MINIMUM
- SPURIOUS SIGNALS/SPECTRAL PURITY (AM/PM SIDEBANDS IN OPERATING BAND) 100 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 $\pm 5\%$ @ 90 mA MAXIMUM
+15VDC $\pm 5\%$ @ 80 mA MAXIMUM (OVER VOLTAGE PROTECTED)
- CONNECTORS
 - RF INPUT/OUTPUT SMA FEMALE
 - POWER SOLDER PIN
 - CONTROL SOLDER PIN
- SIZE 2.69" x 1.69" x 0.68"

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ORIGINAL RELEASE, JOB # 10358-5E	11/22/92	<i>[Signature]</i>

MECHANICAL OUTLINE

TRUTH TABLE					
E6	E5	E4	E3	E2	RF PATH ON
1	1	1	1	0	J1-J2
1	1	1	0	1	J1-J3
1	1	0	1	1	J1-J4
1	0	1	1	1	J1-J5
0	1	1	1	1	J1-J6

NOTES:

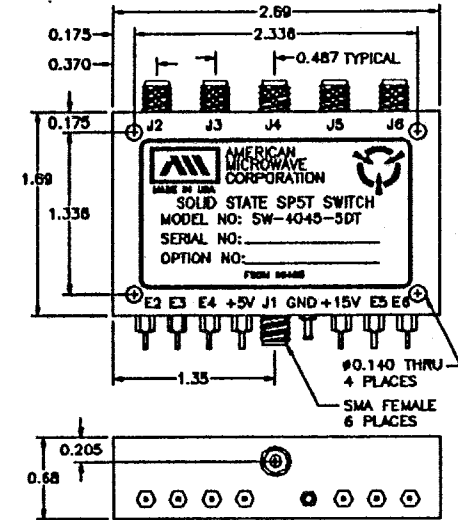
- 1) DIMENSIONS ARE IN INCHES
- 2) TOLERANCES: X.XX ± 0.020
X.XXX ± 0.010
- 3) WEIGHT: APPROX. 4 OZ
- 4) MATERIALS PROCESS AND PARTS TO: MIL-T-19500, MIL-M-38510 CLASS B, MIL-F-18870 JANXX TYPE, ER COMPONENTS
- 5) REQUIREMENT MIL-STD-454 (5 AND 9), MIL-F-18870

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 SINUSODAL 25 Hz TO 2000 Hz
- MTBF 1 x 10⁹ 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
<i>[Signature]</i>	11/22/92
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PRODUCT FEATURE		
SW-4045-5DT (B-BAND)		
400-450 MHz, NON-REFLECTIVE SOLID STATE SP5T SWITCH MODULE		
SIZE A	SHEET 1 OF 2	DWG. # 100-2911