



TEST REPORT
ON
50 TO 100 MHz
SINGLE POLE FOUR THROW
ABSORPTIVE / NON-REFLECTIVE SWITCH MODULE

AMC MODEL No:
MSNN-4DT-04T-DEC-SP
OPTION RLC, 50M01

Serial Numbers: 4MS808303 THRU 4MS808306

DESIGNED
BY
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TESTED
BY
R. Butler

REPORTED
BY
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April 29, 2005

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ISO9001 : 2000 CERTIFIED

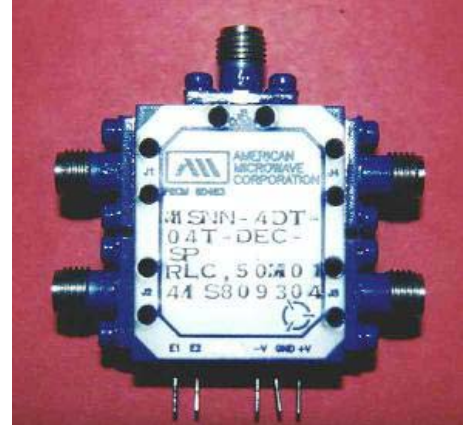
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SINGLE POLE FOUR THROW ABSORPTIVE / NON-REFLECTIVE SWITCH MODULE AMC MODEL No: MSNN-4DT-04T-DEC-SP OPTION RLC, 50M01

FEATURES:

- **50 TO 100 MHz FREQUENCY RANGE**
- **VERY LOW INSERTION LOSS**
- **VERY HIGH ISOLATION**
- **INTEGRAL TTL DRIVER**



SPECIFICATIONS:

- | | | |
|-------------------------|---|-----------------------------------|
| ● FREQUENCY | : | 50 TO 100 MHz |
| ● INSERTION LOSS | : | 2.0 dB MAXIMUM |
| ● ISOLATION | : | 60 dB MINIMUM |
| ● VSWR | : | 1.5:1 |
| ● SPEED | : | 1 uS MAXIMUM |
| ● POWER HANDLING | : | +27 dBm MAXIMUM |
| ● CONTROL | : | 2 LINE TTL |
| ● POWER SUPPLY | : | +5V @ 200 mA MAXIMUM |
| | : | -15V @ 100 mA MAXIMUM |
| ● CONNECTORS | : | RF: SMA CONNECTORS |
| | : | CONTROL: SOLDER PIN |
| ● IMPEDENCE | : | 50 OHMS |
| ● OPERATING TEMPERATURE | : | -20°C TO +70°C |
| ● SIZE | : | 1.00" (L) x 0.70" (W) x 0.40" (H) |

PRODUCT FEATURE

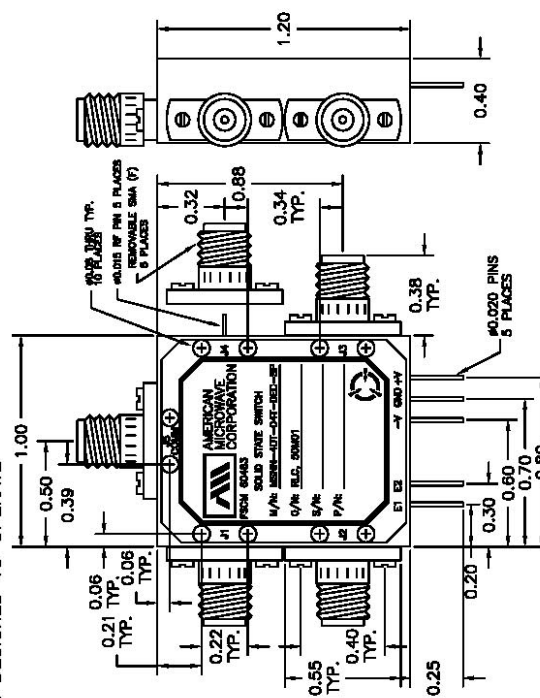
NAME	80470-3E	DATE	4/30/98	APPROVED	
REVISIONS	1 - ORIGINAL RELEASE JOB# 80470-3E 2 - ORIGINAL RELEASE JOB# 80470-3E 3 - ORIGINAL RELEASE JOB# 80470-3E				

DESCRIPTION

AMC MODEL MSNN-4DT-04T-DEC-SP OPTION: RLC, 50M01 IS AN ABSORPTIVE/NON-REFLECTIVE SINGLE POLE FOUR THROW SWITCH DESIGNED TO OPERATE BETWEEN THE 50 MHz TO 100 MHz FREQUENCY RANGE.

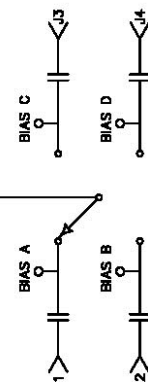
SPECIFICATIONS

- FREQUENCY RANGE: 50 MHz TO 100 MHz
- INSERTION LOSS: 2.0 dB MAXIMUM
- ISOLATION: 60 dB MINIMUM
- VSWR: 1.5:1 MAXIMUM
- SPEED: 1 μ Sec MAXIMUM
- POWER HANDLING: +27 dBm MAXIMUM
- CONTROL: 2 LINE TTL
- POWER SUPPLY: +5V @ 200 mA MAXIMUM
-15V @ 100 mA MAXIMUM
- CONNECTORS: SMA FEMALE
- RF: SOLDER PIN
- CONTROL: SOLDER PIN
- OPERATING TEMPERATURE: -20°C TO +70°C
- IMPEDANCE: 50 OHMS
- SIZE: 1.00" (L) x 0.70" (W) x 0.40" (H)



M/N: = MODEL NUMBER
 O/N: = OPTION NUMBER
 S/N: = SERIAL NUMBER
 P/N: = PART NUMBER

BLOCK DIAGRAM



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

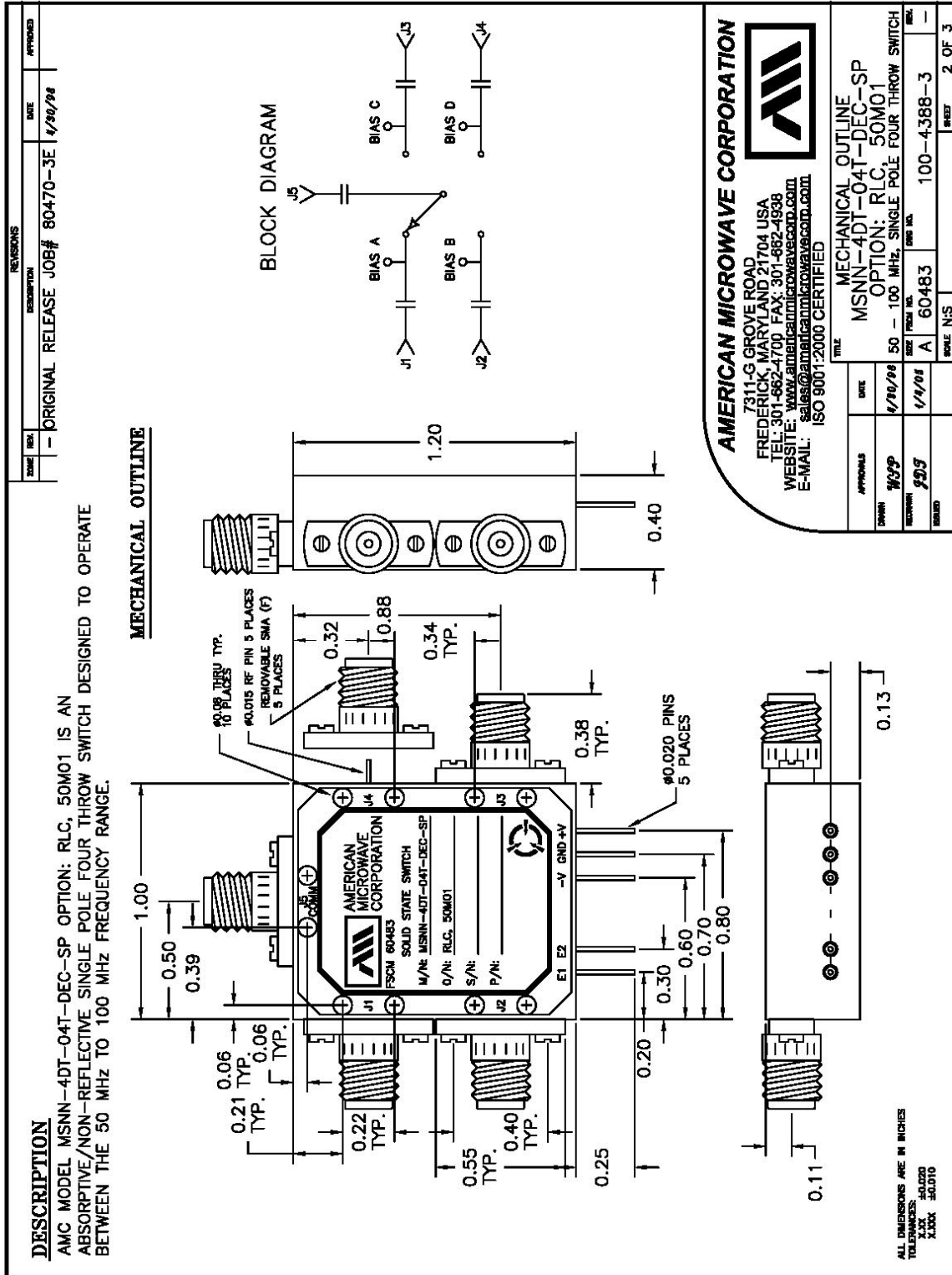
NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE
 NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE ON REVISION

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DATE	4/30/98	DATE	1/14/01	REV. NO.	100-4388-3
APPROVALS		DATE		REV. NO.	
DESIGN	WGP	DATE	4/30/98	REV. NO.	50
REVISION	WGP	DATE	1/14/01	REV. NO.	A
ISSUED		DATE		REV. NO.	

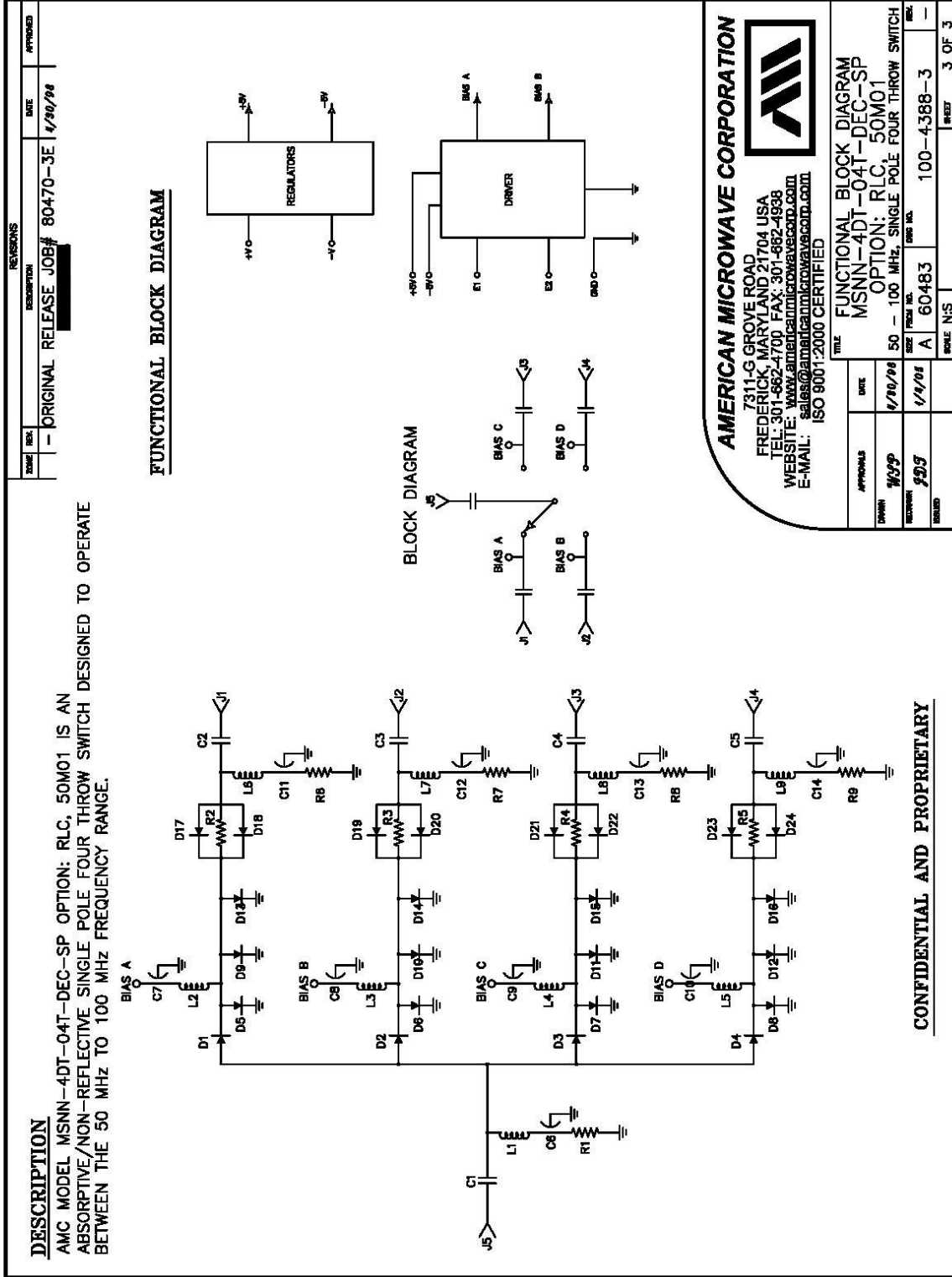
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OUTLINE DRAWING





FUNCTIONAL SCHEMATIC



FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

MSNN-4DT-04T-DEC-SP
OPTION RLC, 50M01

Serial Numbers:

4MS808303 THRU 4MS808306

FINAL TEST DATA

AMC MODEL NO: MSNN-4DT-04T-DEC-SP OPTION RLC, 50M01, SERIAL NUMBER: 4MS808303

FORM: SW-01-0698

DATE: 11-16-98

MICROWAVE SWITCH FINAL TEST DATA

JOB NO: 80470-3E MODEL NO: MSNN-4DT-04T SERIAL NO: 4MS808303
 CUSTOMER: Israel USA International TECHNICIAN: R. Butler
 SPECIFICATION: RLC, 50m01-DEC-SP FREQUENCY RANGE: 50 MHz to 100 MHz
+5 150
-15 30

RETURN LOSS						
INSERTION LOSS	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J5-J1 1.86 dB	15.80 dB	1.38 : 1	17.27 dB	1.31 : 1	32.00 dB	1.04 : 1
J5-J2 1.99 dB	15.15 dB	1.42 : 1	16.37 dB	1.35 : 1	32.72 dB	1.04 : 1
J5-J3 1.75 dB	16.05 dB	1.37 : 1	17.60 dB	1.30 : 1	29.35 dB	1.06 : 1
J5-J4 1.86 dB	15.80 dB	1.38 : 1	17.63 dB	1.30 : 1	31.41 dB	1.05 : 1

SWITCHING SPEED				
ISOLATION	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J5-J1 > 60dB	< 1 μs		< 1 μs	
J5-J2 > 60dB	< 1 μs		< 1 μs	
J5-J3 > 60dB	< 1 μs		< 1 μs	
J5-J4 > 60dB	< 1 μs		< 1 μs	

NOTE: Any additional Test Data on Back

TESTED ON: 835018757 HP

TEST : E #30
 QA/QC : [Signature]
 DATE : 11/12/98

FINAL TEST DATA

AMC MODEL NO: MSNN-4DT-04T-DEC-SP OPTION RLC, 50M01, SERIAL NUMBER: 4MS808304

FORM: SW-01/0698



DATE: 11-16-98

MICROWAVE SWITCH FINAL TEST DATA

JOB NO: 80470-3E MODEL NO: MSNN-4DT-04T SERIAL NO: 4MS808304
 CUSTOMER: Isenet USA International TECHNICIAN: R. Decker
 SPECIFICATION: RLC, 50m01-DEC-SP FREQUENCY RANGE: 50 MHz to 100 MHz
+5 ISO
-1545 mA

RETURN LOSS						
INSERTION LOSS	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J5-J1 1.78 dB	16.32 dB	1.36 : 1	17.90 dB	1.29 : 1	23.48 dB	1.14 : 1
J5-J2 1.77 dB	16.41 dB	1.35 : 1	17.82 dB	1.29 : 1	22.93 dB	1.07 : 1
J5-J3 1.81 dB	16.30 dB	1.36 : 1	17.43 dB	1.31 : 1	27.57 dB	1.08 : 1
J5-J4 1.63 dB	17.24 dB	1.32 : 1	18.21 dB	1.28 : 1	27.88 dB	1.08 : 1

SWITCHING SPEED				
ISOLATION	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J5-J1 > 60 dB	< 1 μs		< 1 μs	
J5-J2 > 60 dB	< 1 μs		< 1 μs	
J5-J3 > 60 dB	< 1 μs		< 1 μs	
J5-J4 > 60 dB	< 1 μs		< 1 μs	

NOTE: Any additional Test Data on Back

E #30

TESTED ON: 8350/8757 HP

TEST: _____
 QA/QC: PA
 DATE: 11/17/98

FINAL TEST DATA

AMC MODEL NO: MSNN-4DT-04T-DEC-SP OPTION RLC, 50M01, SERIAL NUMBER: 4MS808305

FORM: SW-01-069S



DATE: 11-16-08

MICROWAVE SWITCH FINAL TEST DATA

JOB NO: 80470-3E MODEL NO: MSNN-4DT-04T SERIAL NO: 4MS808305
 CUSTOMER: Isenet USA International TECHNICIAN: P. Decker
 SPECIFICATION: RLC, 50m01-DEC-SP FREQUENCY RANGE: 50MHz to 100MHz
+5156
-1546 mV

RETURN LOSS						
INSERTION LOSS	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J5-J1 1.68 dB	16.38 dB	1.35:1	18.16 dB	1.28:1	20.86 dB	1.19:1
J5-J2 1.63 dB	16.74 dB	1.34:1	18.40 dB	1.27:1	26.04 dB	1.09:1
J5-J3 1.64 dB	16.81 dB	1.33:1	18.28 dB	1.27:1	22.58 dB	1.16:1
J5-J4 1.65 dB	16.97 dB	1.33:1	18.25 dB	1.28:1	27.43 dB	1.08:1

SWITCHING SPEED				
ISOLATION	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J5-J1 > 60dB	< 1 μs		< 1 μs	
J5-J2 > 60dB	< 1 μs		< 1 μs	
J5-J3 > 60dB	< 1 μs		< 1 μs	
J5-J4 > 60dB	< 1 μs		< 1 μs	

NOTE: Any additional Test Data on Back

TESTED ON: 835018757 HP

TEST: _____
 QA/QC: PA
 DATE: 11/16/08

FINAL TEST DATA

AMC MODEL NO: MSNN-4DT-04T-DEC-SP OPTION RLC, 50M01, SERIAL NUMBER: 4MS808306

FORM: SW-01/0698



DATE: 11-16-98

MICROWAVE SWITCH FINAL TEST DATA

JOB NO: 80470-JE MODEL NO: MSNN-4DT-04T SERIAL NO: 4MS808306
 CUSTOMER: Isnet USA International TECHNICIAN: R. Decker
 SPECIFICATION: RLC, 50m01-DEC-SP FREQUENCY RANGE: 50 MHz to 100 MHz
+5 150
-15 45 mV

RETURN LOSS						
INSERTION LOSS	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J5-J1 1.62 dB	16.63 dB	1.34 :1	18.49 dB	1.27 :1	29.43 dB	1.07 :1
J5-J2 1.59 dB	16.76 dB	1.34 :1	18.35 dB	1.27 :1	23.65 dB	1.13 :1
J5-J3 1.60 dB	16.84 dB	1.33 :1	18.11 dB	1.28 :1	28.43 dB	1.07 :1
J5-J4 1.59 dB	17.14 dB	1.32 :1	18.25 dB	1.28 :1	24.64 dB	1.12 :1

SWITCHING SPEED				
ISOLATION	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J5-J1 > 60 dB	< 1 μs		< 1 μs	
J5-J2 > 60 dB	< 1 μs		< 1 μs	
J5-J3 > 60 dB	< 1 μs		< 1 μs	
J5-J4 > 60 dB	< 1 μs		< 1 μs	

NOTE: Any additional Test Data on Back

TESTED ON: 835018757 HP

TEST: E #30

QA/QC: _____

DATE: _____