AMERICAN MICROWAVE CORPORATION

TEST DATA

ON

40 MHz TO 18 GHz

40 MHz TO 4 GHz

AND

1 GHz TO 18 GHz

HIGH ISOLATION

HIGH SPEED

LOW INSERTION LOSS

NON-REFLECTIVE/ABSORPTIVE

RECTANGULAR

SP3T

SOLID STATE SWITCH

(SURFACE MOUNTABLE)

AMC MODEL No:
MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118

(Serial Number: 3MS902016)

PREPARED
BY
KATIE BAISEY

TESTED
BY
RENE AFABLE

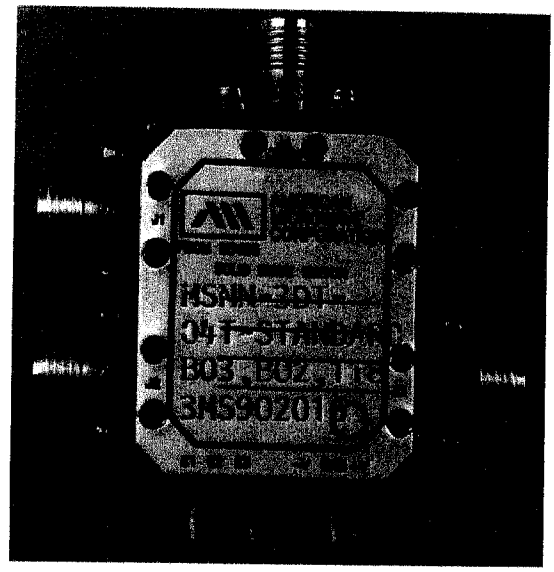
OCTOBER 3, 2000

WEB PAGE: HTTP://WWW.AMWAVE.COM E-MAIL ADDRESS: AMCPMI@AOL.COM

7311 G GROVE ROAD, FREDERICK, MARYLAND 21704 • Tel. (301) 662-4700 • Fax (301) 662-4938

AMERICAN MICROWAVE CORPORATION

HIGH ISOLATION, HIGH SPEED, LOW INSERTION LOSS, RECTANGULAR, SP3T NON-REFLECTIVE/ABSORPTIVE SOLID STATE SWITCH



KEY FEATURES

- 200 MHz TO 18 GHz
- LOW INSERTION LOSS
- HIGH SPEED
- HIGH ISOLATION
- SURFACE MOUNTABLE
- TTL COMPATIBLE

AMC MODEL No: MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118

SPECIFICATIONS: (REFLECTIVE)

• FREQUENCY RANGE	:	200 MHz to 18 GHz (10 MHz TO 18 GHz optional)
• INSERTION LOSS	:	3.5 dB MAX.
	:	1.4 dB TYP. @ 200 MHz
	:	1.1 dB TYP. @ 2 GHz
	:	1.9 dB TYP. @ 6 GHz
	:	2.3 dB TYP. @ 10 GHz
	:	3.5 dB TYP.@ 18 GHz
• ISOLATION	:	≥ 80 dB MIN.
	:	≥ 98 dB TYP. @ 200 MHz
	:	≥ 95 dB TYP. @ 2 GHz
	:	≥ 90 dB TYP. @ 6 GHz
	:	≥ 90 dB TYP. @ 10 GHz
	:	≥ 80 dB TYP. @ 18 GHz
• VSWR	:	2.0:1
• SWITCHING SPEED	:	"RISE" 10nS MAX., 5nS TYP.
	:	"FALL" 10nS MAX., 5nS TYP.
	:	"ON" 60nS MAX., 40nS TYP.
	:	"OFF" 60nS MAX., 40nS TYP.
• CONTROL	:	Independent Control TTL compatible
• VIDEO TRANSIENT	:	≤1.9 V peak to peak at 300 MHz bandwidth
	:	≤700 mV peak to peak at 20 MHz bandwidth
• RF INPUT POWER	:	+20dBm (CW)(other power levels available)
• DC POWER SUPPLY	:	+5vdc @ 150mA MAX.
(Other supply voltages available)	:	-15vdc @ 50mA MAX.
	:	
• SIZE	:	1.2" (L) X 1.0" (W) X 0.4" (H)
• WEIGHT	:	≤1.5 oz. TYPICAL

OCTOBER 3, 2000

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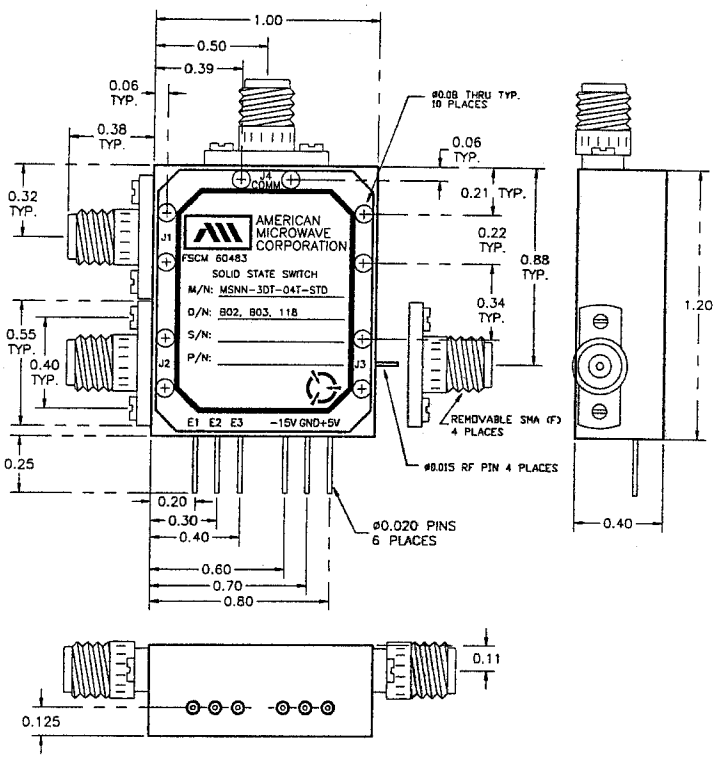
SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA



ALL DIMENSIONS ARE IN INCHES
TOLERANCES:

X.XX	±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.

OCTOBER 3, 2000

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL JOB# 901004E	10/05/00	

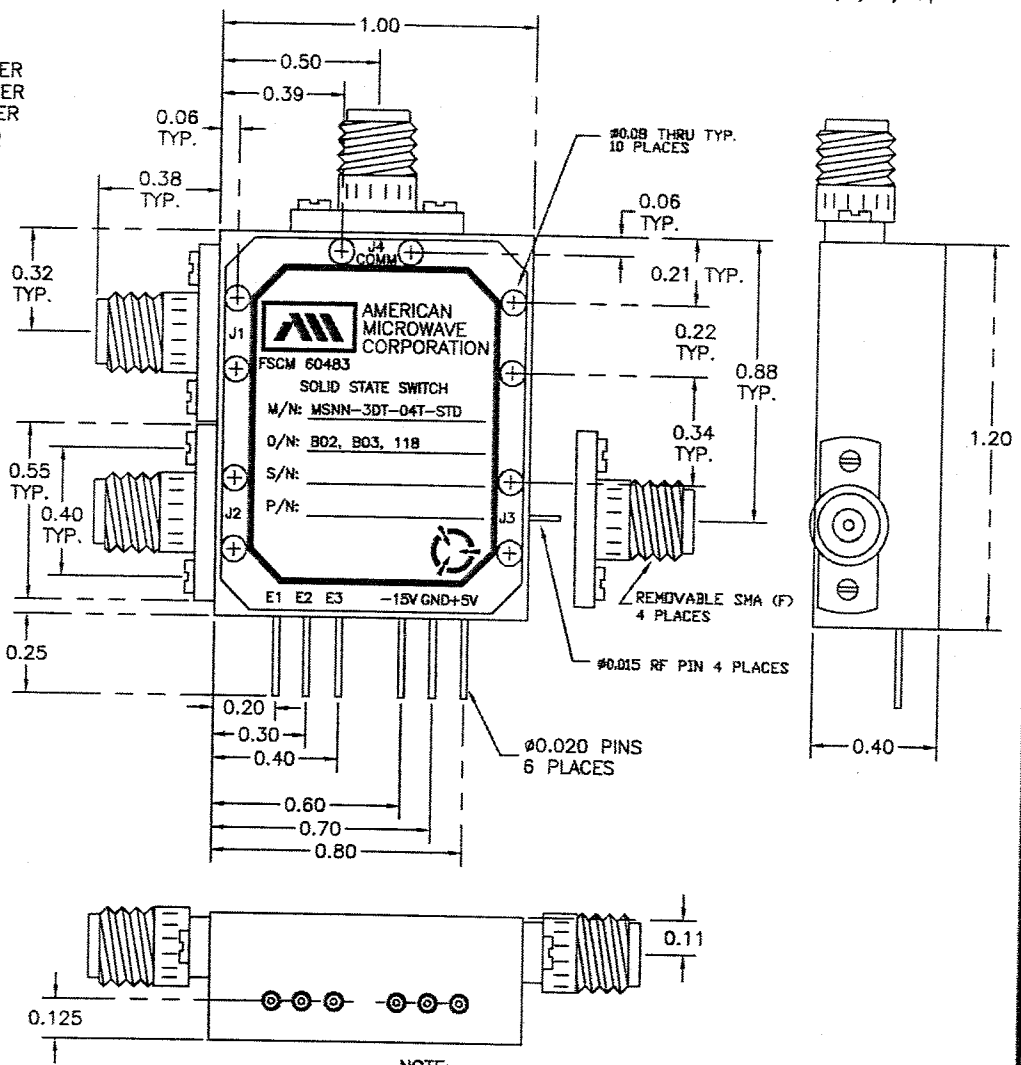
DESCRIPTI(

AMC MODEL M... ...-3DT-04T-STANDARD OPTIONS B02, B03, 118 IS A SINGLE POLE THREE THROW, NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH LOW INSERTION LOSS, HIGH SPEED, HIGH ISOLATION AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR 1 GHz TO 18 GHz OPERATION.

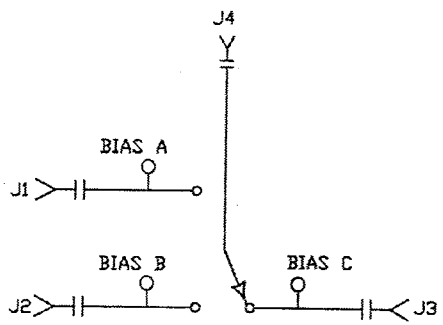
M/N=MODEL NUMBER
O/N=OPTION NUMBER
S/N=SERIAL NUMBER
P/N=PART NUMBER

SPECIFICATIONS:

- FREQUENCY: ..... 1 GHz TO 18 GHz
- INSERTION LOSS: ..... ABSORPTIVE: 3.75db
- ISOLATION: ..... 1 GHz TO 2 GHz: 60db
  2 GHz TO 18 GHz: 70db
- VSWR: ..... ABSORPTIVE IN/OUT: 2.0:1
  ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: ..... RISE: 10ns TYPICAL, 15ns MAX.
  FALL: 10ns TYPICAL, 15ns MAX.
  DELAY ON: 75ns TYPICAL, 100ns MAX.
  DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: ..... (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: ..... 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: ..... TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: ..... +5V @ 150 mA MAX.
  −15V@ 100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE ..... 1.2" (L) X 1.0" (W) X 0.4" (H)
- WEIGHT ..... 1.5 OZ. TYPICAL



BLOCK DIAGRAM



NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

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

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

CONFIDENTIAL AND PROPRIETARY

PART NO.		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND		
APPROVALS	DATE	TITLE: PRODUCT FEATURE MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118 SOLID STATE SWITCH		
DRAWN WSP & RRA	10/05/00			
CHECKED	10/9/00			
ISSUED	10/12/00	SIZE A	FSCM NO. 60483	DWG NO. 100-4391-5 REV.
		SCALE		SHEET 1 of 3

DESCRIPTION

AMC MODEL -3DR/DT-04T-STANDARD IS A SINGLE POLE THREE THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH LOW INSERTION LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.75db
  ABSORPTIVE: 3.75db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db
  2 GHz TO 18 GHz: 70db
- VSWR: REFLECTIVE IN/OUT: 2.0:1
  ABSORPTIVE IN/OUT: 2.0:1
  ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.
  FALL: 10ns TYPICAL, 15ns MAX.
  DELAY ON: 75ns TYPICAL, 100ns MAX.
  DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: +5V @ 150 mA MAX.
  -5V @ 75mA MAX.(RELECTIVE)
  100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE 1.2" (L) X 1.0" (W) X 0.4" (H)
- WEIGHT 1.5 OZ. TYPICAL

OPTIONS:

INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

DEC-SP	2 BIT DECODER WITH SOLDER PIN
10M18	10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
100M18	100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
118	1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
218	2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
412	4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
618	6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
1218	12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
100M20	100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
220	2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
1020	10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
B01	-12V POWER SUPPLIES
B02	-15V POWER SUPPLIES
B03	REVERSE LOGIC "1"=ON "0"=OFF
B04	DRIVERLESS, CURRENT CONTROLLED
B05	HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
B06	HIGH POWER - SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
B07	CUSTOM DESIGNED PRODUCT- SPECIFY INITIALS OF CUSTOMER
B08	LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
B09	LOW INSERTION LOSS VERSION
B10	HIGHER ISOLATION VERSION

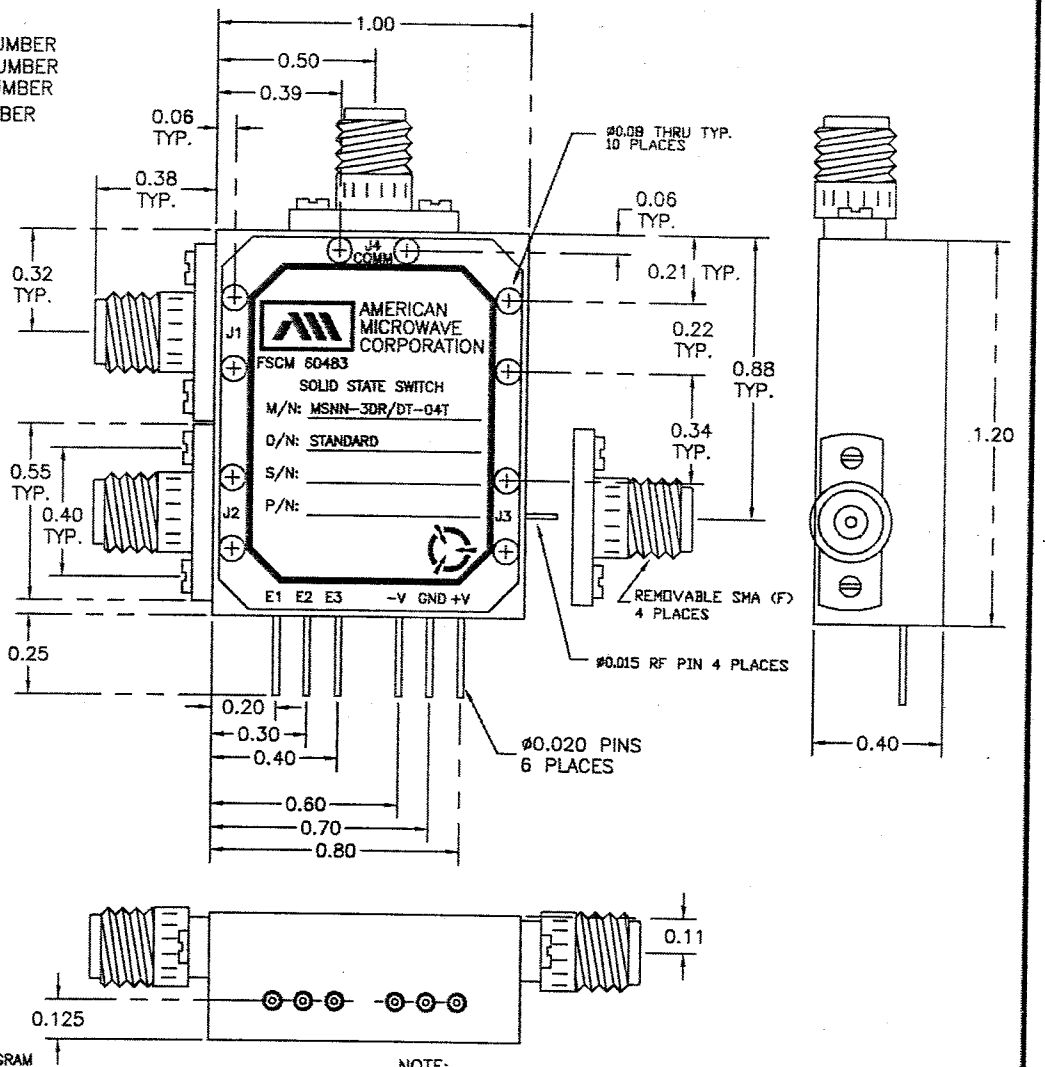
ENVIRONMENTAL RATINGS:

- 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

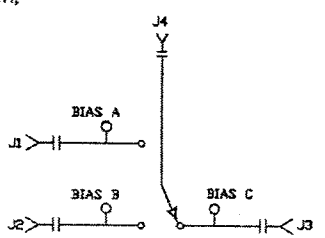
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE	10/05/00	

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



BLOCK DIAGRAM



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

NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

CONFIDENTIAL AND PROPRIETARY

PART NO.		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
APPROVALS	DATE	TITLE: PRODUCT FEATURE MSNN-3DR/DT-04T-STANDARD REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SOLID STATE SWITCH
DRAWN WYP & RRA	10/05/00	
CHECKED	10/9/00	
ISSUED	10/12/00	SIZE A; FSCM NO. 60483; DWG NO. 100-4391-1; REV.
		SCALE; SHEET 1 of 3

DESCRIPTION

AMC MODEL MSNN-3DR/DT-04T-DEC-SP IS A SINGLE POLE THREE THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH LOW INSERTION LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.75db
  ABSORPTIVE: 3.75db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db
  2 GHz TO 18 GHz: 70db
- VSWR: REFLECTIVE IN/OUT: 2.0:1
  ABSORPTIVE IN/OUT: 2.0:1
  ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.
  FALL: 10ns TYPICAL, 15ns MAX.
  DELAY ON: 75ns TYPICAL, 100ns MAX.
  DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: 2 BIT LOGIC
- POWER SUPPLY: +5V @ 150 mA MAX.
  −5V @ 75mA MAX.(RELECTIVE)
  100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.2" (L) X 1.0" (W) X 0.4" (H)
- WEIGHT: 1.5 OZ. TYPICAL

OPTIONS:

INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

DEC-SP	2 BIT DECODER WITH SOLDER PIN
10M18	10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
100M18	100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
118	1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
218	2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
412	4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
618	6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
1218	12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
100M20	100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
220	2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
1020	10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
B01	−12V POWER SUPPLIES
B02	−15V POWER SUPPLIES
B03	REVERSE LOGIC "1"=ON "0"=OFF
B04	DRIVERLESS, CURRENT CONTROLLED
B05	HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
B06	HIGH POWER − SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
B07	CUSTOM DESIGNED PRODUCT− SPECIFY INITIALS OF CUSTOMER
B08	LOW VIDEO TRANSIENTS − SPECIFY VIDEO BANDWIDTH
B09	LOW INSERTION LOSS VERSION
B10	HIGHER ISOLATION VERSION

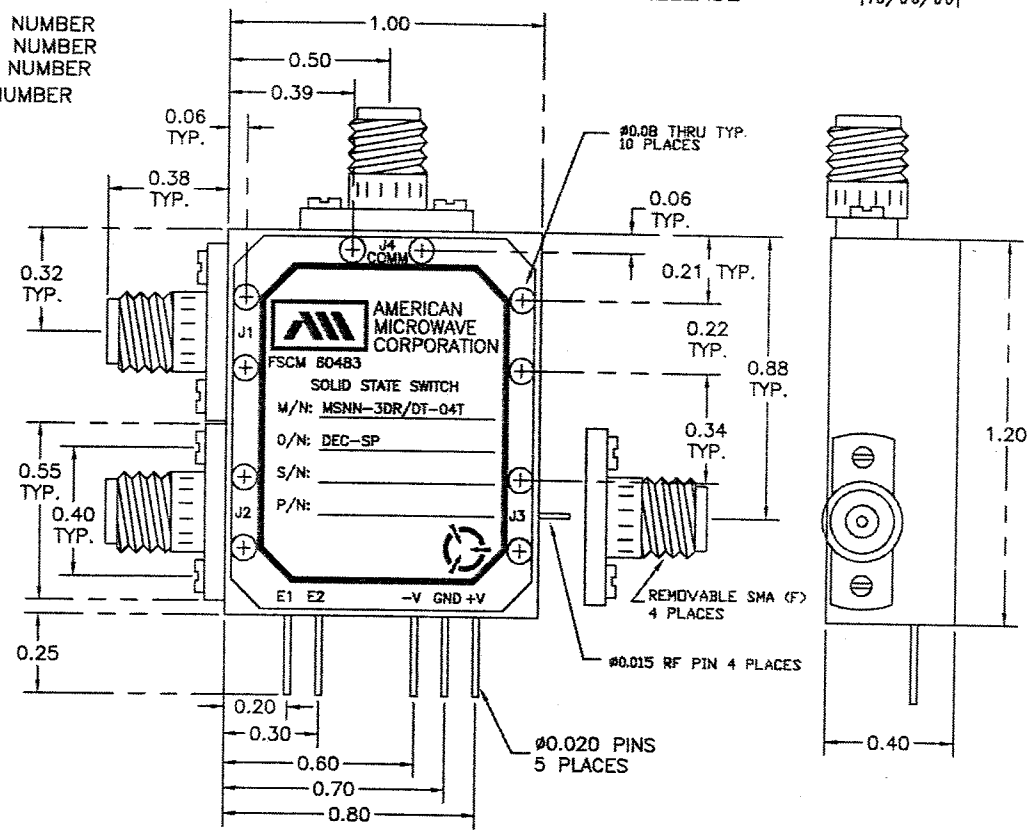
ENVIRONMENTAL RATINGS:

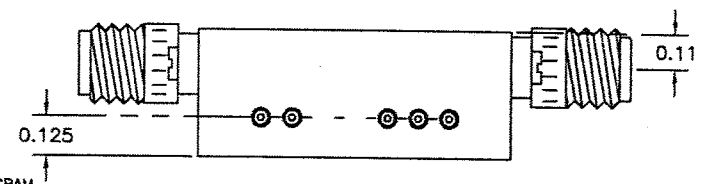
- TEMPERATURE: −55°C TO +85°C (OPERATING)
  −65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND.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

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

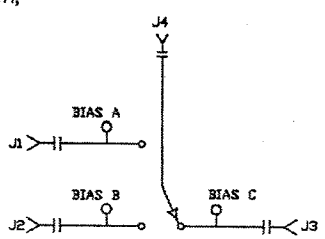
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE	10/05/00	

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





BLOCK DIAGRAM



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

NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

CONFIDENTIAL AND PROPRIETARY

PART NO.		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
APPROVALS	DATE	TITLE: PRODUCT FEATURE MSNN-3DR/DT-04T-DEC-SP REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SOLID STATE SWITCH
DRAWN WYP & RRA	10/05/00	
CHECKED	10/9/00	
ISSUED	10/12/00	SIZE A; FSCM NO. 60483; DWG NO. 100-4391-2; REV.
		SCALE; SHEET 1 of 3

DESCRIPTION:

AMC MODEL 1-3DR/DT-03T-STANDARD IS A SINGLE POLE THREE THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH LOW INSERTION LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.75db
ABSORPTIVE: 3.75db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db
2 GHz TO 18 GHz: 70db
- VSWR: REFLECTIVE IN/OUT: 2.0:1
ABSORPTIVE IN/OUT: 2.0:1
ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.
FALL: 10ns TYPICAL, 15ns MAX.
DELAY ON: 75ns TYPICAL, 100ns MAX.
DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: +5V @ 150 mA MAX.
-5V @ 75mA MAX.(RELECTIVE)
100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE 1.2" (L) X 1.0" (W) X 0.3" (H)
- WEIGHT 1.25 OZ. TYPICAL

OPTIONS:

INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

DEC-SP	2 BIT DECODER WITH SOLDER PIN
10M18	10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
100M18	100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
118	1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
218	2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
412	4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
618	6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
1218	12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
100M20	100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
220	2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
1020	10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
B01	-12V POWER SUPPLIES
B02	-15V POWER SUPPLIES
B03	REVERSE LOGIC "1"=ON "0"=OFF
B04	DRIVERLESS, CURRENT CONTROLLED
B05	HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
B06	HIGH POWER - SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
B07	CUSTOM DESIGNED PRODUCT- SPECIFY INITIALS OF CUSTOMER
B08	LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
B09	LOW INSERTION LOSS VERSION
B10	HIGHER ISOLATION VERSION

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

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE	10/05/00	

M/N=MODEL NUMBER
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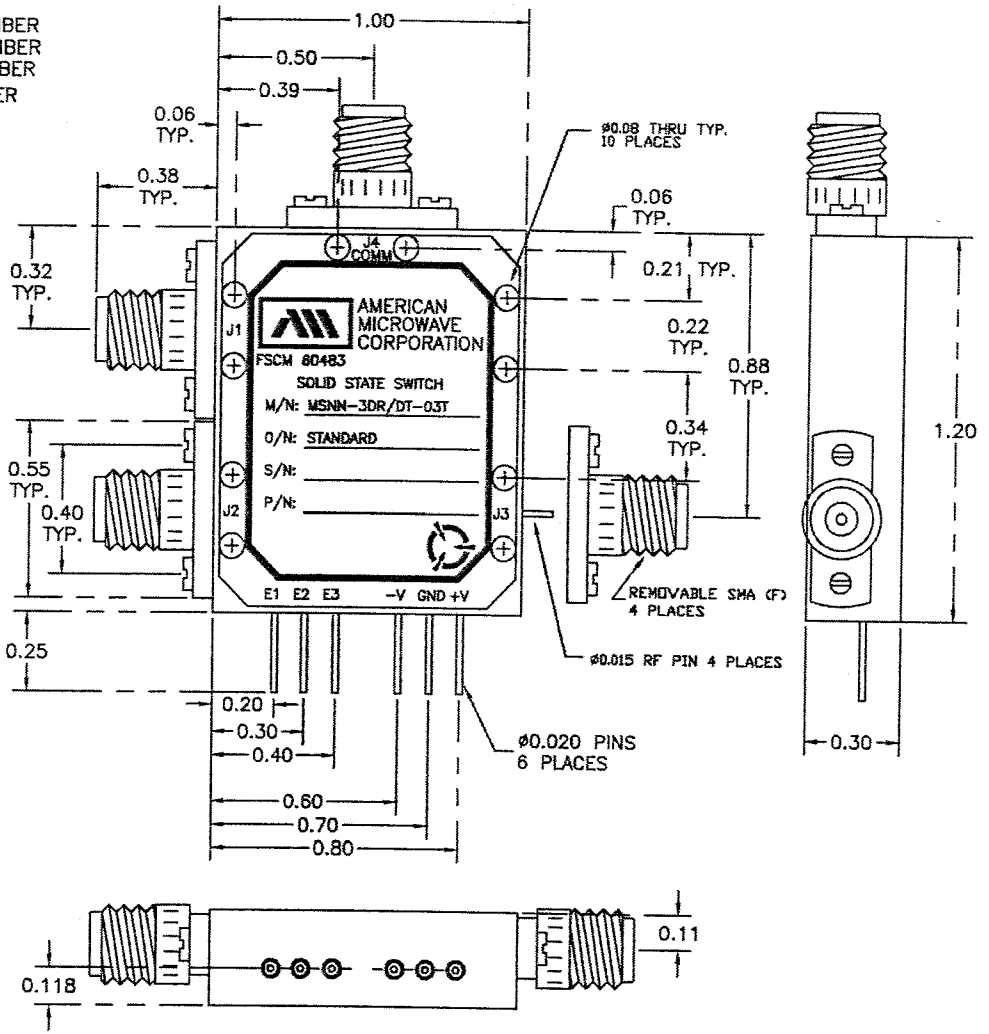
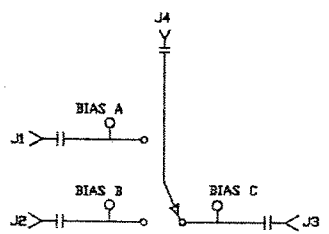


BLOCK DIAGRAM



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

NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

CONFIDENTIAL AND PROPRIETARY

PART NO.		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND	
APPROVALS	DATE	TITLE	PRODUCT FEATURE MSNN-3DR/DT-03T-STANDARD REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SOLID STATE SWITCH
DRAWN WSP & RRA	10/05/00		
CHECKED	10/9/00		
ISSUED	10/12/00	SIZE A / FSCM NO. 60483 / DWG NO. 100-4390-1 / REV.	
		SCALE	SHEET 1 of 3

DESCRIPTIO

AMC MODEL M -3DR/DT-03T-DEC-SP IS A SINGLE POLE THREE THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH LOW INSERTION LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: ..... 0.5 GHz TO 18 GHz
- INSERTION LOSS: ..... REFLECTIVE: 2.75db
  ABSORPTIVE: 3.75db
- ISOLATION: ..... 0.5 GHz TO 2 GHz: 60db
  2 GHz TO 18 GHz: 70db
- VSWR: ..... REFLECTIVE IN/OUT: 2.0:1
  ABSORPTIVE IN/OUT: 2.0:1
  ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: ..... RISE: 10ns TYPICAL, 15ns MAX.
  FALL: 10ns TYPICAL, 15ns MAX.
  DELAY ON: 75ns TYPICAL, 100ns MAX.
  DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: ..... (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: ..... 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: ..... 2 BIT LOGIC
- POWER SUPPLY: ..... +5V @ 150 mA MAX.
  −5V @ 75mA MAX.(RELECTIVE)
  100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE ..... 1.2" (L) X 1.0" (W) X 0.3" (H)
- WEIGHT ..... 1.25 OZ. TYPICAL

OPTIONS:

INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

DEC-SP ..... 2 BIT DECODER WITH SOLDER PIN

10M18 ..... 10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)

100M18 ..... 100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)

118 ..... 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)

218 ..... 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)

412 ..... 4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)

618 ..... 6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)

1218 ..... 12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)

100M20 ..... 100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)

220 ..... 2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)

1020 ..... 10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)

B01 ..... −12V POWER SUPPLIES

B02 ..... −15V POWER SUPPLIES

B03 ..... REVERSE LOGIC "1"=ON "0"=OFF

B04 ..... DRIVERLESS, CURRENT CONTROLLED

B05 ..... HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS

B06 ..... HIGH POWER − SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH

B07 ..... CUSTOM DESIGNED PRODUCT− SPECIFY INITIALS OF CUSTOMER

B08 ..... LOW VIDEO TRANSIENTS − SPECIFY VIDEO BANDWIDTH

B09 ..... LOW INSERTION LOSS VERSION

B10 ..... HIGHER ISOLATION VERSION

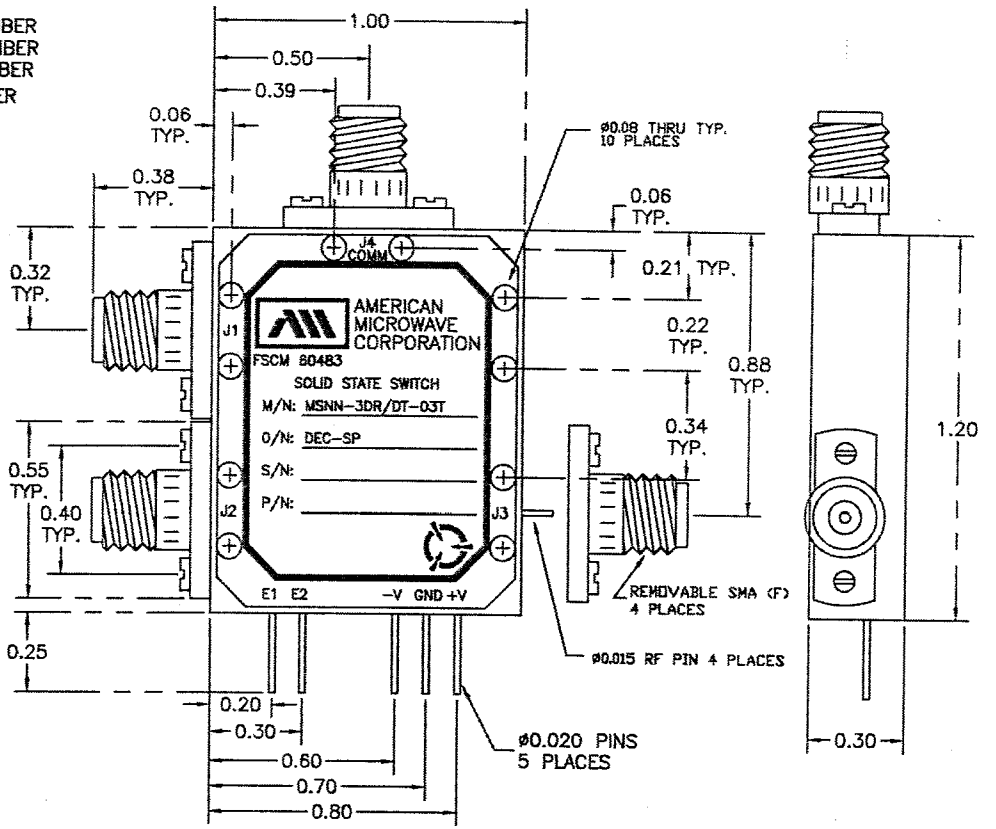
ENVIRONMENTAL RATINGS:

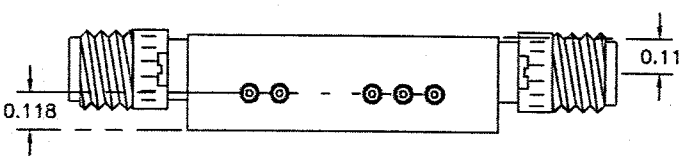
- TEMPERATURE: ..... −55°C TO +85°C (OPERATING)
  −65°C TO +125°C (STORAGE)
- HUMIDITY: ..... MIL-STD-202F, METHOD 103B COND. B
- SHOCK: ..... MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: ..... MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: ..... MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: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

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

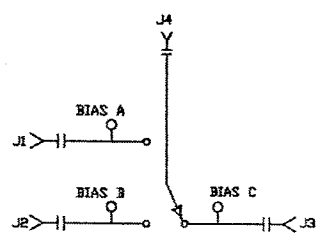
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE	10/05/00	

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





BLOCK DIAGRAM



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

NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

CONFIDENTIAL AND PROPRIETARY

PART NO.		
APPROVALS	DATE	
DRAWN WSP & RRA	10/05/00	
CHECKED	10/9/00	
ISSUED	10/12/00	

AMERICAN MICROWAVE CORPORATION
FREDERICK, MARYLAND

TITLE
PRODUCT FEATURE
MSNN-3DR/DT-03T-DEC-SP
REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE
SOLID STATE SWITCH

SIZE	FSCM NO.	DWG NO.	REV.
A	60483	100-4390-2	

SCALE | SHEET 1 of 3

DESCRIPTION

AMC MODEL MSNN-3DR/DT-024T-STANDARD IS A SINGLE POLE THREE THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH LOW INSERTION LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE	10/05/00	

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.75db
  ABSORPTIVE: 3.75db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db
  2 GHz TO 18 GHz: 70db
- VSWR: REFLECTIVE IN/OUT: 2.0:1
  ABSORPTIVE IN/OUT: 2.0:1
  ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.
  FALL: 10ns TYPICAL, 15ns MAX.
  DELAY ON: 75ns TYPICAL, 100ns MAX.
  DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: +5V @ 150 mA MAX.
  −5V @ 75mA MAX.(RELECTIVE)
  100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.2" (L) X 1.0" (W) X 0.24" (H)
- WEIGHT: 1.5 OZ. TYPICAL

OPTIONS:

INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

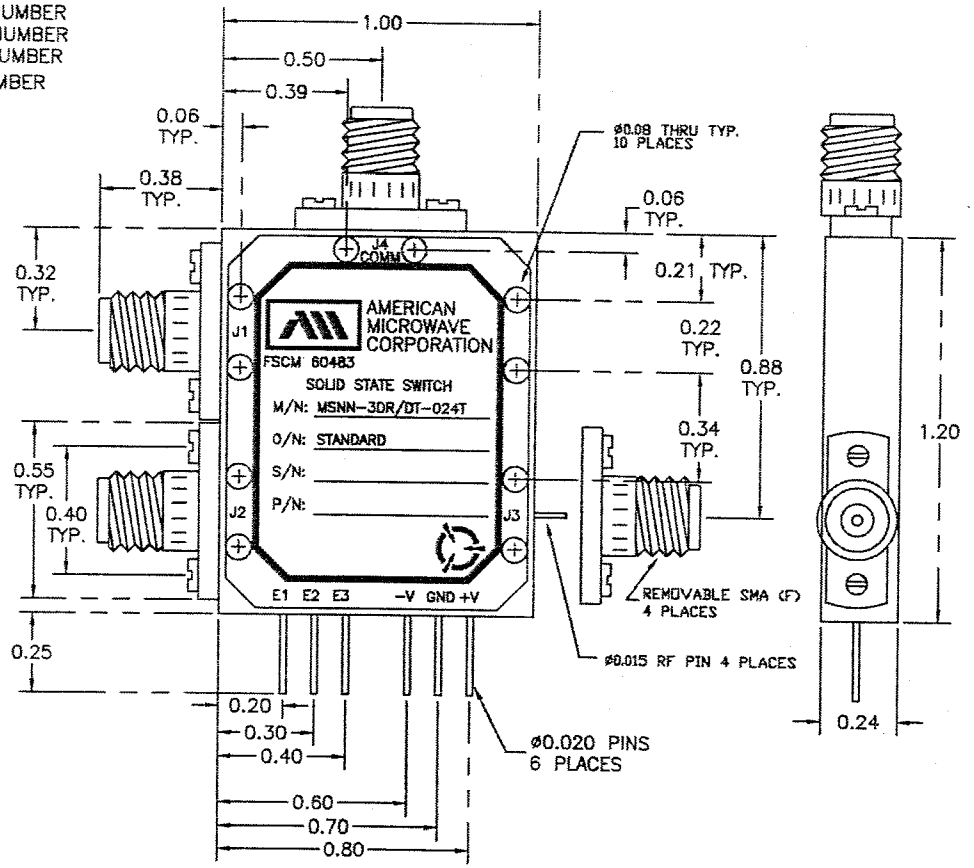
DEC-SP	2 BIT DECODER WITH SOLDER PIN
10M18	10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
100M18	100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
118	1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
218	2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
412	4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
618	6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
1218	12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
100M20	100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
220	2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
1020	10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
B01	−12V POWER SUPPLIES
B02	−15V POWER SUPPLIES
B03	REVERSE LOGIC "1"=ON "0"=OFF
B04	DRIVERLESS, CURRENT CONTROLLED
B05	HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
B06	HIGH POWER − SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
B07	CUSTOM DESIGNED PRODUCT− SPECIFY INITIALS OF CUSTOMER
B08	LOW VIDEO TRANSIENTS − SPECIFY VIDEO BANDWIDTH
B09	LOW INSERTION LOSS VERSION
B10	HIGHER ISOLATION VERSION

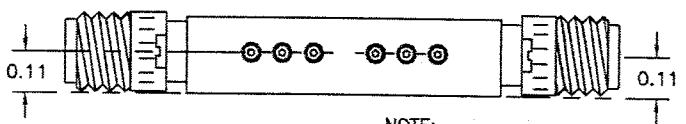
ENVIRONMENTAL RATINGS:

- 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

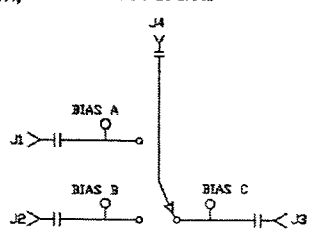
M/N=MODEL NUMBER
O/N=OPTION NUMBER
S/N=SERIAL NUMBER
P/N=PART NUMBER





NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

BLOCK DIAGRAM



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

CONFIDENTIAL AND PROPRIETARY

PART NO.		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
APPROVALS	DATE	TITLE: PRODUCT FEATURE MSNN-3DR/DT-024T-STANDARD REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SOLID STATE SWITCH
DRAWN WSP & RRA	10/05/00	
CHECKED	10/9/00	
ISSUED	10/12/00	SIZE A; FSCM NO. 60483; DWG NO. 100-4389-1; REV.
		SCALE; SHEET 1 of 3

PAGE 9 (T38-S-RA-1000)

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE	10/05/00	

DESCRIPTION

AMC MODEL MSNN-3DR/DT-024T-DEC-SP IS A SINGLE POLE THREE THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH LOW INSERTION LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.75db
  ABSORPTIVE: 3.75db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db
  2 GHz TO 18 GHz: 70db
- VSWR: REFLECTIVE IN/OUT: 2.0:1
  ABSORPTIVE IN/OUT: 2.0:1
  ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.
  FALL: 10ns TYPICAL, 15ns MAX.
  DELAY ON: 75ns TYPICAL, 100ns MAX.
  DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: 2 BIT LOGIC
- POWER SUPPLY: +5V @ 150 mA MAX.
  −5V @ 75mA MAX.(RELECTIVE)
  100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.2" (L) X 1.0" (W) X 0.24" (H)
- WEIGHT: 1.25 OZ. TYPICAL

OPTIONS:

INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

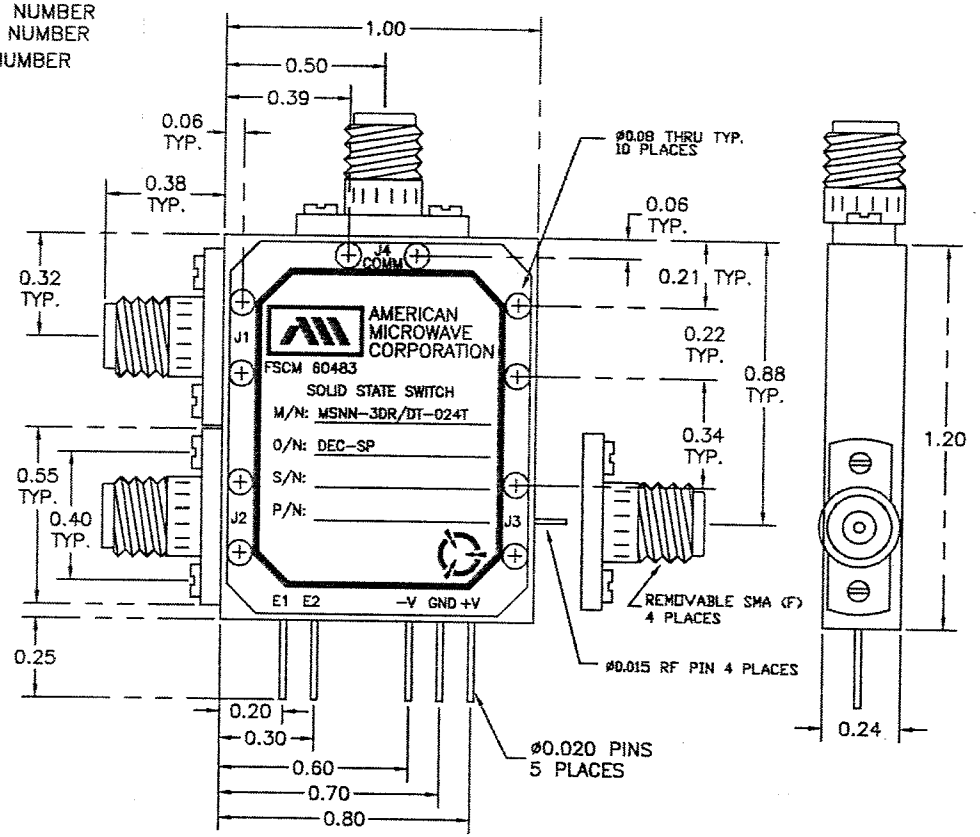
DEC-SP	2 BIT DECODER WITH SOLDER PIN
10M18	10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
100M18	100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
118	1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
218	2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
412	4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
618	6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
1218	12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
100M20	100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
220	2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
1020	10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
B01	−12V POWER SUPPLIES
B02	−15V POWER SUPPLIES
B03	REVERSE LOGIC "1"=ON "0"=OFF
B04	DRIVERLESS, CURRENT CONTROLLED
B05	HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
B06	HIGH POWER − SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
B07	CUSTOM DESIGNED PRODUCT− SPECIFY INITIALS OF CUSTOMER
B08	LOW VIDEO TRANSIENTS − SPECIFY VIDEO BANDWIDTH
B09	LOW INSERTION LOSS VERSION
B10	HIGHER ISOLATION VERSION

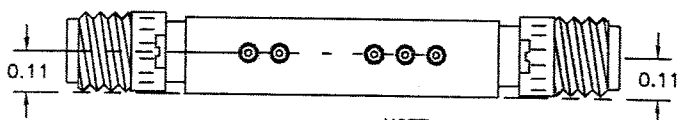
ENVIRONMENTAL RATINGS:

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 MIL-STD-202F, METHOD 107D COND. A

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

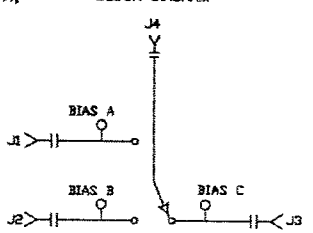
M/N=MODEL NUMBER
O/N=OPTION NUMBER
S/N=SERIAL NUMBER
P/N=PART NUMBER





NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

BLOCK DIAGRAM



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

CONFIDENTIAL AND PROPRIETARY

PART NO.		
APPROVALS	DATE	
DRAWN WSP & RRA	10/05/00	
CHECKED	10/9/00	
ISSUED	10/12/00	

AMERICAN MICROWAVE CORPORATION
FREDERICK, MARYLAND

TITLE
PRODUCT FEATURE
MSNN-3DR/DT-024T-DEC-SP
REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE
SOLID STATE SWITCH

SIZE	FSCM NO.	DWG NO.	REV.
A	60483	100-4389-2	

SCALE | SHEET 1 of 3

AMERICAN MICROWAVE CORPORATION

TEST DATA

FROM

40 MHz TO 18 GHz

HIGH ISOLATION

HIGH SPEED

LOW INSERTION LOSS

RECTANGULAR

SOLID STATE SWITCH

(SURFACE MOUNTABLE)

AMC MODEL No:

MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118

(Serial Number: 3MS902016)

PREPARED
BY
KATIE BAISEY

TESTED
BY
RENE AFABLE

OCTOBER 3, 2000

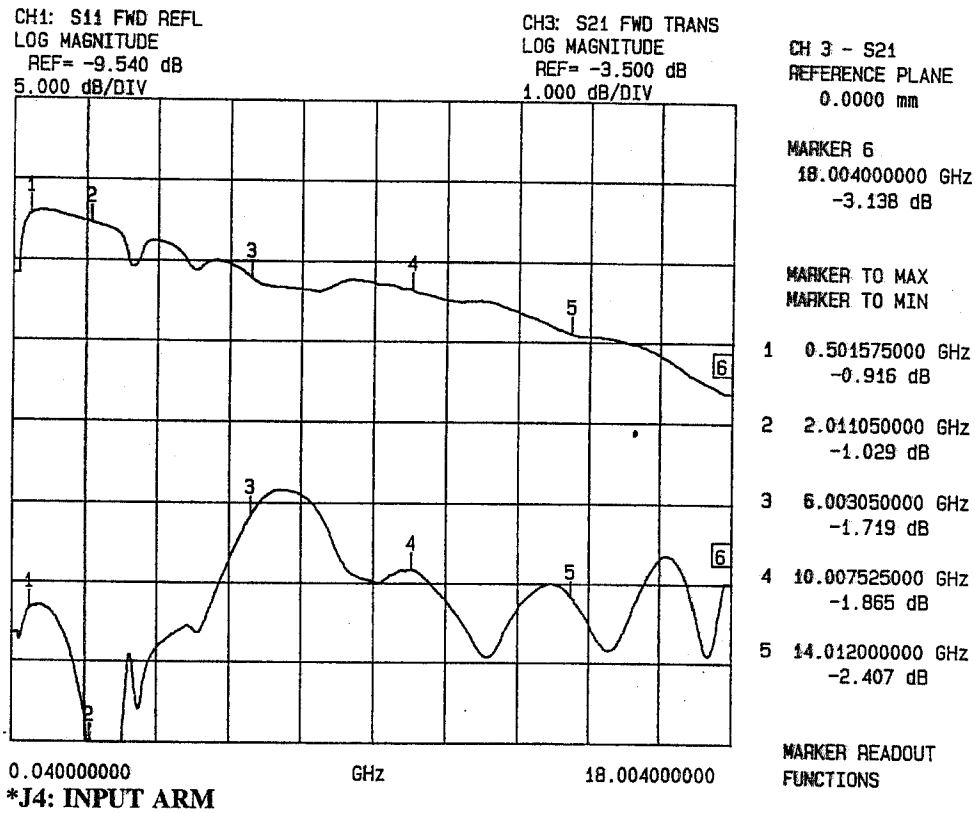
7311 G GROVE ROAD, FREDERICK, MARYLAND 21704 • Tel. (301) 662-4700 • Fax (301) 662-4938

SUMMARY TEST DATA

MODEL NUMBER	**: MSNN-3DT-04T-STANDARD**
OPTION NUMBER	**: B02, B03, 118**
SERIAL NUMBER	**: 3MS902016**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc @ 135mA; -15vdc @ 50mA**

INSERTION LOSS & RETURN LOSS*

J4-J1



***J4: INPUT ARM**

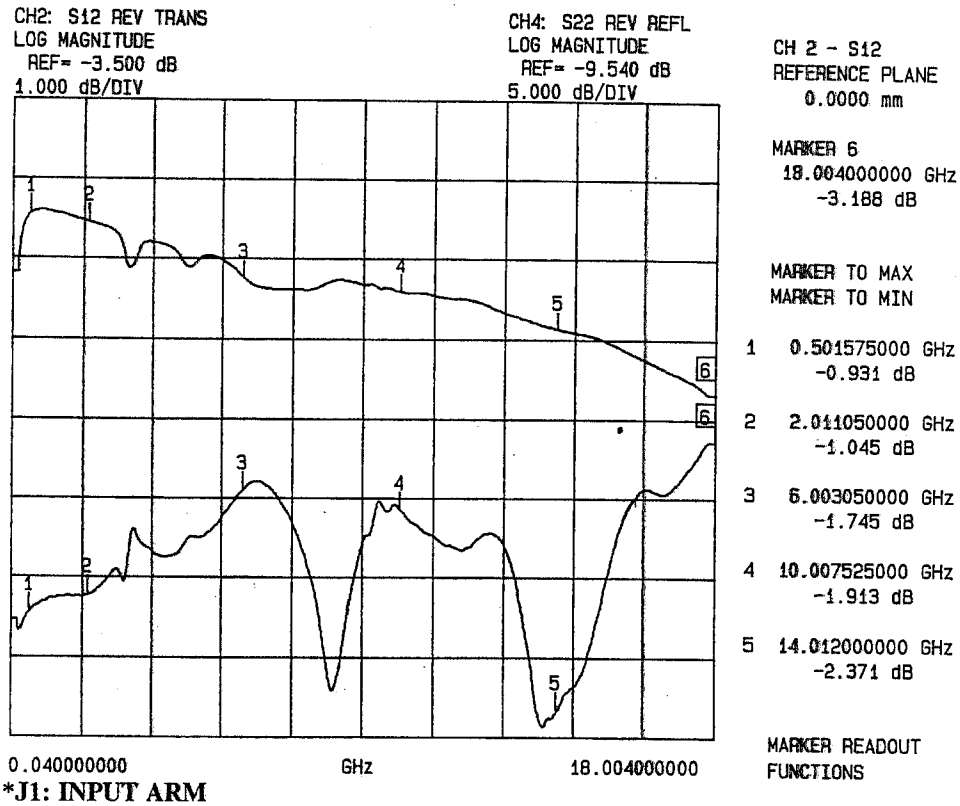
FREQUENCY	INSERTION LOSS	RETURN LOSS
500 MHz	0.91 dB	21.16 dB
2.0 GHz	1.02 dB	31.14 dB
6.0 GHz	1.71 dB	15.24 dB
10.0 GHz	1.86 dB	18.65 dB
14.0 GHz	2.40 dB	20.45 dB
18.0 GHz	3.13 dB	19.44 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J1-J4



*J1: INPUT ARM

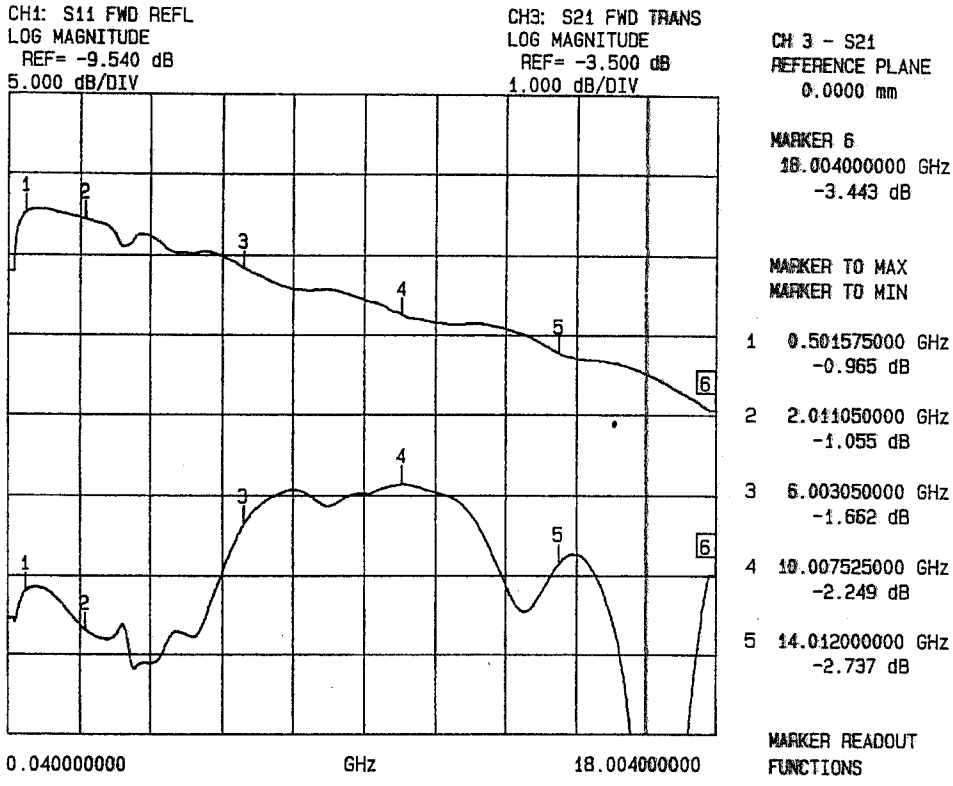
FREQUENCY	INSERTION LOSS	RETURN LOSS
500 MHz	0.93 dB	21.69 dB
2.0 GHz	1.04 dB	20.63 dB
6.0 GHz	1.74 dB	13.97 dB
10.0 GHz	1.91 dB	15.28 dB
14.0 GHz	2.37 dB	27.82 dB
18.0 GHz	3.18 dB	10.91 dB

SUMMARY TEST DATA

MODEL NUMBER	**: MSNN-3DT-04T-STANDARD**
OPTION NUMBER	**: B02, B03, 118**
SERIAL NUMBER	**: 3MS902016**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc @ 135mA; -15vdc @ 50mA**

INSERTION LOSS & RETURN LOSS*

J4-J2



***J4: INPUT ARM**

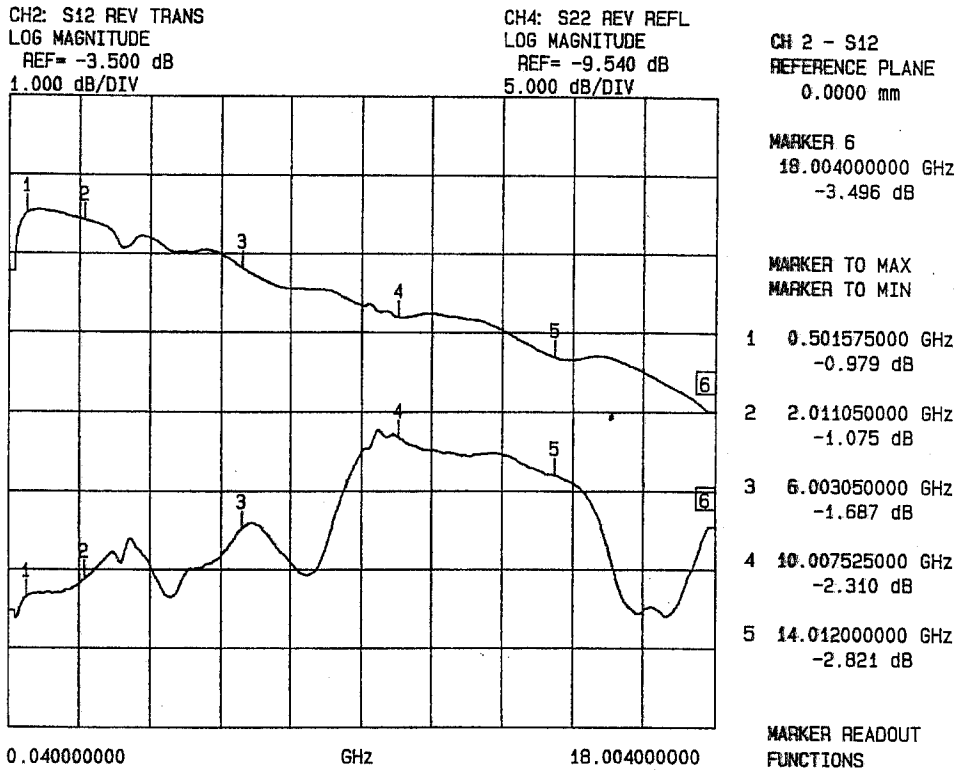
FREQUENCY	INSERTION LOSS	RETURN LOSS
500 MHz	0.96 dB	20.43 dB
2.0 GHz	1.05 dB	23.00 dB
6.0 GHz	1.66 dB	16.28 dB
10.0 GHz	2.24 dB	13.82 dB
14.0 GHz	2.73 dB	18.68 dB
18.0 GHz	3.44 dB	19.45 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J2-J4



*J2: INPUT ARM

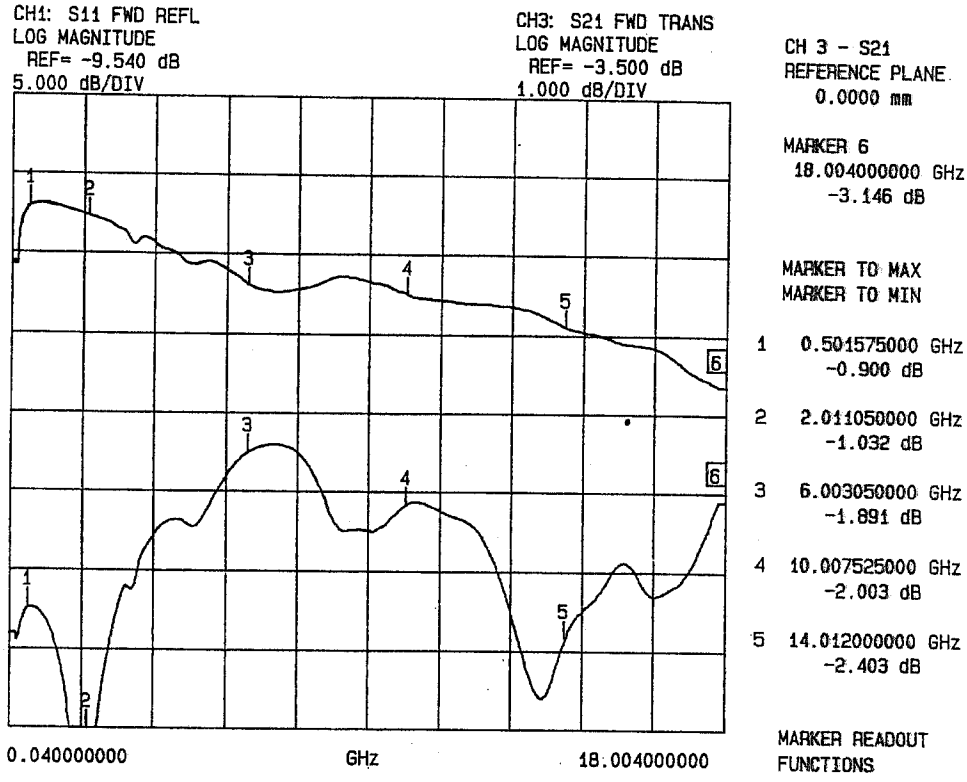
FREQUENCY	INSERTION LOSS	RETURN LOSS
500 MHz	0.97 dB	21.27 dB
2.0 GHz	1.07 dB	20.10 dB
6.0 GHz	1.68 dB	16.89 dB
10.0 GHz	2.31 dB	11.16 dB
14.0 GHz	2.82 dB	13.56 dB
18.0 GHz	3.49 dB	16.82 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J4-J3



***J4: INPUT ARM**

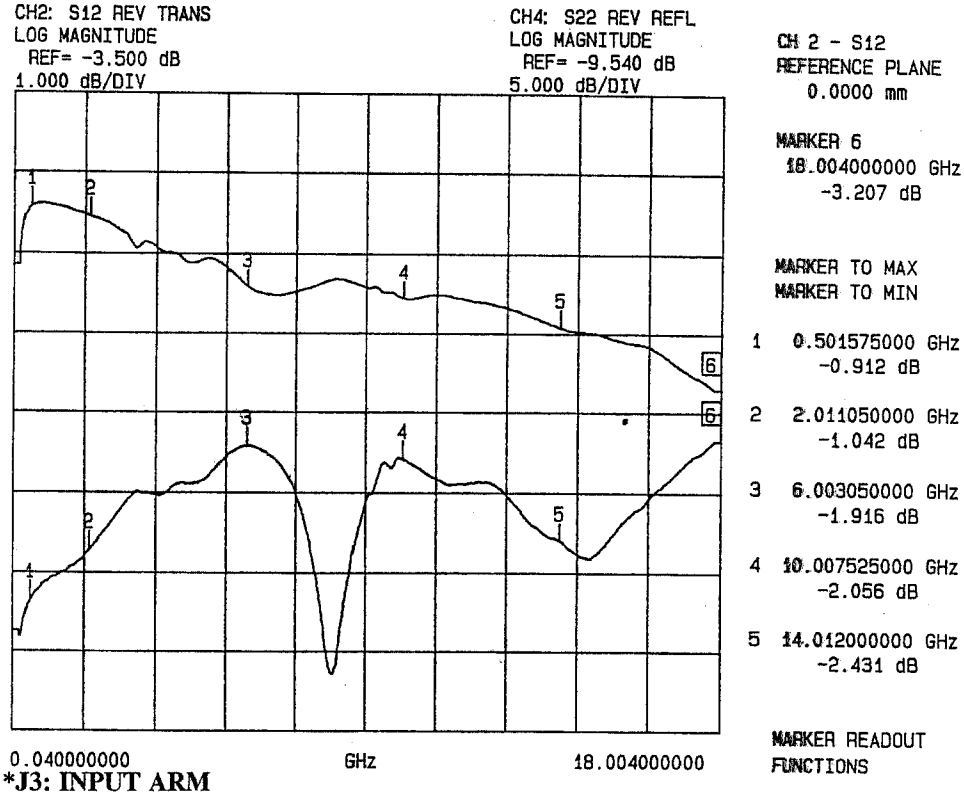
FREQUENCY	INSERTION LOSS	RETURN LOSS
500 MHz	0.90 dB	21.89 dB
2.0 GHz	1.03 dB	41.46 dB
6.0 GHz	1.89 dB	12.02 dB
10.0 GHz	2.00 dB	15.31 dB
14.0 GHz	2.40 dB	23.73 dB
18.0 GHz	3.14 dB	15.07 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J3-J4



*J3: INPUT ARM

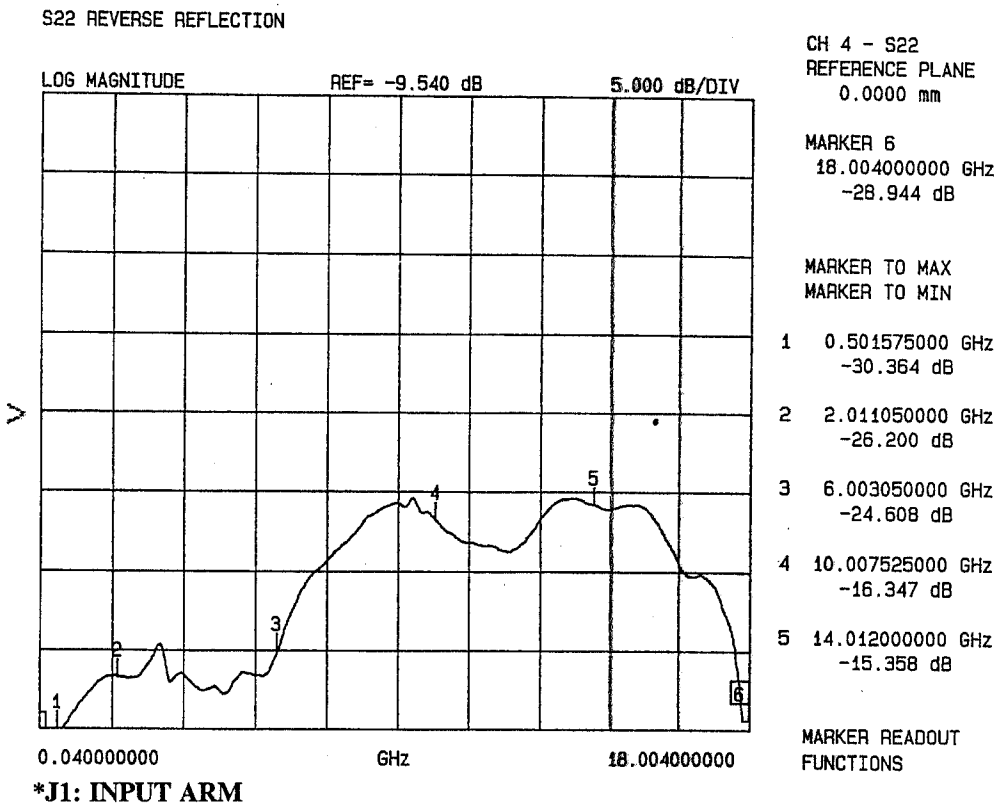
FREQUENCY	INSERTION LOSS	RETURN LOSS
500 MHz	0.91 dB	21.25 dB
2.0 GHz	1.04 dB	18.02 dB
6.0 GHz	1.91 dB	11.61 dB
10.0 GHz	2.05 dB	12.46 dB
14.0 GHz	2.43 dB	17.54 dB
18.0 GHz	3.20 dB	11.28 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

OFF ARM TERMINATION*

J1



*J1: INPUT ARM

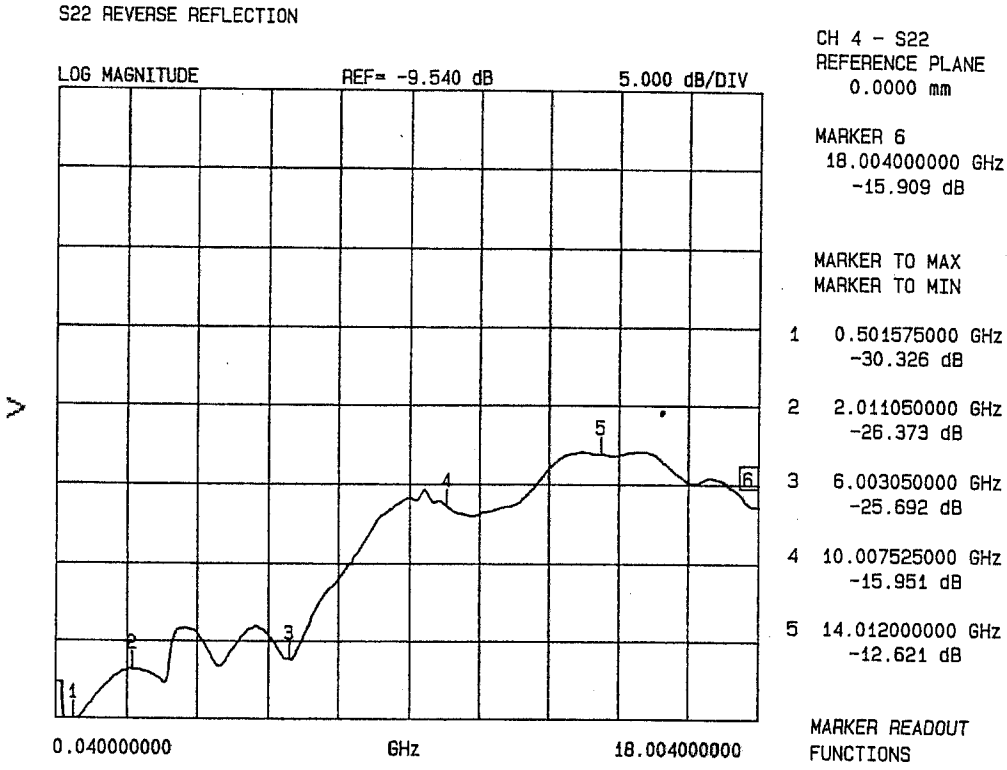
FREQUENCY	RETURN LOSS
500 MHz	30.3 dB
2.0 GHz	26.2 dB
6.0 GHz	24.6 dB
10.0 GHz	16.3 dB
14.0 GHz	15.3 dB
18.0 GHz	28.9 dB

SUMMARY TEST DATA

MODEL NUMBER	**: MSNN-3DT-04T-STANDARD**
OPTION NUMBER	**: B02, B03, 118**
SERIAL NUMBER	**: 3MS902016**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc @ 135mA; -15vdc @ 50mA**

OFF ARM TERMINATION*

J2



***J2: INPUT ARM**

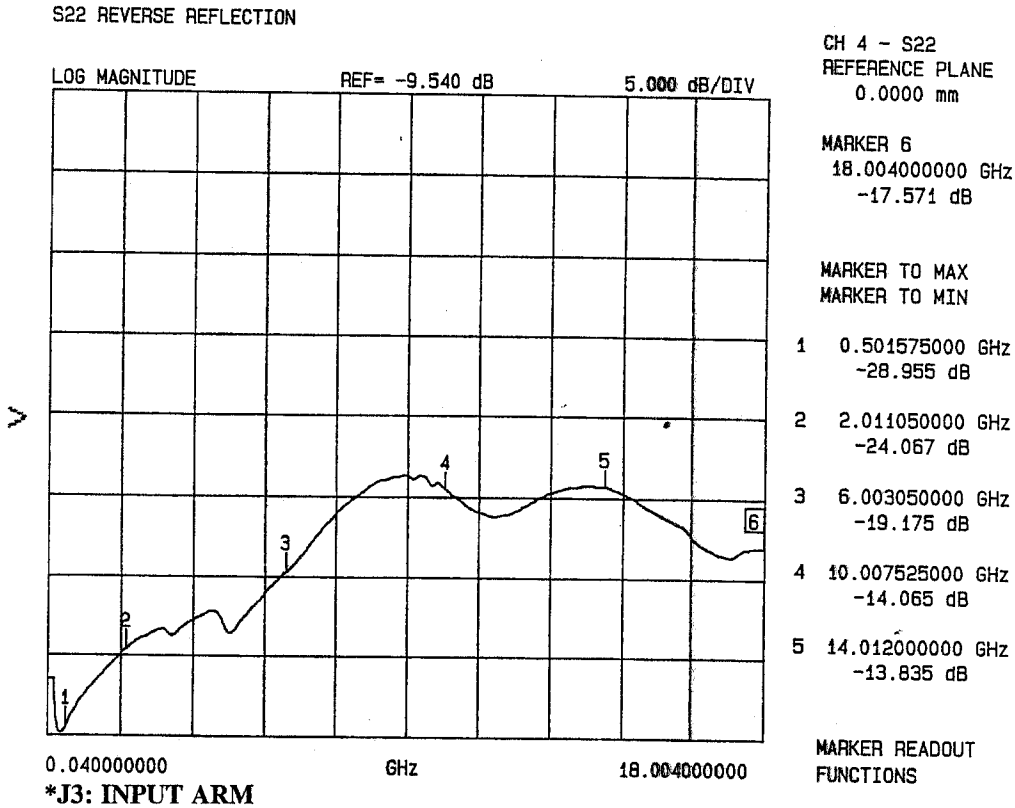
FREQUENCY	RETURN LOSS
500 MHz	30.3 dB
2.0 GHz	26.3 dB
6.0 GHz	25.6 dB
10.0 GHz	15.9 dB
14.0 GHz	12.6 dB
18.0 GHz	15.9 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

OFF ARM TERMINATION*

J3



*J3: INPUT ARM

FREQUENCY	RETURN LOSS
500 MHz	28.9 dB
2.0 GHz	24.0 dB
6.0 GHz	19.1 dB
10.0 GHz	14.0 dB
14.0 GHz	13.8 dB
18.0 GHz	17.5 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)

FREQUENCY	J1	J2	J3
100 MHz	98 dB	96 dB	96 dB
200 MHz	98 dB	98 dB	98 dB
500 MHz	98 dB	98 dB	98 dB
1 GHz	96 dB	96 dB	96 dB
2 GHz	98 dB	96 dB	98 dB
4 GHz	96 dB	96 dB	96 dB
6 GHz	94 dB	95 dB	94 dB
8 GHz	92 dB	92 dB	92 dB
10 GHz	92 dB	92 dB	92 dB
12 GHz	90 dB	88 dB	88 dB
14 GHz	86 dB	86 dB	86 dB
16 GHz	84 dB	84 dB	84 dB
18 GHz	82 dB	82 dB	82 dB

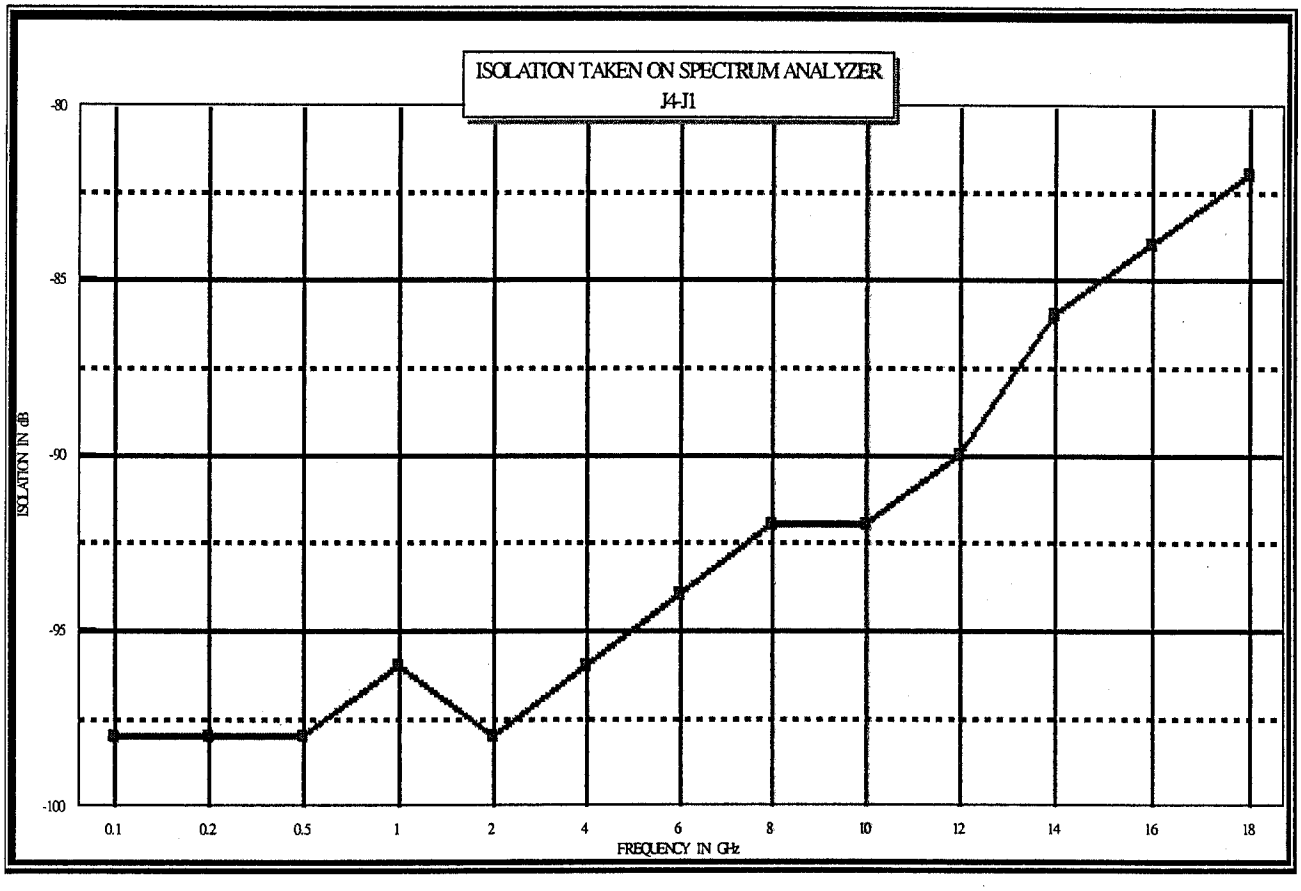
*J4: INPUT ARM

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)

J4-J1

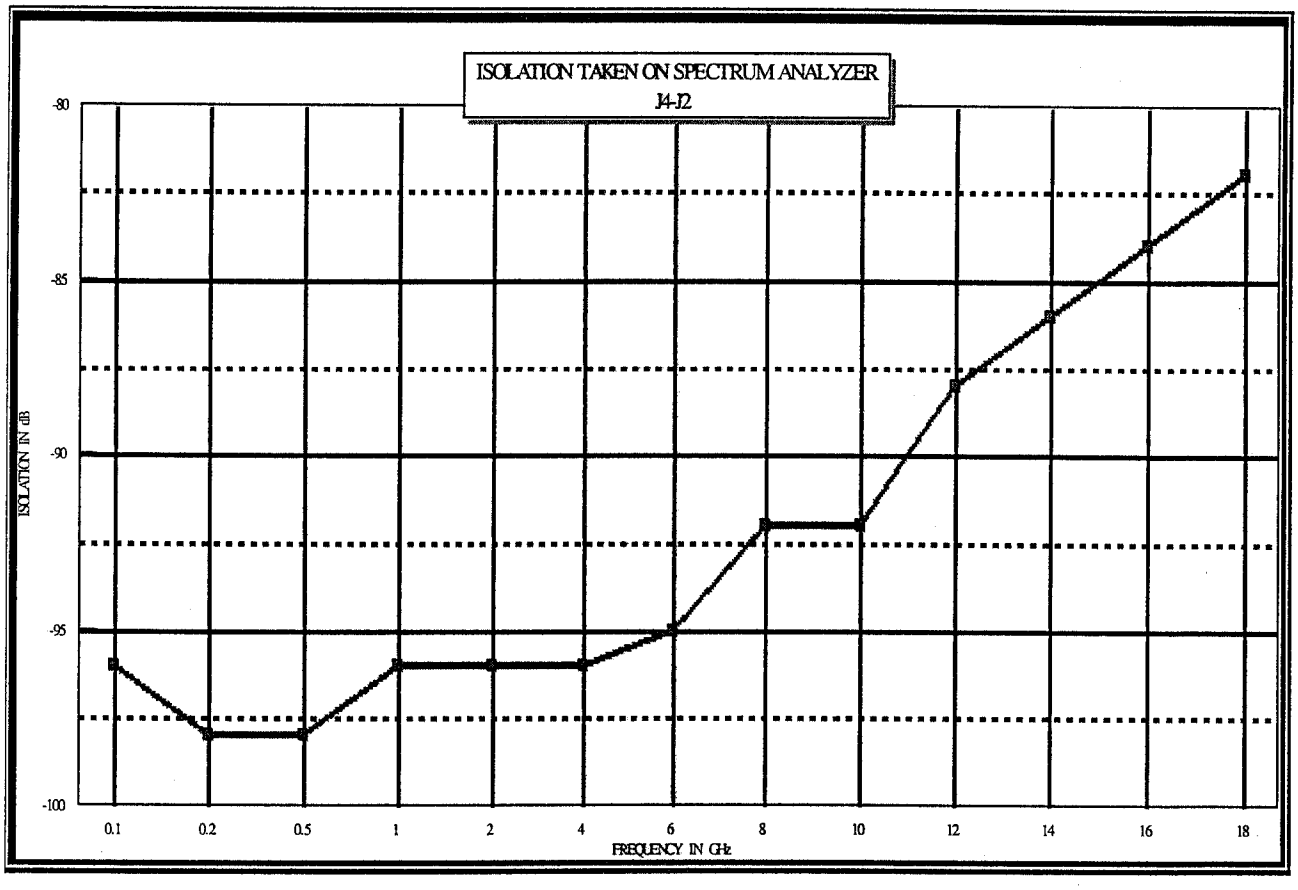


*J4: INPUT ARM

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)
J4-J2

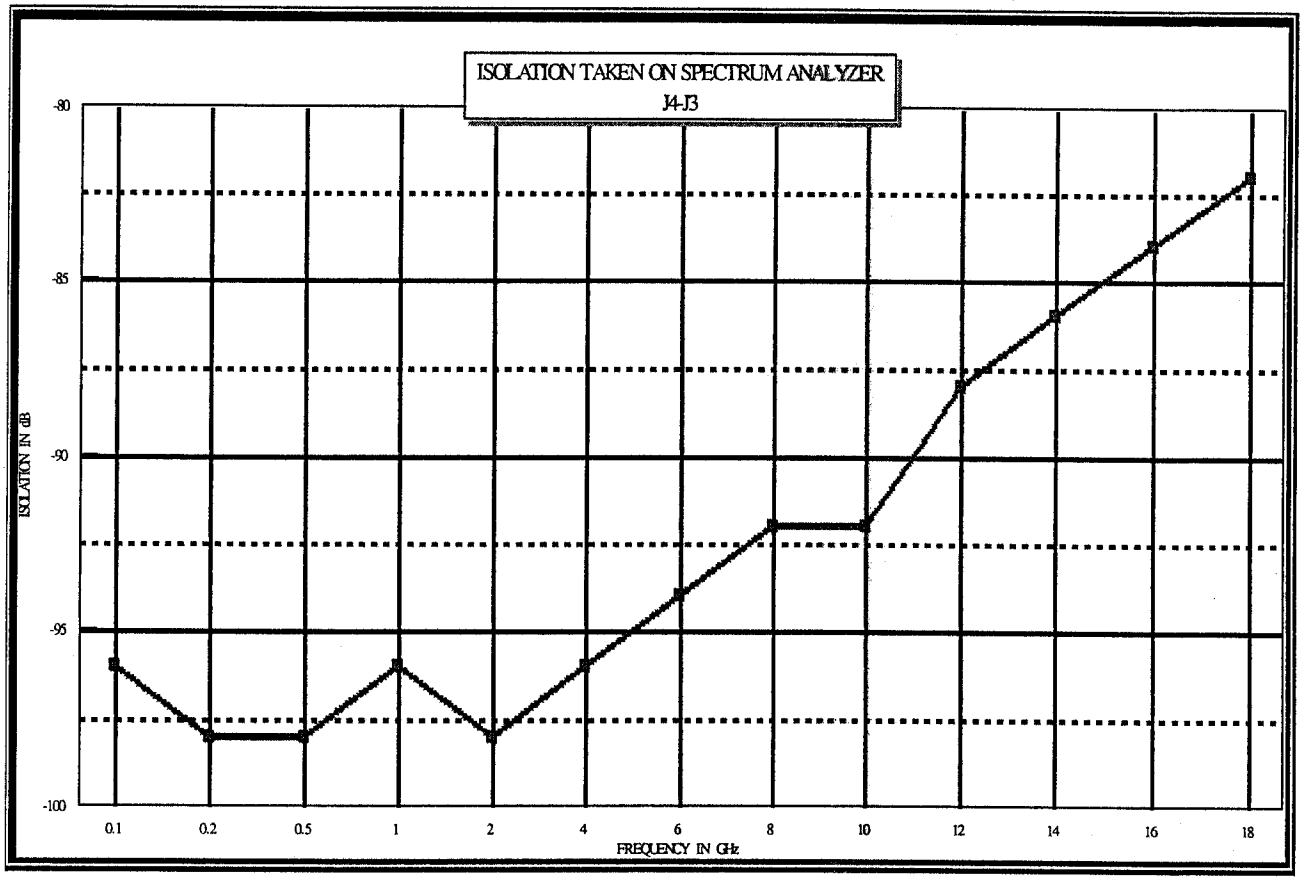


*J4: INPUT ARM

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)
J4-J3



*J4: INPUT ARM

AMERICAN MICROWAVE CORPORATION

TEST DATA

FROM

40 MHz TO 4 GHz

HIGH ISOLATION

HIGH SPEED

LOW INSERTION LOSS

RECTANGULAR

SOLID STATE SWITCH
(SURFACE MOUNTABLE)

AMC MODEL No:
MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118
(Serial Number: 3MS902016)

PREPARED
BY
KATIE BAISEY

TESTED
BY
RENE AFABLE

OCTOBER 3, 2000

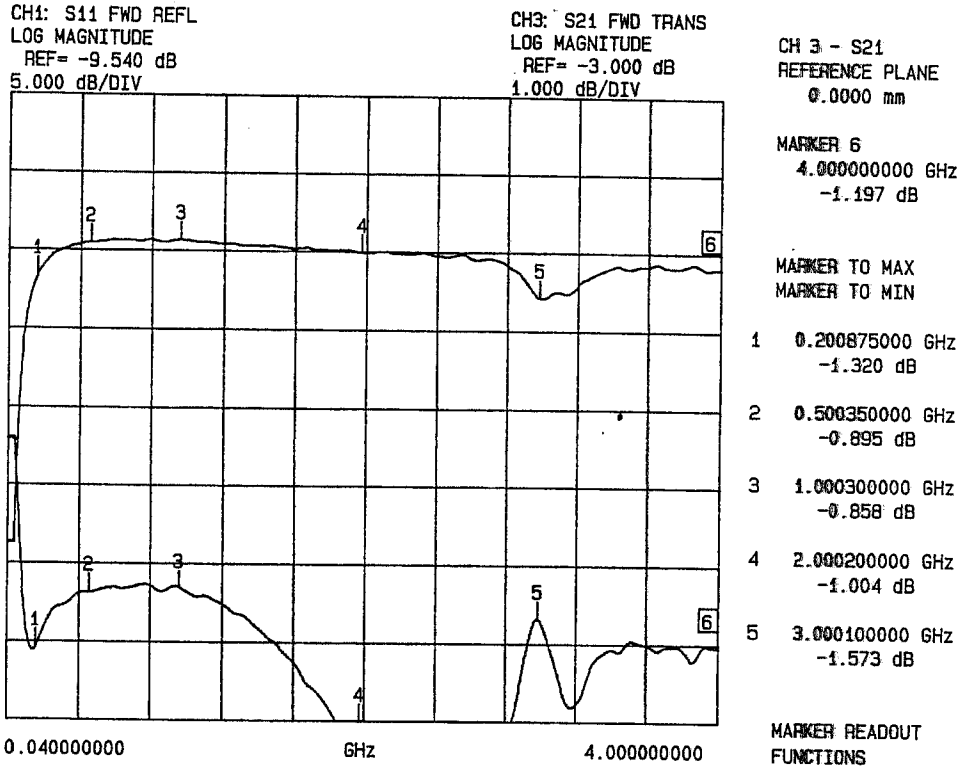
7311 G GROVE ROAD, FREDERICK, MARYLAND 21704 • Tel. (301) 662-4700 • Fax (301) 662-4938

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J4-J1



*J4: INPUT ARM

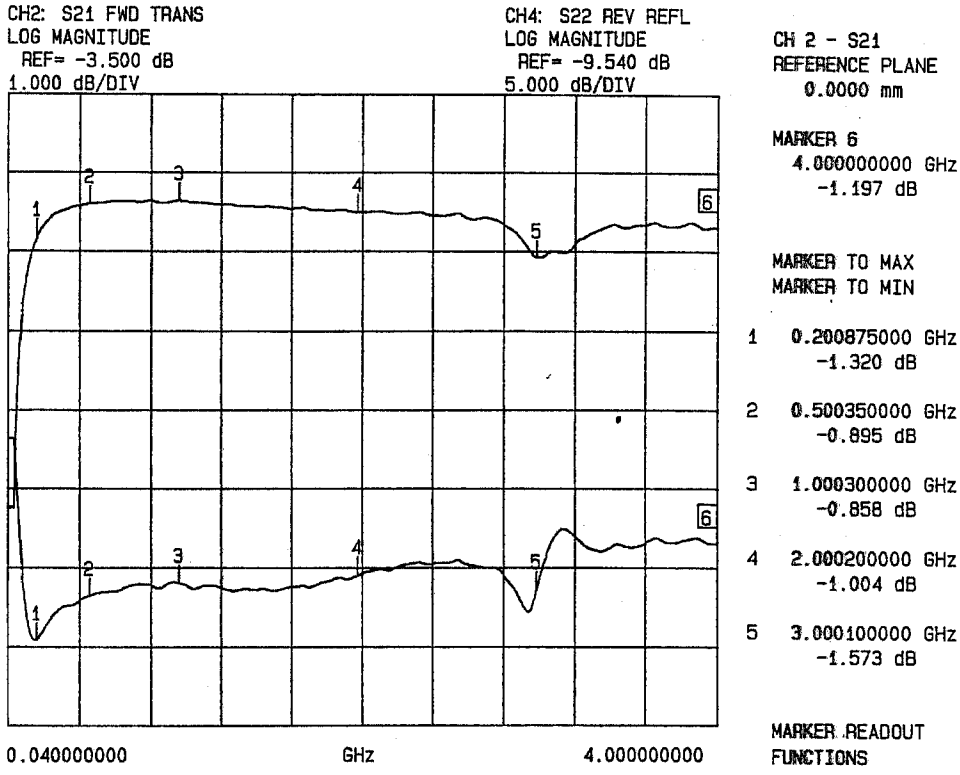
FREQUENCY	INSERTION LOSS	RETURN LOSS
200 MHz	1.32 dB	24.86 dB
500 MHz	0.89 dB	21.37 dB
1.0 GHz	0.85 dB	21.06 dB
2.0 GHz	1.00 dB	31.35 dB
3.0 GHz	1.57 dB	22.90 dB
4.0 GHz	1.19 dB	24.69 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J1-J4



***J1: INPUT ARM**

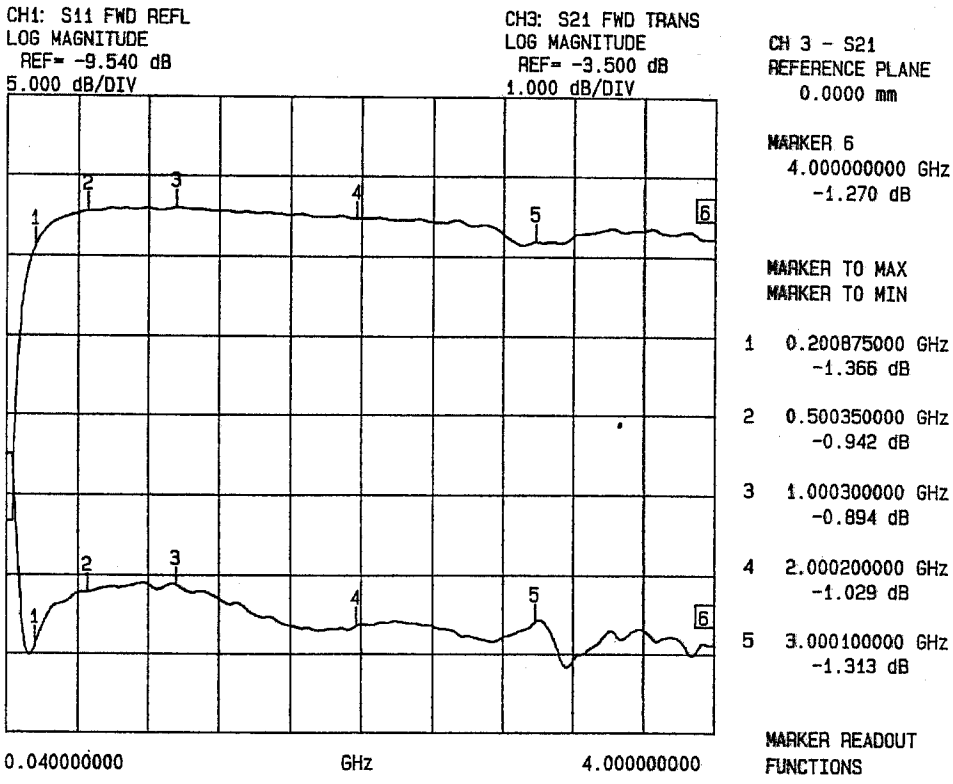
FREQUENCY	INSERTION LOSS	RETURN LOSS
200 MHz	1.32 dB	24.10 dB
500 MHz	0.89 dB	21.27 dB
1.0 GHz	0.85 dB	20.49 dB
2.0 GHz	1.00 dB	19.99 dB
3.0 GHz	1.57 dB	20.94 dB
4.0 GHz	1.19 dB	18.03 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J4-J2



***J4: INPUT ARM**

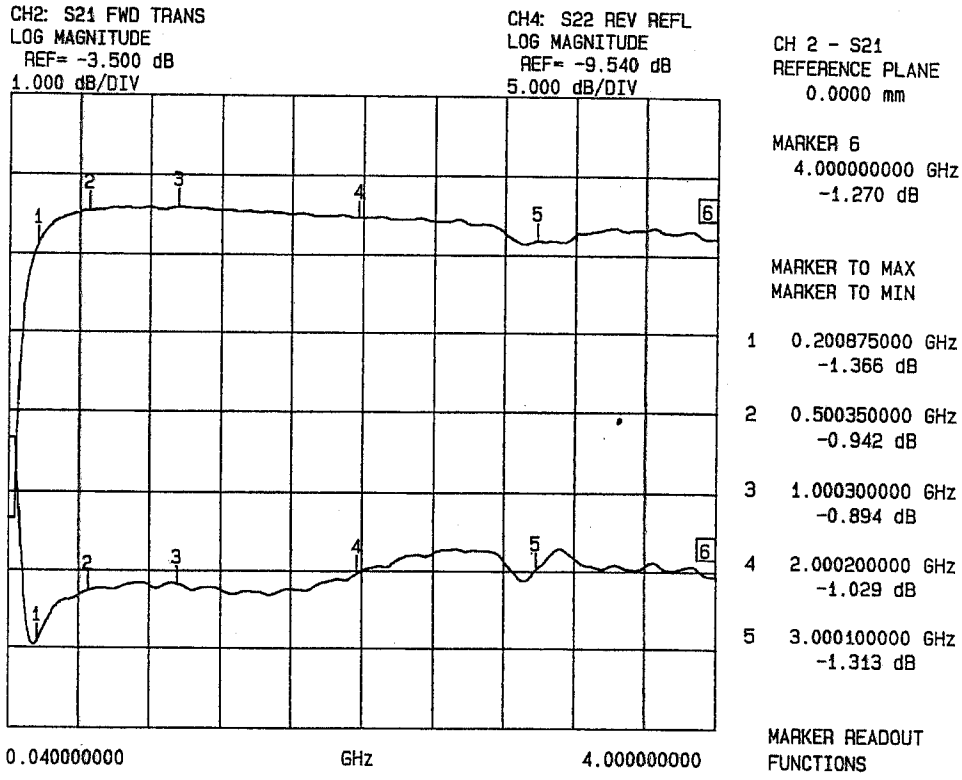
FREQUENCY	INSERTION LOSS	RETURN LOSS
200 MHz	1.36 dB	23.96 dB
500 MHz	0.94 dB	20.58 dB
1.0 GHz	0.89 dB	20.17 dB
2.0 GHz	1.02 dB	22.73 dB
3.0 GHz	1.31 dB	22.49 dB
4.0 GHz	1.27 dB	23.96 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J2-J4



*J2: INPUT ARM

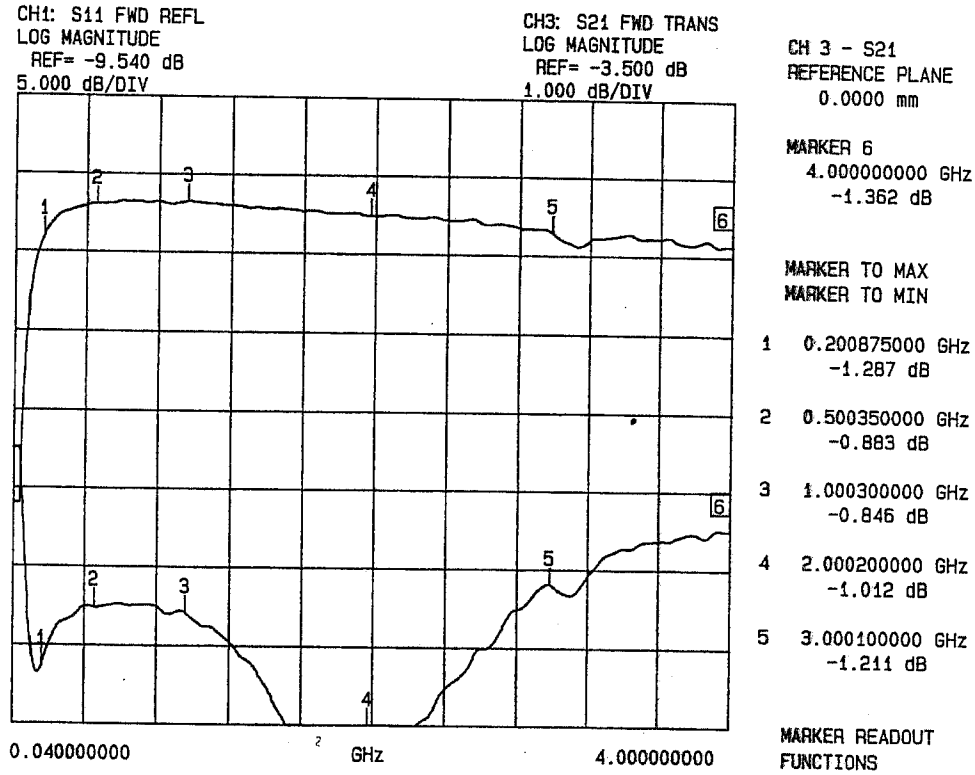
FREQUENCY	INSERTION LOSS	RETURN LOSS
200 MHz	1.36 dB	24.11 dB
500 MHz	0.94 dB	20.81 dB
1.0 GHz	0.89 dB	20.39 dB
2.0 GHz	1.02 dB	19.66 dB
3.0 GHz	1.31 dB	19.38 dB
4.0 GHz	1.27 dB	19.87 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J4-J3



*J4: INPUT ARM

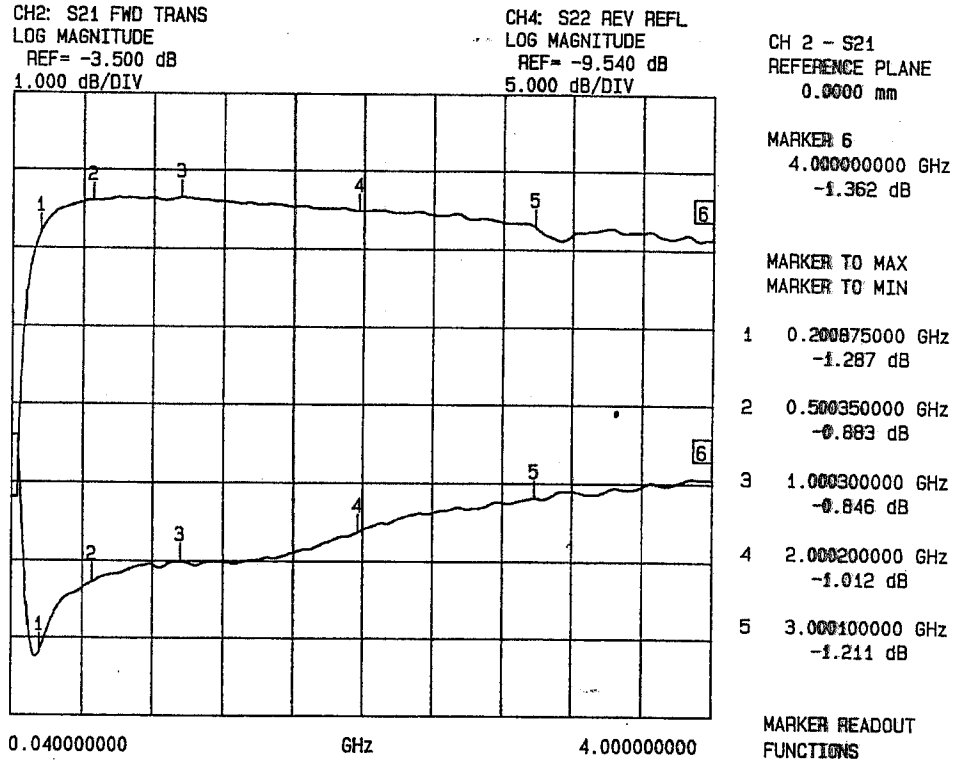
FREQUENCY	INSERTION LOSS	RETURN LOSS
200 MHz	1.28 dB	25.78 dB
500 MHz	0.88 dB	22.09 dB
1.0 GHz	0.84 dB	22.50 dB
2.0 GHz	1.01 dB	39.25 dB
3.0 GHz	1.21 dB	20.43 dB
4.0 GHz	1.36 dB	17.01 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J3-J4



*J3: INPUT ARM

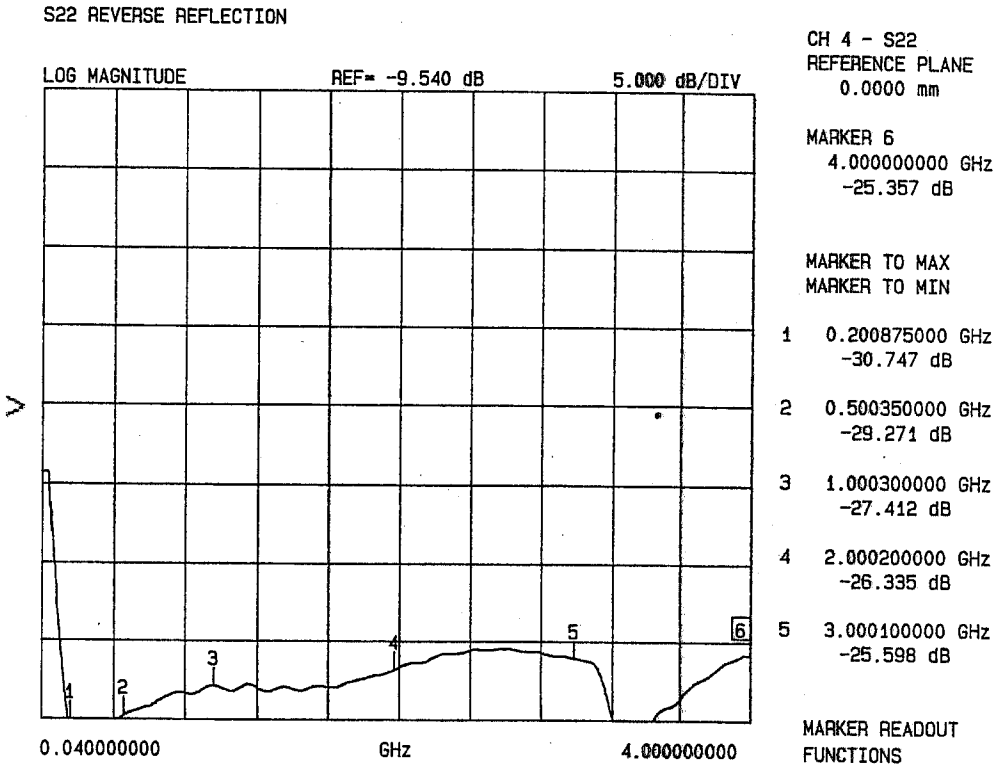
FREQUENCY	INSERTION LOSS	RETURN LOSS
200 MHz	1.28 dB	25.38 dB
500 MHz	0.88 dB	20.84 dB
1.0 GHz	0.84 dB	19.56 dB
2.0 GHz	1.01 dB	17.60 dB
3.0 GHz	1.21 dB	15.44 dB
4.0 GHz	1.36 dB	14.24 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

OFF ARM TERMINATION*

J1



*J1: INPUT ARM

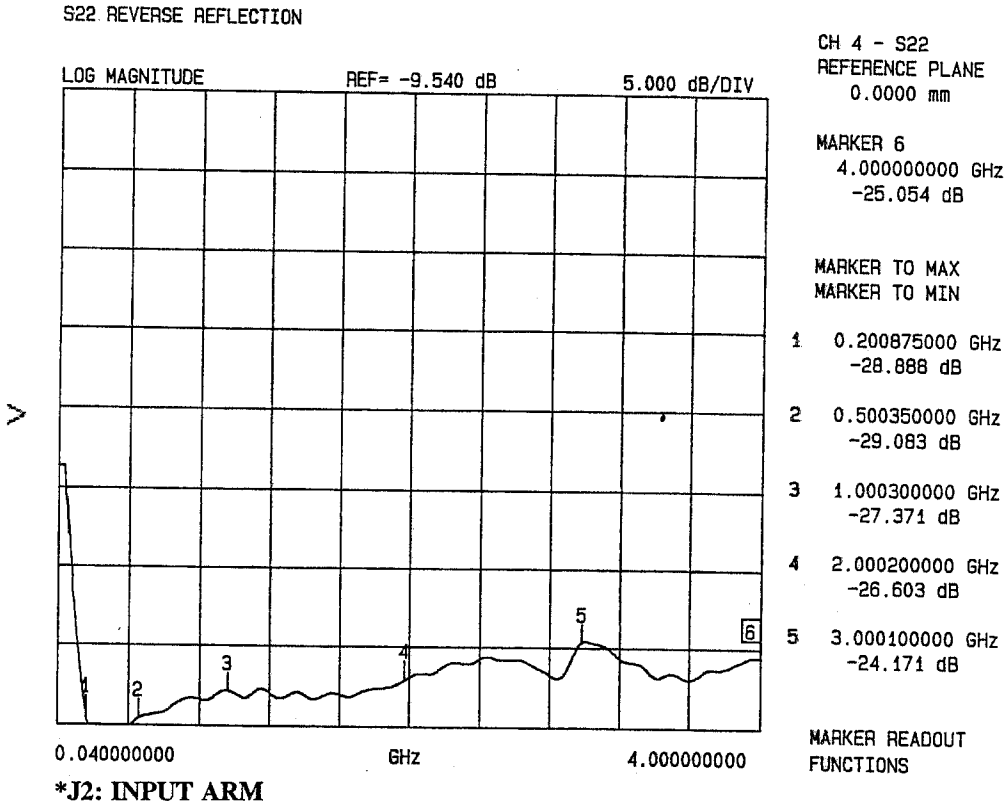
FREQUENCY	RETURN LOSS
200 MHz	30.7 dB
500 MHz	29.2 dB
1.0 GHz	27.4 dB
2.0 GHz	26.3 dB
3.0 GHz	25.5 dB
4.0 GHz	25.3 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

OFF ARM TERMINATION*

J2



*J2: INPUT ARM

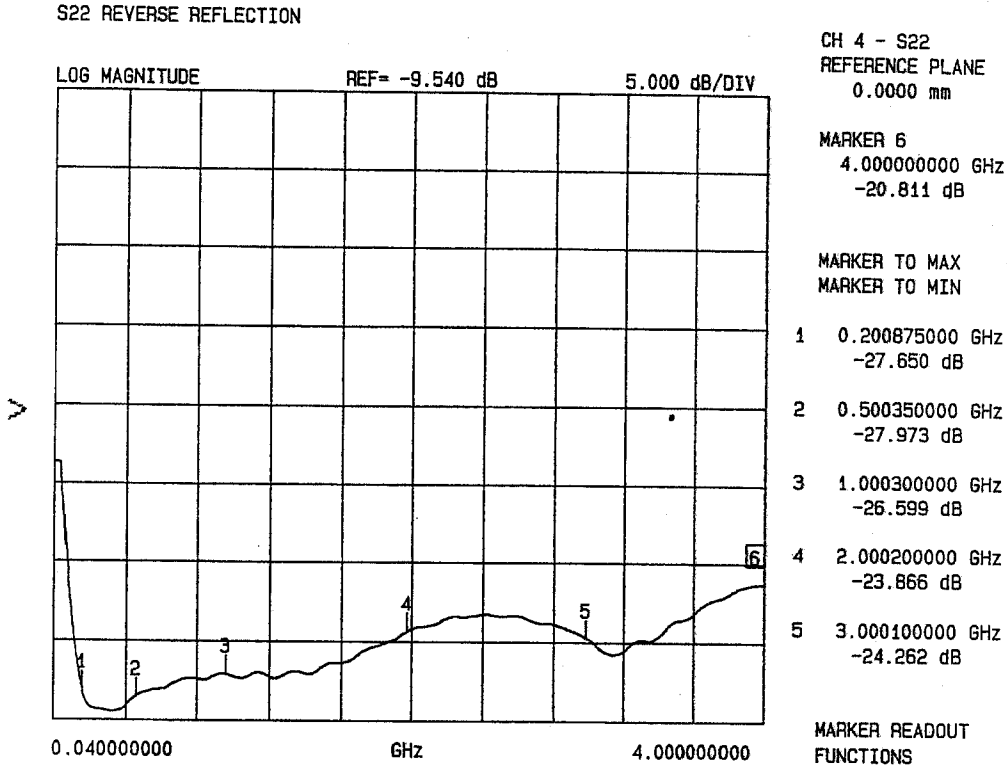
FREQUENCY	RETURN LOSS
200 MHz	28.8 dB
500 MHz	29.0 dB
1.0 GHz	27.3 dB
2.0 GHz	26.6 dB
3.0 GHz	24.1 dB
4.0 GHz	25.0 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

OFF ARM TERMINATION*

J3



*J3: INPUT ARM

FREQUENCY	RETURN LOSS
200 MHz	27.6 dB
500 MHz	27.9 dB
1.0 GHz	26.5 dB
2.0 GHz	23.8 dB
3.0 GHz	24.2 dB
4.0 GHz	20.8 dB

AMERICAN MICROWAVE CORPORATION

TEST DATA

FROM

1 GHz TO 18 GHz

HIGH ISOLATION

HIGH SPEED

LOW INSERTION LOSS

RECTANGULAR

SOLID STATE SWITCH
(SURFACE MOUNTABLE)

AMC MODEL No:
MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118
(Serial Number: 3MS902016)

PREPARED
BY
KATIE BAISEY

TESTED
BY
RENE AFABLE

OCTOBER 3, 2000

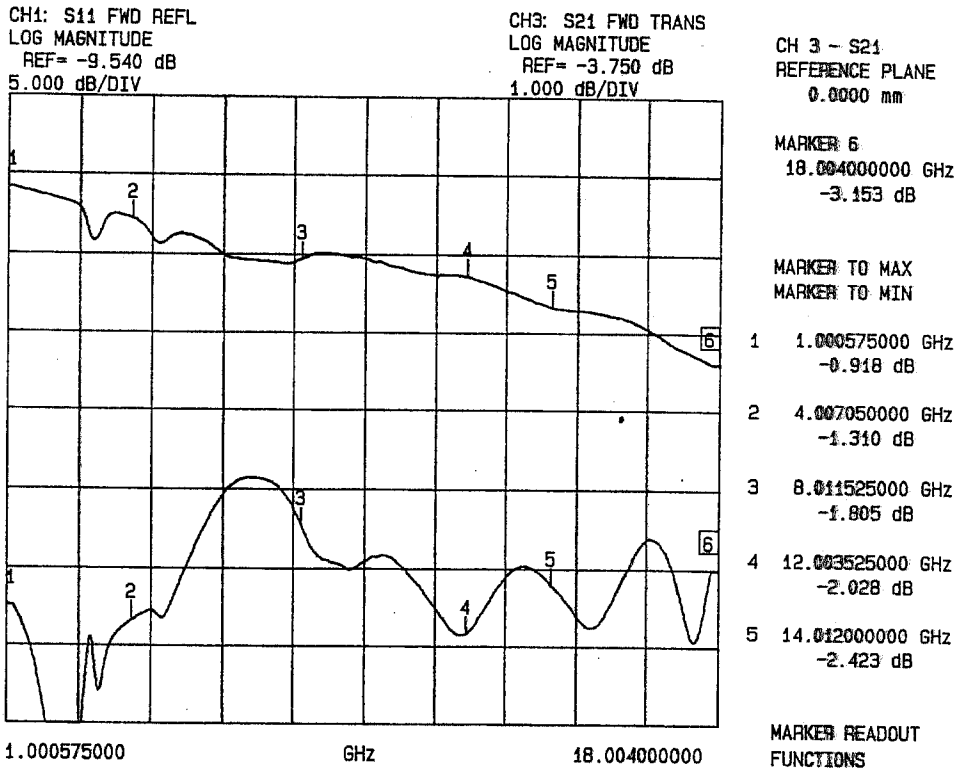
7311 G GROVE ROAD, FREDERICK, MARYLAND 21704 • Tel. (301) 662-4700 • Fax (301) 662-4938

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J4-J1



***J4: INPUT ARM**

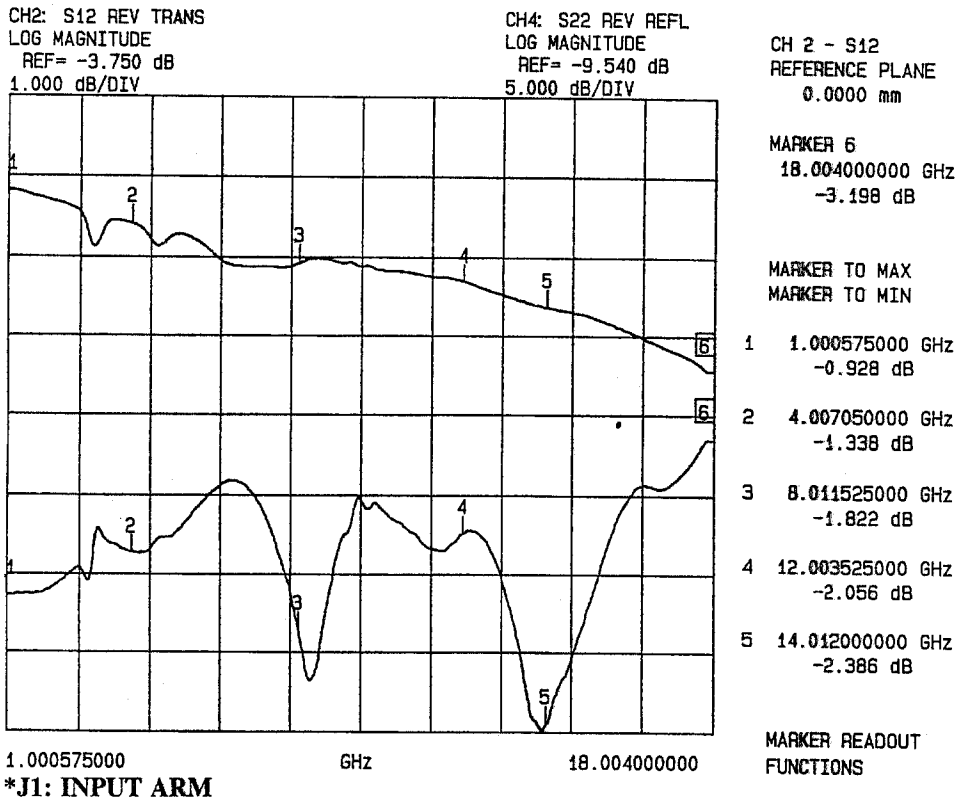
FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	0.91 dB	21.93 dB
4.0 GHz	1.31 dB	22.77 dB
8.0 GHz	1.80 dB	16.78 dB
12.0 GHz	2.02 dB	23.69 dB
14.0 GHz	2.42 dB	20.58 dB
18.0 GHz	3.15 dB	19.56 dB

SUMMARY TEST DATA

MODEL NUMBER	**: MSNN-3DT-04T-STANDARD**
OPTION NUMBER	**: B02, B03, 118**
SERIAL NUMBER	**: 3MS902016**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc @ 135mA; -15vdc @ 50mA**

INSERTION LOSS & RETURN LOSS*

J1-J4



***J1: INPUT ARM**

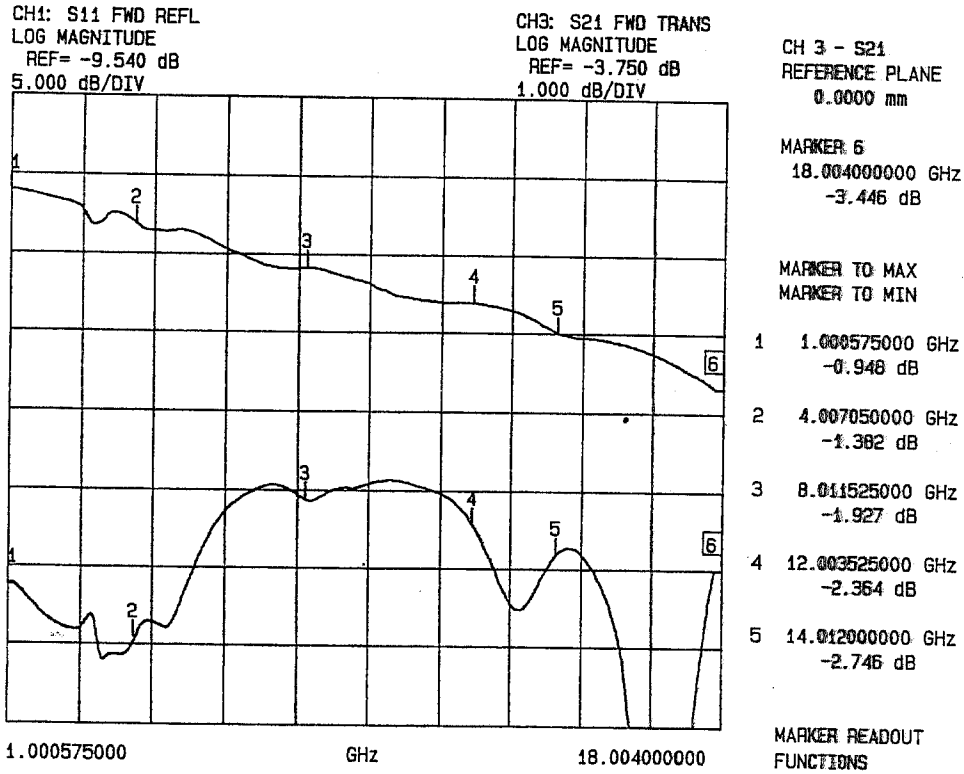
FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	0.92 dB	20.91 dB
4.0 GHz	1.33 dB	18.13 dB
8.0 GHz	1.82 dB	23.13 dB
12.0 GHz	2.05 dB	16.88 dB
14.0 GHz	2.38 dB	29.11 dB
18.0 GHz	3.19 dB	11.01 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J4-J2



*J4: INPUT ARM

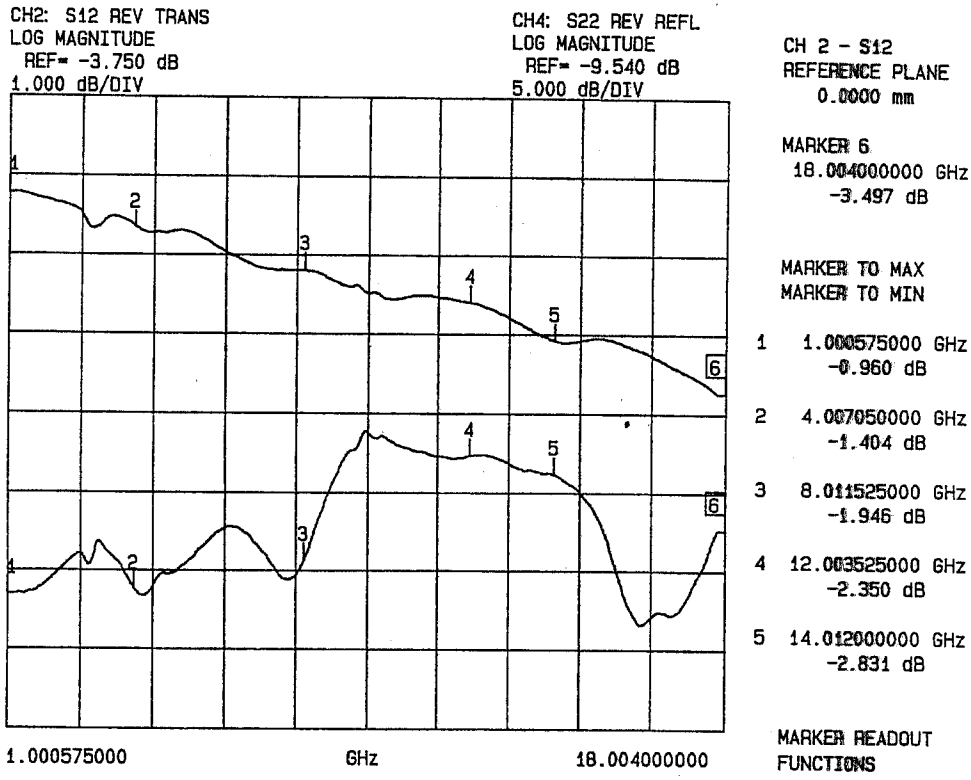
FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	0.94 dB	20.68 dB
4.0 GHz	1.38 dB	24.13 dB
8.0 GHz	1.92 dB	15.13 dB
12.0 GHz	2.36 dB	16.71 dB
14.0 GHz	2.74 dB	18.57 dB
18.0 GHz	3.44 dB	19.50 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J2-J4



*J2: INPUT ARM

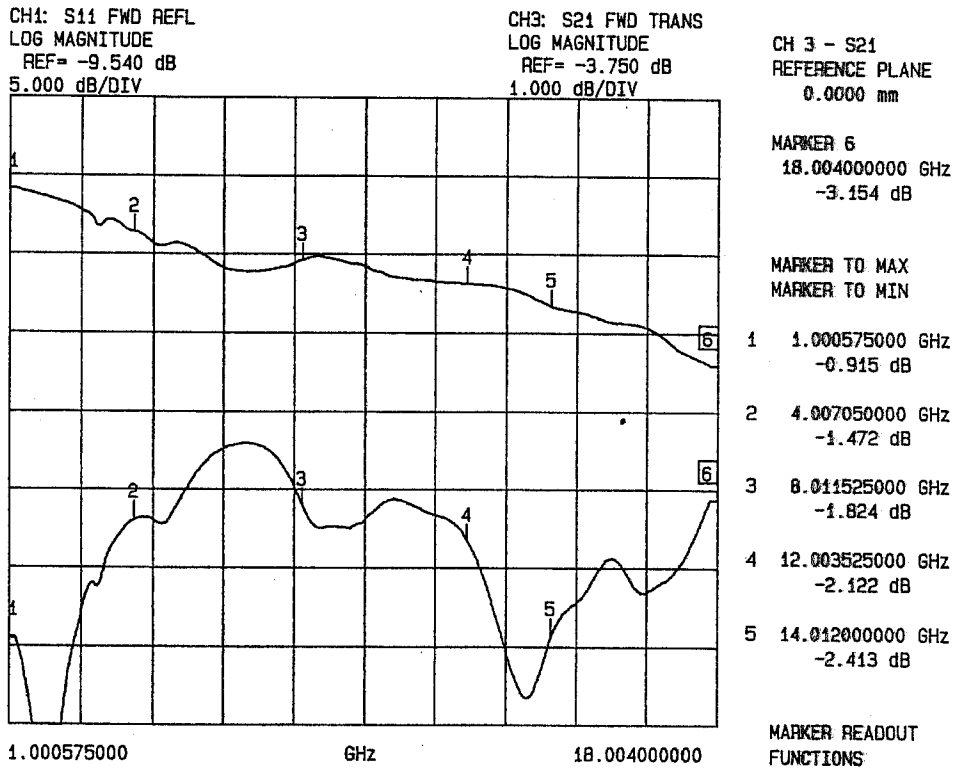
FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	0.96 dB	21.06 dB
4.0 GHz	1.40 dB	20.84 dB
8.0 GHz	1.94 dB	18.89 dB
12.0 GHz	2.35 dB	12.17 dB
14.0 GHz	2.83 dB	13.37 dB
18.0 GHz	3.49 dB	16.92 dB

SUMMARY TEST DATA

MODEL NUMBER	**: MSNN-3DT-04T-STANDARD**
OPTION NUMBER	**: B02, B03, 118**
SERIAL NUMBER	**: 3MS902016**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc @ 135mA; -15vdc @ 50mA**

INSERTION LOSS & RETURN LOSS*

J4-J3



***J4: INPUT ARM**

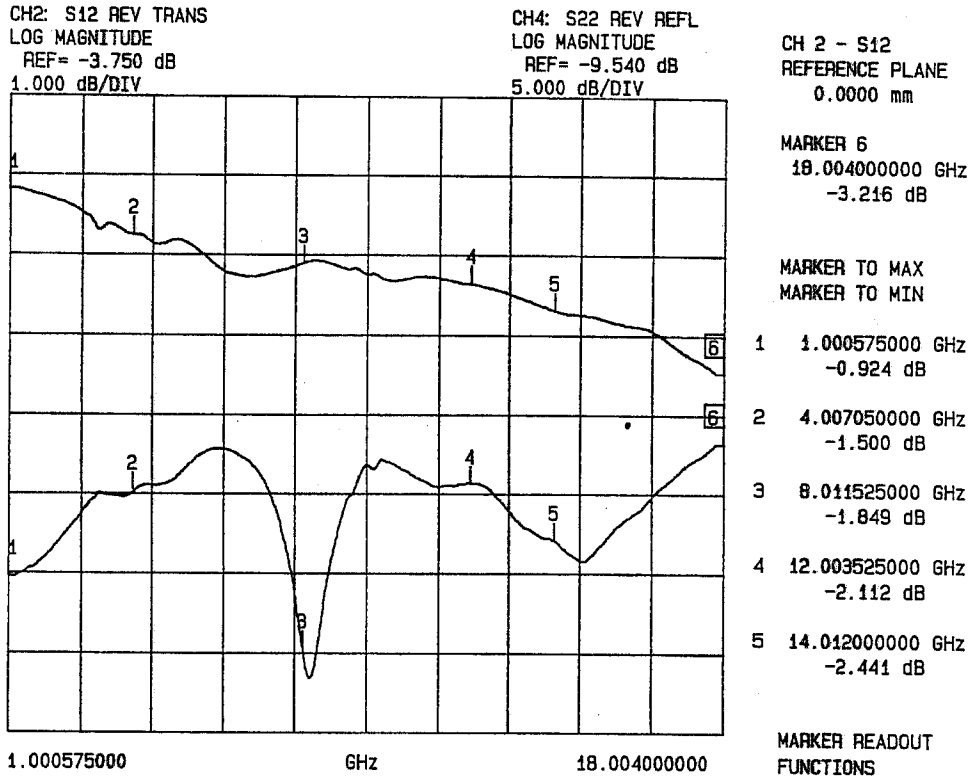
FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	0.91 dB	23.95 dB
4.0 GHz	1.47 dB	16.41 dB
8.0 GHz	1.82 dB	15.51 dB
12.0 GHz	2.12 dB	17.85 dB
14.0 GHz	2.41 dB	23.86 dB
18.0 GHz	3.15 dB	16.15 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

INSERTION LOSS & RETURN LOSS*

J3-J4



*J3: INPUT ARM

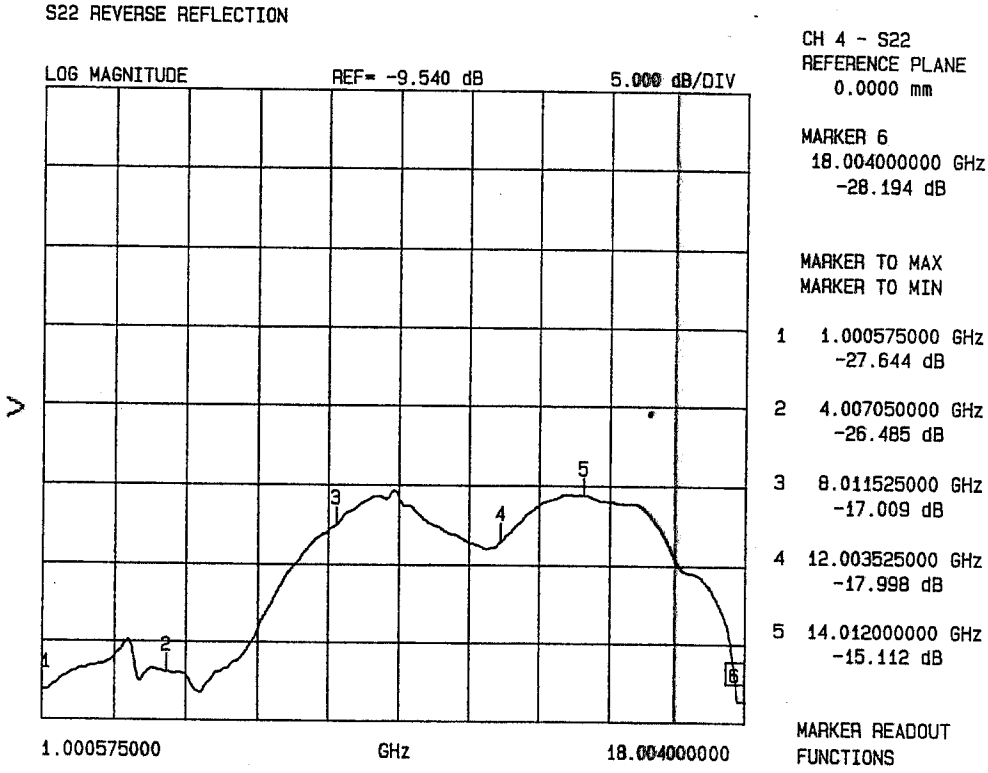
FREQUENCY	INSERTION LOSS	RETURN LOSS
1.0 GHz	0.92 dB	19.78 dB
4.0 GHz	1.50 dB	14.32 dB
8.0 GHz	1.84 dB	24.28 dB
12.0 GHz	2.11 dB	13.85 dB
14.0 GHz	2.44 dB	17.46 dB
18.0 GHz	3.21 dB	11.30 dB

SUMMARY TEST DATA

MODEL NUMBER	**: MSNN-3DT-04T-STANDARD**
OPTION NUMBER	**: B02, B03, 118**
SERIAL NUMBER	**: 3MS902016**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc @ 135mA; -15vdc @ 50mA**

OFF ARM TERMINATION*

J1



***J1: INPUT ARM**

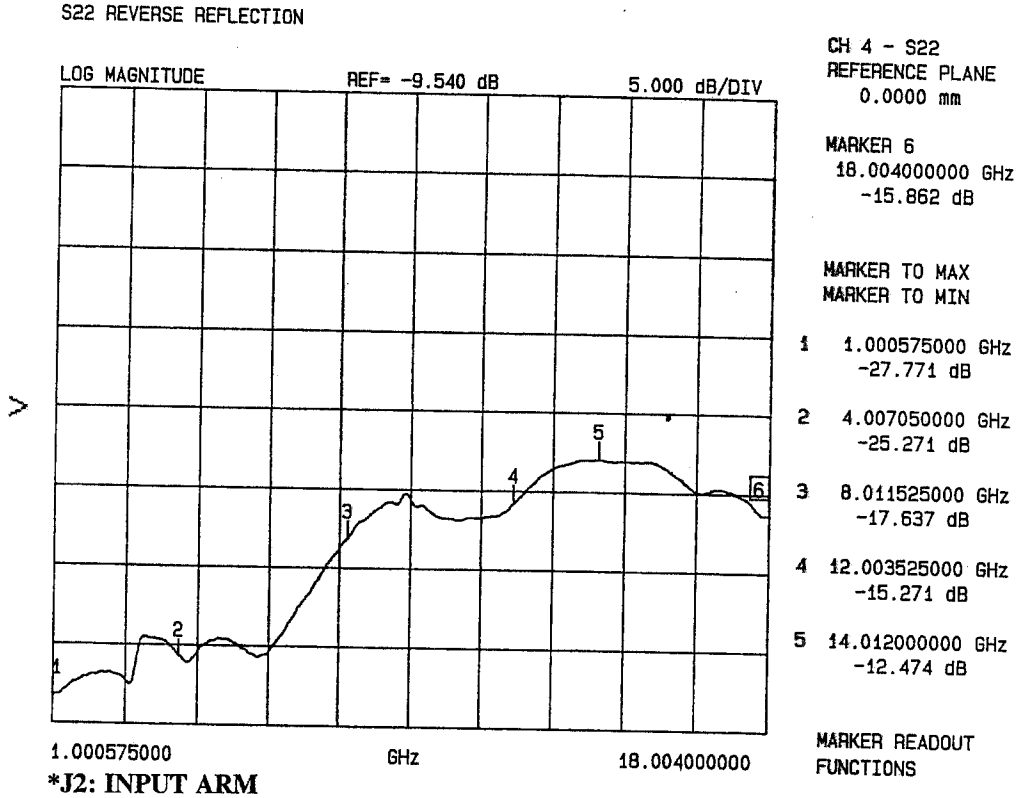
FREQUENCY	RETURN LOSS
1.0 GHz	27.6 dB
4.0 GHz	26.4 dB
8.0 GHz	17.0 dB
12.0 GHz	17.9 dB
14.0 GHz	15.1 dB
18.0 GHz	28.1 dB

SUMMARY TEST DATA

MODEL NUMBER	**: MSNN-3DT-04T-STANDARD**
OPTION NUMBER	**: B02, B03, 118**
SERIAL NUMBER	**: 3MS902016**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc @ 135mA; -15vdc @ 50mA**

OFF ARM TERMINATION*

J2



***J2: INPUT ARM**

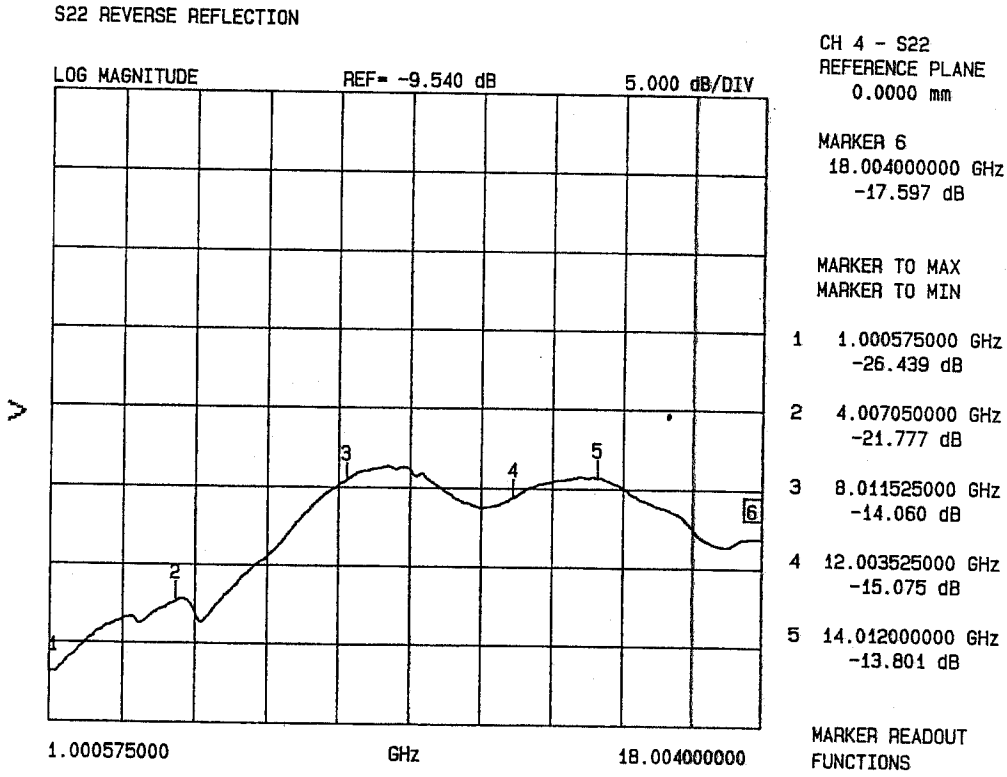
FREQUENCY	RETURN LOSS
1.0 GHz	27.7 dB
4.0 GHz	25.2 dB
8.0 GHz	17.6 dB
12.0 GHz	15.2 dB
14.0 GHz	12.4 dB
18.0 GHz	15.8 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

OFF ARM TERMINATION*

J3



*J3: INPUT ARM

FREQUENCY	RETURN LOSS
1.0 GHz	26.4 dB
4.0 GHz	21.7 dB
8.0 GHz	14.0 dB
12.0 GHz	15.0 dB
14.0 GHz	13.8 dB
18.0 GHz	17.5 dB

AMERICAN MICROWAVE CORPORATION

AMPLITUDE

DATA

BETWEEN

PORT TO PORT

FROM

200 MHz TO 18 GHz

ON A

SP3T

SOLID STATE SWITCH

(SURFACE MOUNTABLE)

AMC MODEL No:

MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118

(Serial Number: 3MS902016)

PREPARED
BY
KATIE BAISEY

TESTED
BY
RENE AFABLE

OCTOBER 3, 2000

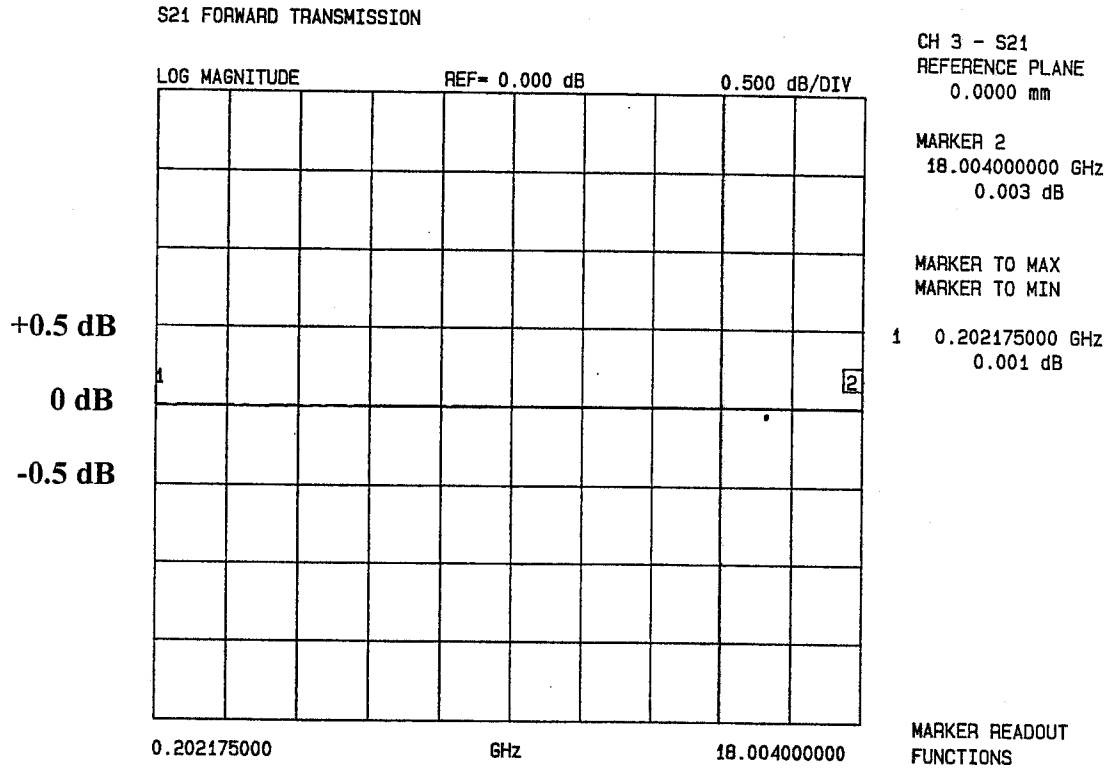
7311 G GROVE ROAD, FREDERICK, MARYLAND 21704 • Tel. (301) 662-4700 • Fax (301) 662-4938

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

AMPLITUDE*

J4-J1 (REFERENCE)



*J4: INPUT ARM

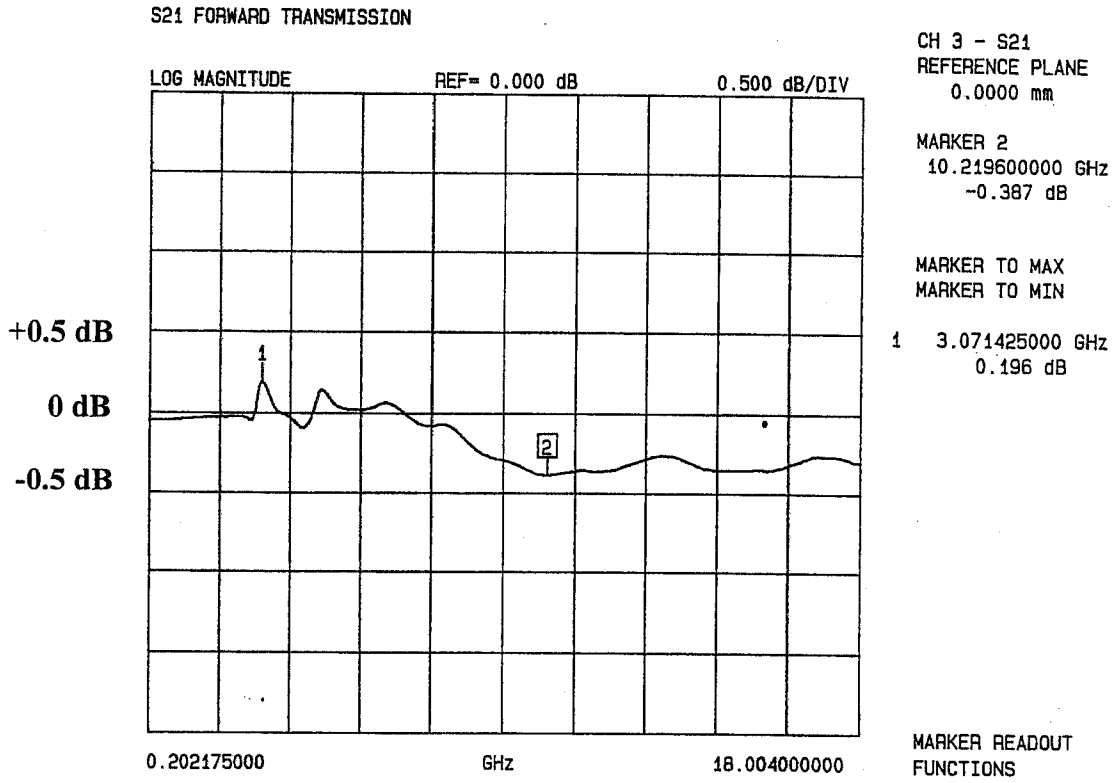
FREQUENCY	AMPLITUDE (PEAK) (POSITIVE SIDE)	AMPLITUDE (PEAK) (NEGATIVE SIDE)
200 MHz	0.001 dB	
18.0 GHz	0.003 dB	

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

AMPLITUDE*

J4-J2



*J4: INPUT ARM

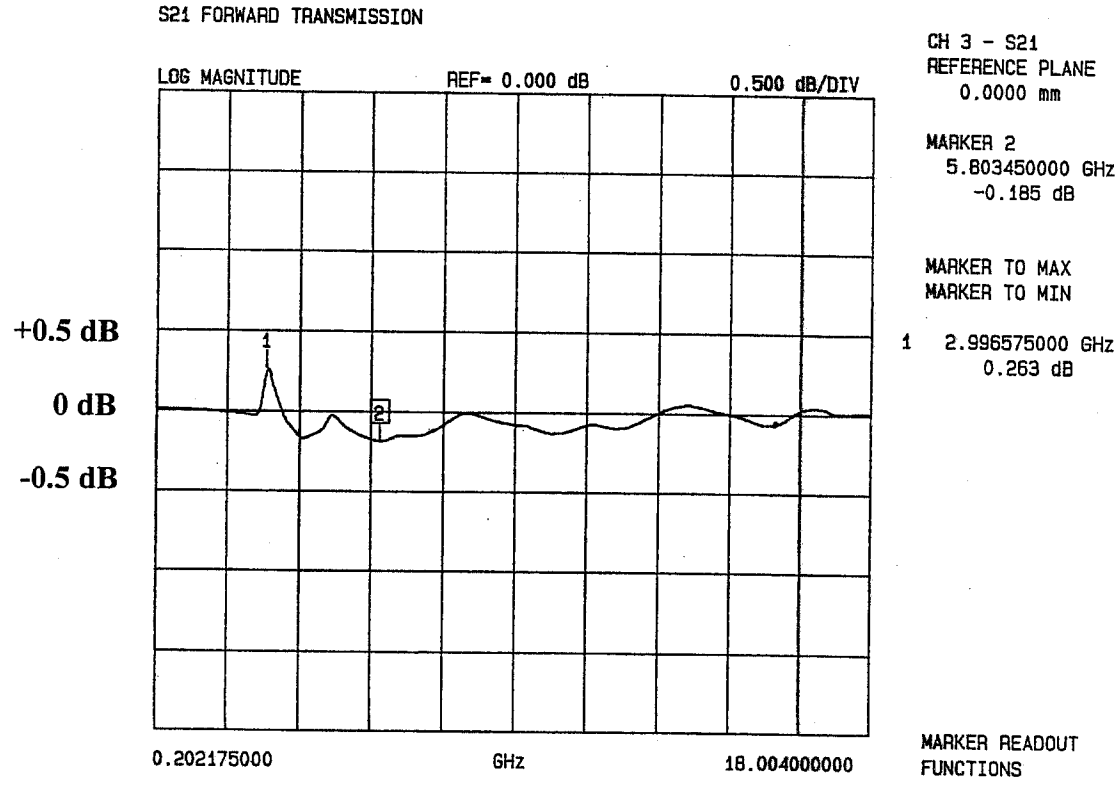
FREQUENCY	AMPLITUDE (PEAK) (POSITIVE SIDE)	AMPLITUDE (PEAK) (NEGATIVE SIDE)
3.07 GHz	0.196 dB	
10.21 GHz		-0.387 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

AMPLITUDE*

J4-J3



*J4: INPUT ARM

FREQUENCY	AMPLITUDE (PEAK) (POSITIVE SIDE)	AMPLITUDE (PEAK) (NEGATIVE SIDE)
2.99 GHz	0.263 dB	
5.80 GHz		-0.185 dB

SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

SWITCHING SPEED

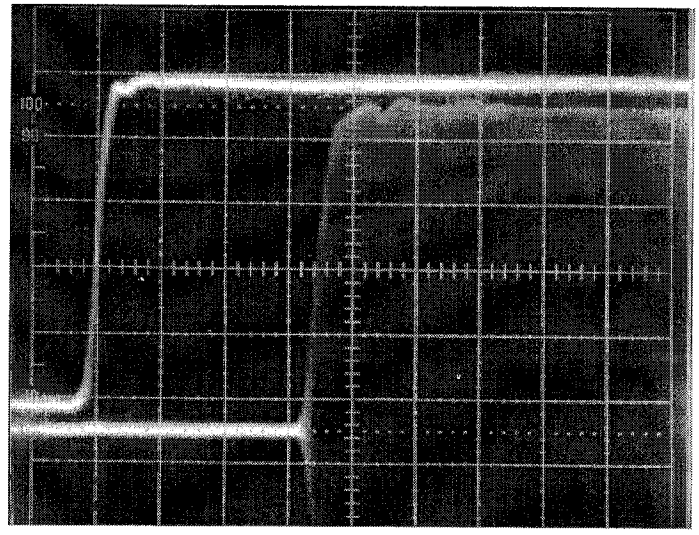
"Rise/Fall" Time: 10% RF to 90% RF & 90% RF to 10% RF
"On/Off" Time: 50% TTL to 90% RF or 10% RF

TYPICAL OF ALL ARMS

"DELAY ON": 37 nS
"RISE TIME": 4 nS

HORIZONTAL SCALE:
10 nS PER DIVISION

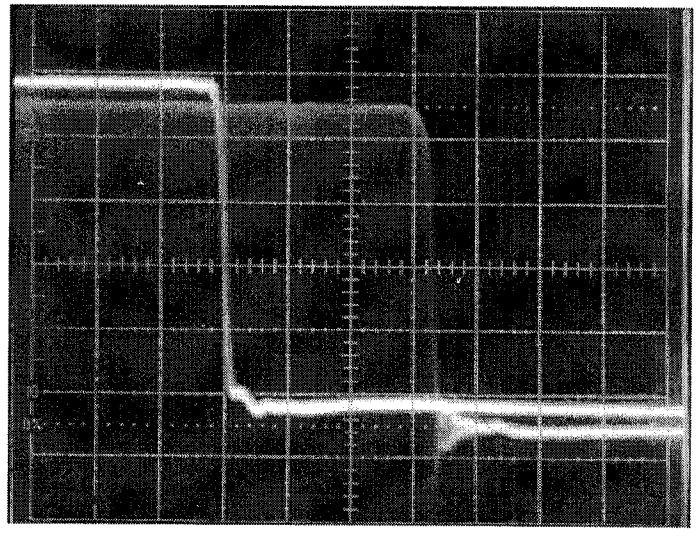
VERTICAL SCALE:
10 mV PER DIVISION



"DELAY OFF": 34 nS
"FALL TIME": 2 nS

HORIZONTAL SCALE:
10 nS PER DIVISION

VERTICAL SCALE:
10 mV PER DIVISION



OCTOBER 3, 2000

SUMMARY TEST DATA

MODEL NUMBER	**: MSNN-3DT-04T-STANDARD**
OPTION NUMBER	**: B02, B03, 118**
SERIAL NUMBER	**: 3MS902016**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc @ 135mA; -15vdc @ 50mA**

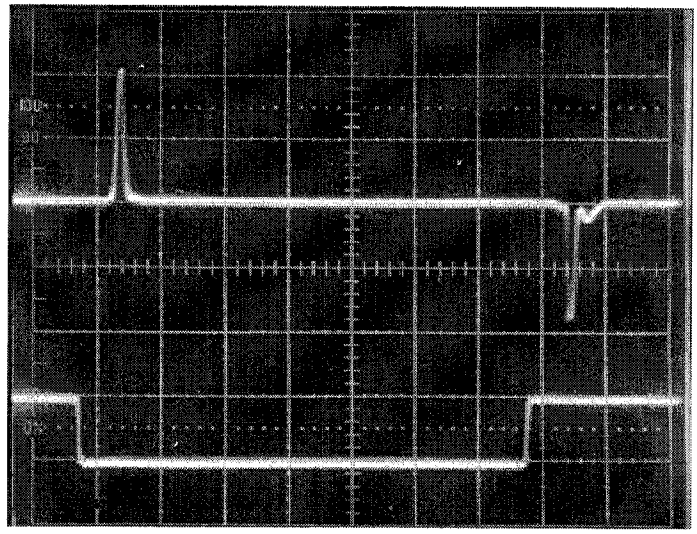
VIDEO TRANSIENTS

TYPICAL OF ALL ARMS

≤1.9 V P-P
MEASURED IN A 300 MHZ BANDWIDTH

VERTICAL SCALE: 0.5 V PER DIVISION

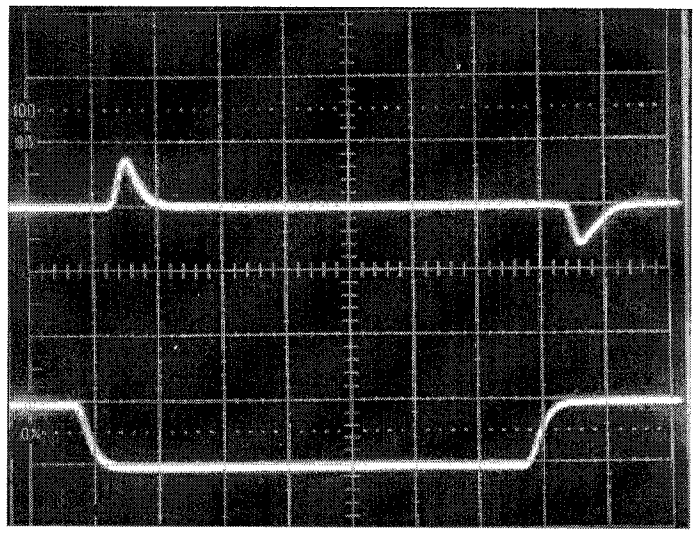
HORIZONTAL SCALE: 50 nS PER DIVISION



≤700 mV P-P
MEASURED IN A 20 MHZ BANDWIDTH

VERTICAL SCALE: 0.5 V PER DIVISION

HORIZONTAL SCALE: 50 nS PER DIVISION



OCTOBER 3, 2000

AMERICAN MICROWAVE CORPORATION

APPENDIX A

MISCELLANEOUS

TEST DATA AND PLOTS

ON

ISOLATION

AS

MEASURED

ON A VECTOR NETWORK ANALYZER

ON A

SP3T

SOLID STATE SWITCH

(SURFACE MOUNTABLE)

AMC MODEL No:
MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118

(Serial Number: 3MS902016)

FROM

40 MHz TO 18 GHz

40 MHz TO 4 GHz

AND FROM

1 GHz TO 18 GHz

OCTOBER 3, 2000

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AMERICAN MICROWAVE CORPORATION

ISOLATION

DATA AND PLOTS

FROM

40 MHz TO 18 GHz

AS

MEASURED

ON A VECTOR NETWORK ANALYZER

ON A

SP3T

SOLID STATE SWITCH

(SURFACE MOUNTABLE)

AMC MODEL No:

MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118

(Serial Number: 3MS902016)

PREPARED
BY
KATIE BAISEY

TESTED
BY
RENE AFABLE

OCTOBER 3, 2000

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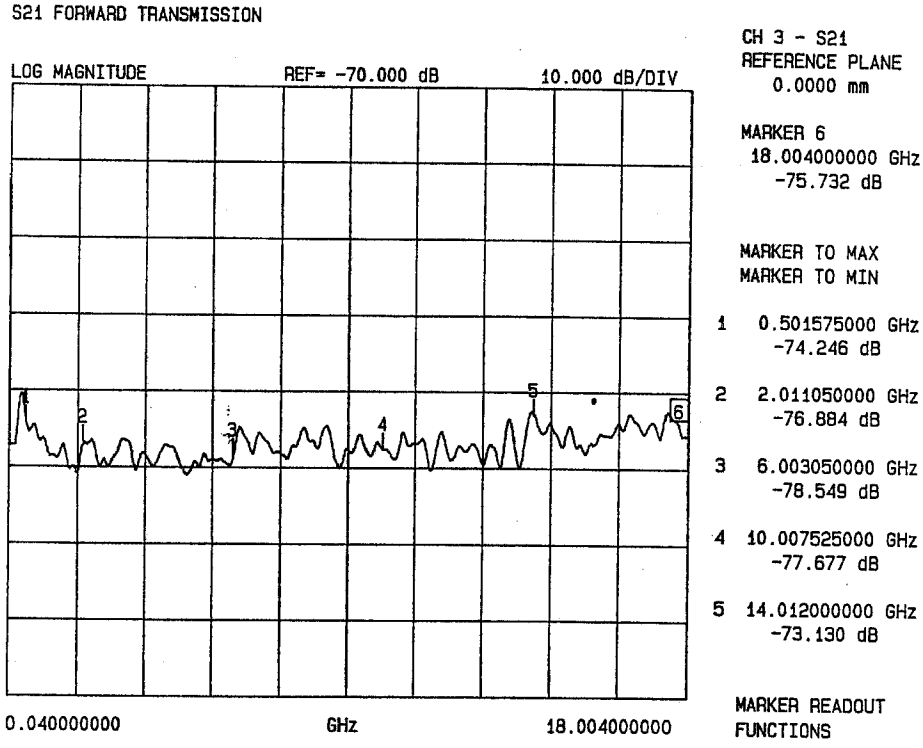
SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A VECTOR NETWORK ANALYZER)

J4-J1



*J4: INPUT ARM

FREQUENCY	ISOLATION
500 MHz	74.24 dB
2.0 GHz	76.88 dB
6.0 GHz	78.54 dB
10.0 GHz	77.67 dB
14.0 GHz	73.13 dB
18.0 GHz	75.73 dB

OCTOBER 3, 2000

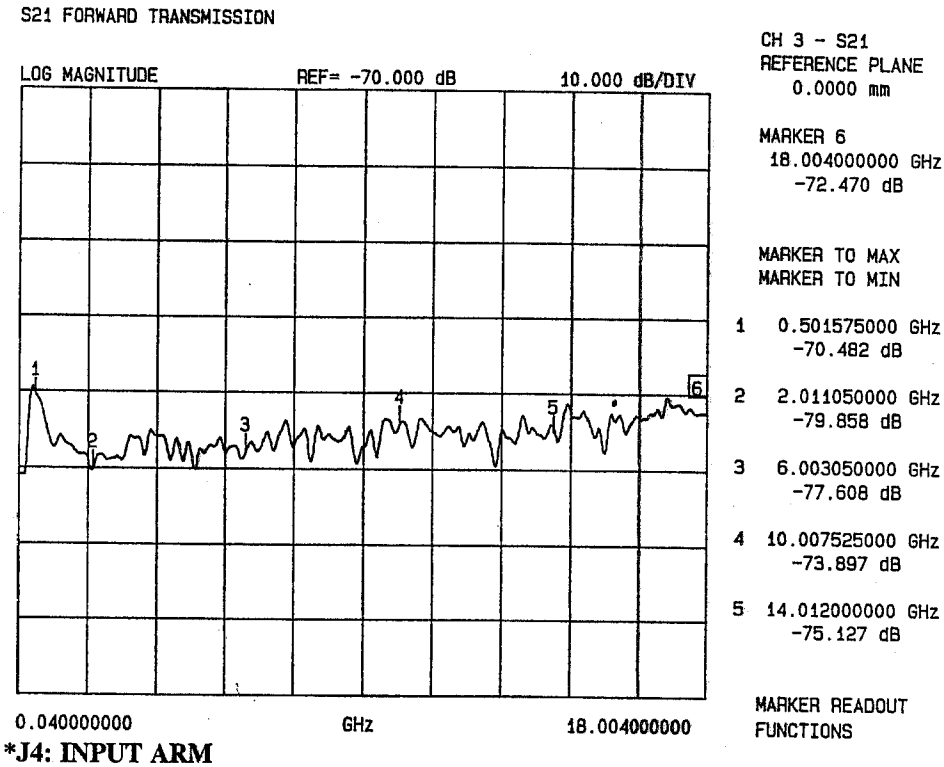
SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A VECTOR NETWORK ANALYZER)

J4-J2



*J4: INPUT ARM

FREQUENCY	ISOLATION
500 MHz	70.48 dB
2.0 GHz	79.85 dB
6.0 GHz	77.60 dB
10.0 GHz	73.89 dB
14.0 GHz	75.12 dB
18.0 GHz	72.47 dB

OCTOBER 3, 2000

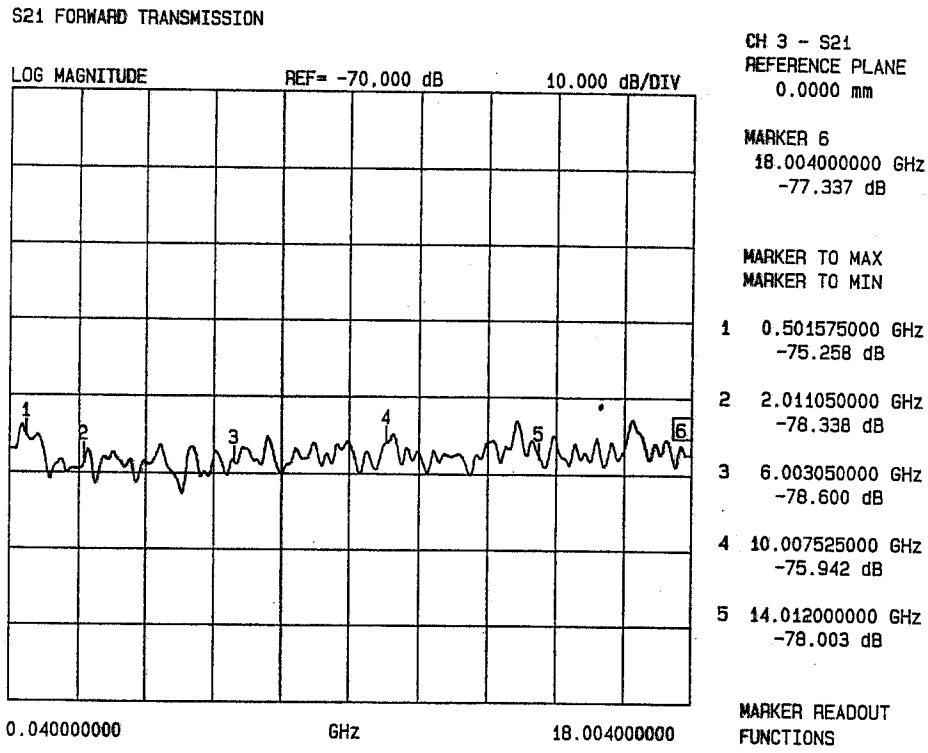
SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A VECTOR NETWORK ANALYZER)

J4-J3



*J4: INPUT ARM

FREQUENCY	ISOLATION
500 MHz	75.25 dB
2.0 GHz	78.33 dB
6.0 GHz	78.60 dB
10.0 GHz	75.94 dB
14.0 GHz	78.00 dB
18.0 GHz	77.33 dB

OCTOBER 3, 2000

AMERICAN MICROWAVE CORPORATION

ISOLATION

DATA AND PLOTS

FROM

40 MHz TO 4 GHz

AS

MEASURED

ON A VECTOR NETWORK ANALYZER

ON A

SP3T

SOLID STATE SWITCH

(SURFACE MOUNTABLE)

AMC MODEL No:

MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118

(Serial Number: 3MS902016)

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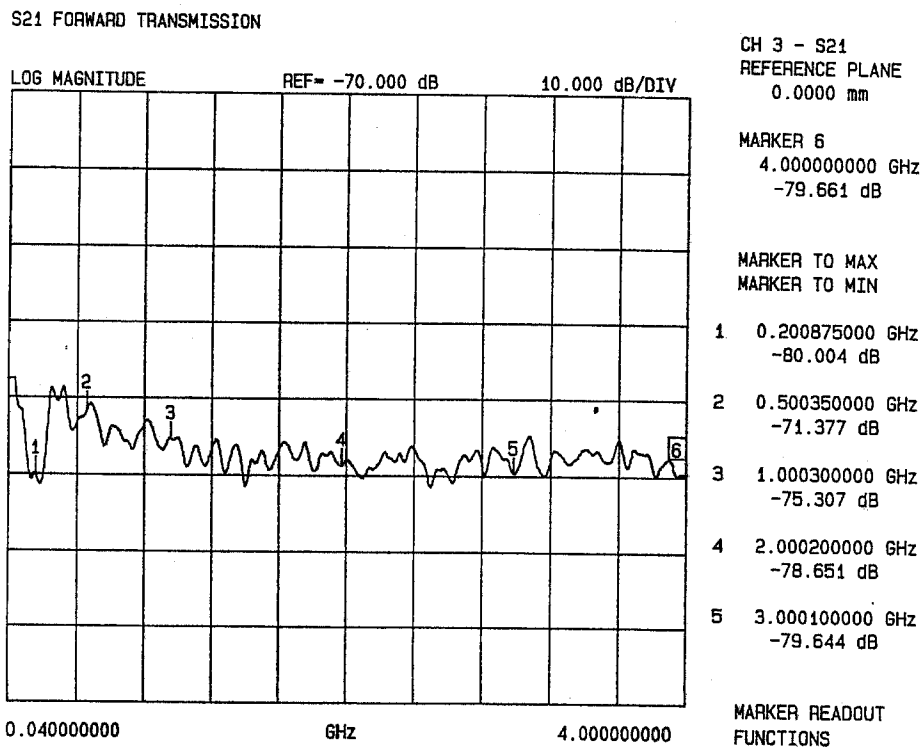
SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A VECTOR NETWORK ANALYZER)

J4-J1



***J4: INPUT ARM**

FREQUENCY	ISOLATION
200 MHz	80.00 dB
500 MHz	71.37 dB
1.0 GHz	75.30 dB
2.0 GHz	78.65 dB
3.0 GHz	79.64 dB
4.0 GHz	79.66 dB

OCTOBER 3, 2000

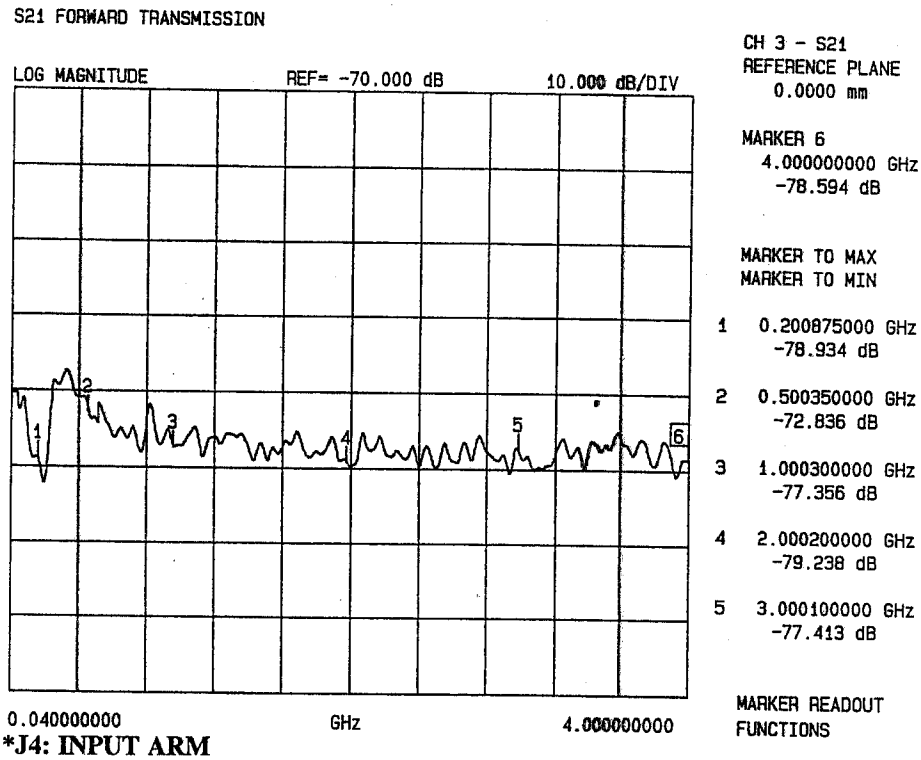
SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A VECTOR NETWORK ANALYZER)

J4-J2



*J4: INPUT ARM

FREQUENCY	ISOLATION
200 MHz	78.93 dB
500 MHz	72.83 dB
1.0 GHz	77.35 dB
2.0 GHz	79.23 dB
3.0 GHz	77.41 dB
4.0 GHz	78.59 dB

OCTOBER 3, 2000

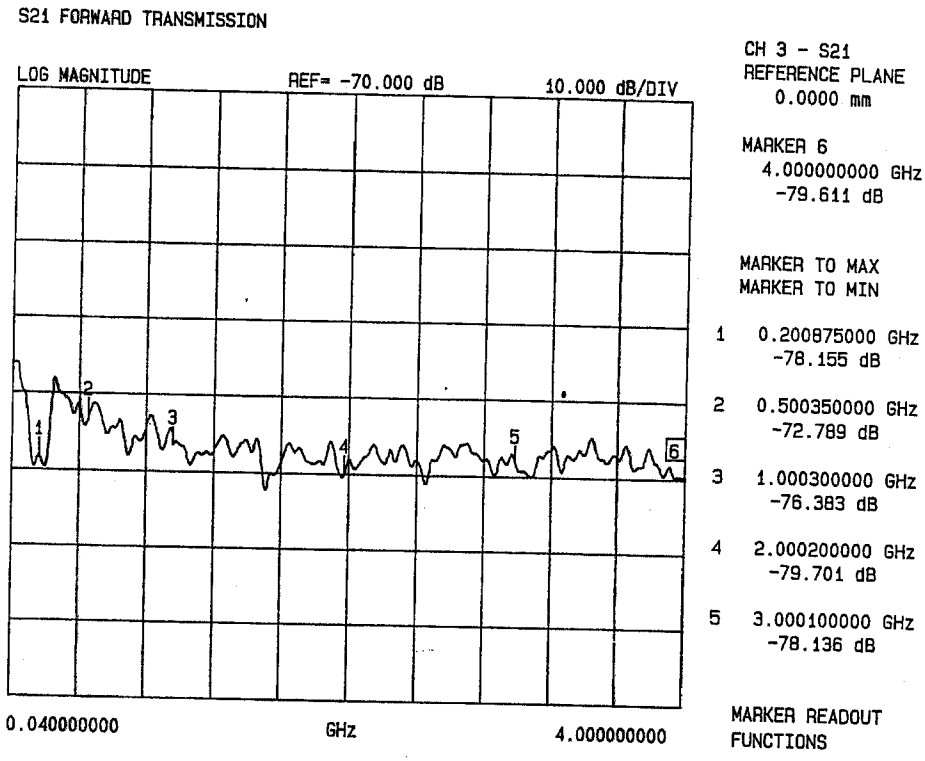
SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A VECTOR NETWORK ANALYZER)

J4-J3



*J4: INPUT ARM

FREQUENCY	ISOLATION
200 MHz	78.15 dB
500 MHz	72.78 dB
1.0 GHz	76.38 dB
2.0 GHz	79.70 dB
3.0 GHz	78.13 dB
4.0 GHz	79.61 dB

OCTOBER 3, 2000

AMERICAN MICROWAVE CORPORATION

ISOLATION

DATA AND PLOTS

FROM

1 GHz TO 18 GHz

AS

MEASURED

ON A VECTOR NETWORK ANALYZER

ON A

SP3T

SOLID STATE SWITCH

(SURFACE MOUNTABLE)

AMC MODEL No:
MSNN-3DT-04T-STANDARD OPTIONS B02, B03, 118

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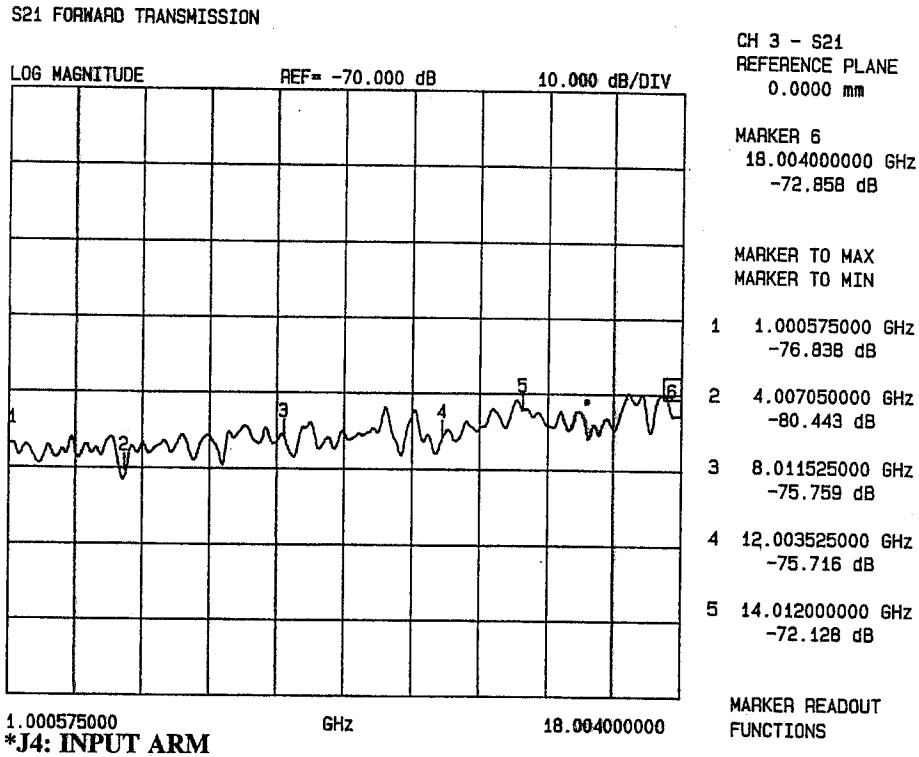
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A VECTOR NETWORK ANALYZER)

J4-J1



*J4: INPUT ARM

FREQUENCY	ISOLATION
1.0 GHz	76.83 dB
4.0 GHz	80.44 dB
8.0 GHz	75.75 dB
12.0 GHz	75.71 dB
14.0 GHz	72.12 dB
18.0 GHz	72.85 dB

OCTOBER 3, 2000

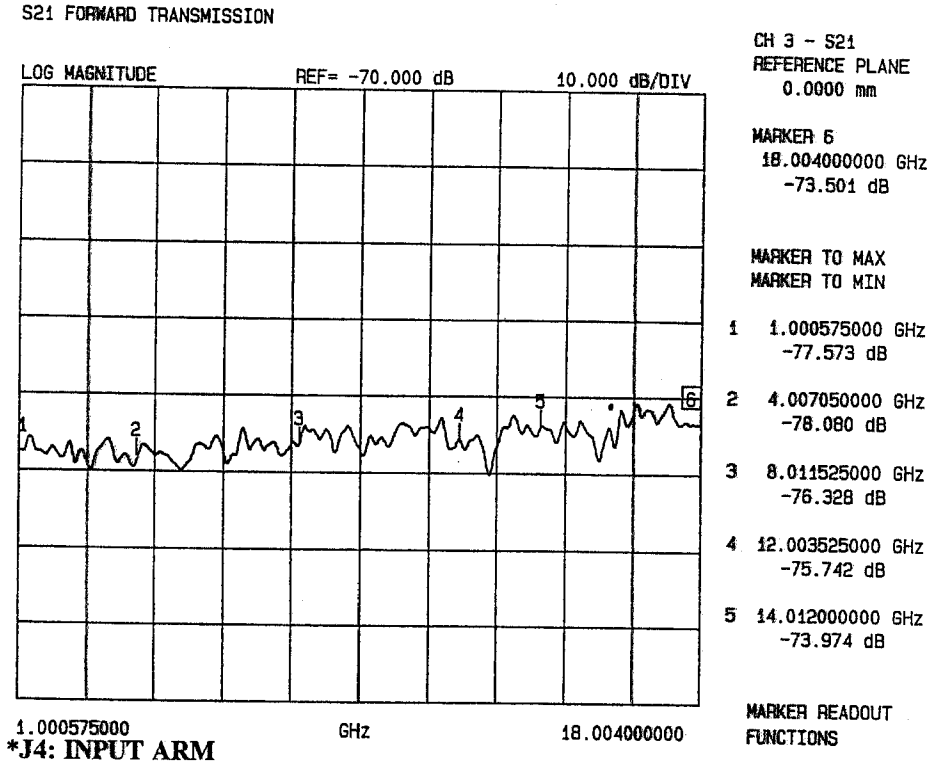
SUMMARY TEST DATA

MODEL NUMBER	: MSNN-3DT-04T-STANDARD
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A VECTOR NETWORK ANALYZER)

J4-J2



*J4: INPUT ARM

FREQUENCY	ISOLATION
1.0 GHz	77.57 dB
4.0 GHz	78.08 dB
8.0 GHz	76.32 dB
12.0 GHz	75.74 dB
14.0 GHz	73.97 dB
18.0 GHz	73.50 dB

OCTOBER 3, 2000

SUMMARY TEST DATA

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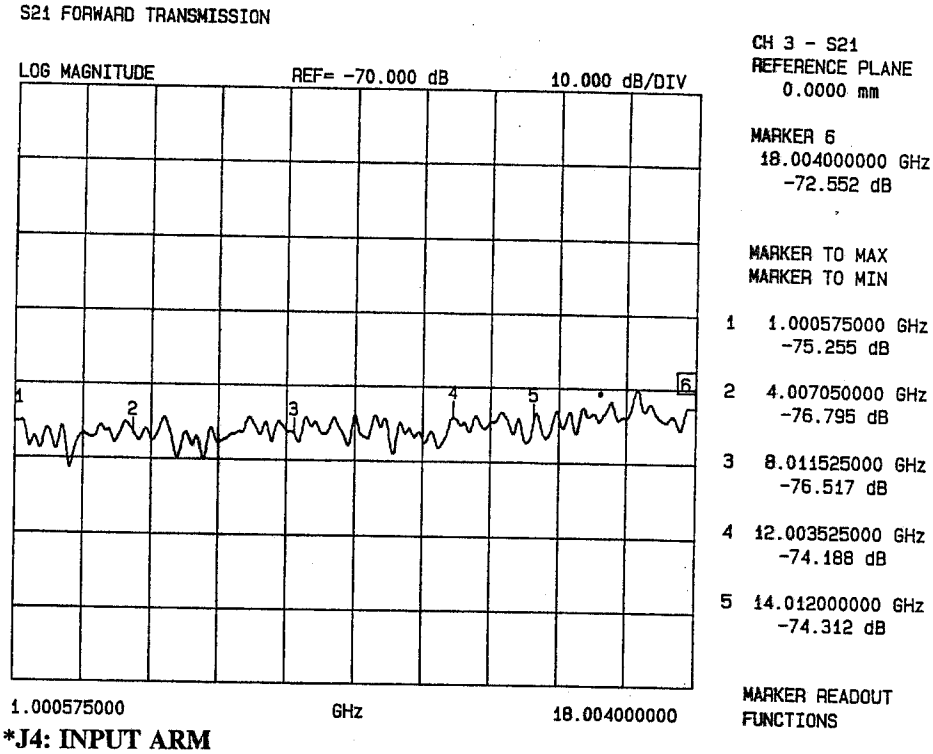
OPTION NUMBER	: B02, B03, 118
SERIAL NUMBER	: 3MS902016
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 135mA; -15vdc @ 50mA

ISOLATION*

(AS MEASURED ON A VECTOR NETWORK ANALYZER)

J4-J3



*J4: INPUT ARM

FREQUENCY	ISOLATION
1.0 GHz	75.25 dB
4.0 GHz	76.79 dB
8.0 GHz	76.51 dB
12.0 GHz	74.18 dB
14.0 GHz	74.31 dB
18.0 GHz	72.55 dB

OCTOBER 3, 2000