



TEST REPORT

ON

1.2 TO 1.4 GHz
(10 MHz TO 2.0 GHz AVAILABLE)

SP4T

ABSORPTIVE

HERMETICALLY SEALED

MIL-STD-883 QUALIFIED

38-PIN SUB-MINIATURE, SP4T SOLID STATE SWITCH

AMC MODEL No:
HMSN-4DT-G267450

with Option: 1G3F

Serial Numbers: 4MS303031 & 4MS303032

DESIGNED

BY

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DEVELOPED & TESTED

BY

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REPORT

BY

P. WOOD

AUGUST 13, 2003

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**1.2 TO 1.4 GHz, 60dB, 38-PIN, FLAT-PACK, SP4T,
SOLID STATE, HERMETICALLY SEALED SWITCH
AMC MODEL No: HMSN-4DT-G267450**

KEY FEATURES:

- **1.2 TO 1.4 GHz FREQUENCY RANGE
(10 MHz TO 2.0 GHz AVAILABLE)**
- **SUB-MINIATURE FLAT-PACK**
- **HERMETICALLY SEALED**
- **60 dB ISOLATION**
- **MIL-STD-883**

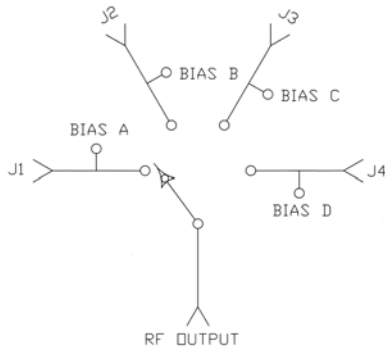


SPECIFICATIONS:

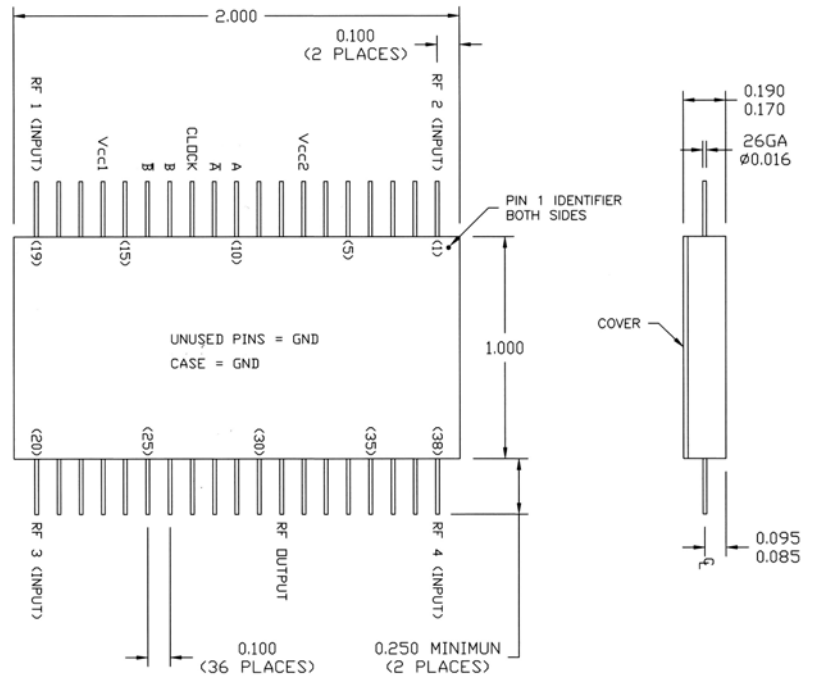
- **FREQUENCY RANGE : 1.2 TO 1.4 GHz
(10 MHz TO 2.0 GHz AVAILABLE)**
- **INSERTION LOSS : 2.1 dB MAX.**
- **ISOLATION : 60 dB MAX.**
- **VSWR :**
 - **ABSORPTIVE IN/OUT : 1.5:1 MAX.**
 - **ABSORPTIVE OUT/OFF : 1.5:1 MAX.**
- **RF INPUT POWER : +16 dBm (At All Ports Simultaneously)**
- **SWITCHING SPEED :**
 - **DELAY OFF : 300 nS MAX.**
 - **DELAY ON : 300 nS MAX.**
- **OPERATING TEMPERATURE : -55° to +85°C**
- **STORAGE TEMPERATURE : -65° to +150°C**
- **DC POWER SUPPLY : ±5 vdc @ +140mA & -40mA**
- **SIZE : 2.0" X 1.0" X 0.19"**



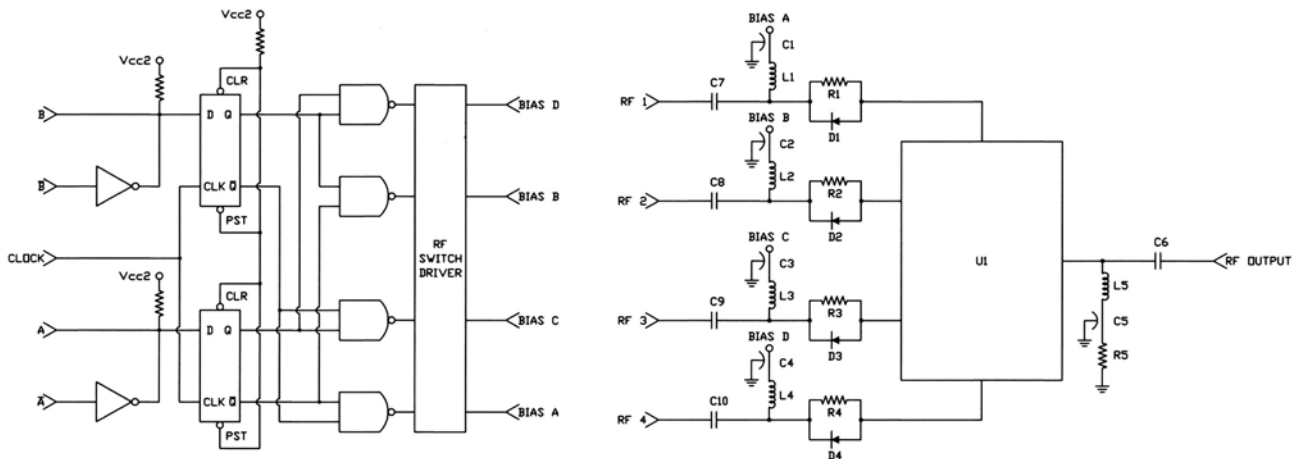
BLOCK DIAGRAM



MECHANICAL OUTLINE



FUNCTIONAL SCHEMATIC



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ISO9001:1994 CERTIFIED



PRODUCT FEATURE

ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE JOB# 206092E	04/19/02	

DESCRIPTION
 AMC MODEL HMSN-4DT-G267450 OPTION: 1G3F IS A SINGLE POLE FOUR THROW, NON-REFLECTIVE, ABSORPTIVE, MICROCIRCUIT, HYBRID SWITCH WITH ENCODER/DRIVER ASSEMBLY IN A PLAT PACK, MANUFACTURED FROM 1.2 GHz TO 1.4 GHz.

SPECIFICATIONS:

- FREQUENCY: 1.2 GHz TO 1.4 GHz
- INSERTION LOSS: ABSORPTIVE: 2.1 dB MAXIMUM
- ISOLATION: 60 dB
- VSWR: ABSORPTIVE IN/OUT: 1.5:1
 ABSORPTIVE OUT/OFF: 1.5:1
- SPEED: DELAY ON: 300ns
 DELAY OFF: 300ns
- RF POWER: +16 dBm @ RF2, RF3 AND RF4
 SIMULTANEOUSLY
- CONTROL: TTL LOGIC (SEE LOGIC TABLE)
- POWER SUPPLY: -5 to +0.3V @ 1.40 mA MAX.
 -5 to +0.3V @ 4.0 mA MAX.
- SIZE: 2.00" (L) x 1.00" (W) x 0.19" (H)

TRUTH TABLE		RF OUTPUT
A	B	CLOCK
L	L	RF 1
L	L	RF 2
L	L	RF 3
L	L	RF 4
L	H	RF 1
L	H	RF 2
L	H	RF 3
L	H	RF 4
H	L	RF 1
H	L	RF 2
H	L	RF 3
H	L	RF 4

BLOCK DIAGRAM

ALL DIMENSIONS ARE IN INCHES
 TOLERANCES: X.XXX ±0.020
 X.XXX ±0.010

ENVIRONMENTAL RATINGS:

- TEMPERATURE: -55°C TO +85°C (OPERATING)
 -65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

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TRUTH TABLE					
A	B	\bar{A}	\bar{B}	CLOCK	RF OUTPUT
L	L	L	L	↑	RF1
L	H	L	L	↑	RF2
H	L	L	L	↑	RF3
H	H	L	L	↑	RF4
H	H	H	H	↑	RF1
H	H	H	L	↑	RF2
H	H	L	H	↑	RF3
H	H	L	L	↑	RF4

ENVIRONMENTAL RATINGS	
TEMPERATURE	-55°C TO +85°C (OPERATING) -65°C TO +125°C (STORAGE)
HUMIDITY	MIL-STD-202F, METHOD 103D, CONDITION B
SHOCK	MIL-STD-202F, METHOD 213B, CONDITION B
VIBRATION	MIL-STD-202F, METHOD 204D, CONDITION B
ALTITUDE	MIL-STD-202F, METHOD 105C, CONDITION B
TEMPERATURE CYCLE	MIL-STD-202F, METHOD 107D, CONDITION A



FINAL TEST DATA
 Serial Number : 4MS303031

PORTS	J1 TO J5		J2 TO J5		J3 TO J5		J4 TO J5	
INSERTION LOSS	1.72 dB		1.64 dB		2.18 dB		1.57 dB	
RETURN LOSS:	dB	VSWR	dB	VSWR	dB	VSWR	dB	VSWR
INPUT:	19.78	1.23:1	14.47	1.47:1	14.08	1.49:1	16.46	1.35:1
OUTPUT:	14.37	1.47:1	14.00	1.50:1	16.19	1.37:1	14.98	1.43:1
OUTPUT OFF:	16.20	1.37:1	14.98	1.43:1	19.02	2.10:1	14.62	1.46:1
SWITCHING SPEED								
PORT	"On" 50% Control to 90% RF		"Off" 50% Control to 10% RF		CURRENT DRAW			
	J1	140 nS	200 nS		+5 VDC	+114 mA		
J2	160 nS	200 nS			-5 VDC	-31 mA		
J3	120 nS	190 nS						
J4	140 nS	200 nS						



FINAL TEST DATA

Serial Number : 4MS303032

PORTS	J1 TO J5		J2 TO J5		J3 TO J5		J4 TO J5	
INSERTION LOSS	1.99 dB		2.09 dB		1.99 dB		1.98 dB	
RETURN LOSS:	dB	VSWR	dB	VSWR	dB	VSWR	dB	VSWR
INPUT:	21.05	1.19:1	13.98	1.50:1	17.03	1.33:1	17.47	1.31:1
OUTPUT:	15.52	1.40:1	15.83	1.39:1	18.79	1.26:1	17.88	1.31:1
OUTPUT OFF:	17.37	1.31:1	13.99	1.50:1	14.20	1.48:1	15.26	1.42:1
SWITCHING SPEED								
PORT	"On" 50% Control to 90% RF		"Off" 50% Control to 10% RF		CURRENT DRAW			
	J1	150 nS	J2	120 nS	+5 VDC		+114 mA	
J2	150 nS	J3	125 nS	-5 VDC		-31 mA		
J3	175 nS	J4	125 nS					
J4	150 nS							