

TEST REPORT

ON

500 MHz TO 18 GHz

HIGH SPEED (≤ 10 NS)

HIGH POWER

(1 WATT CW, 100 WATTS PEAK, 1 μ S PULSED)

LOW INSERTION LOSS

HARD DIODE-LIMITER

PMI MODEL NO:

LM-0518-10-1W-SHS-1 (OPTION M)

SERIAL NO: DMF2822-012, HP5340-012

DESIGNED

BY

ASH K. GORWARA

REPORTED

BY

PETER WOOD

16 JULY 1997

PLANAR MONOLITHIC INDUSTRIES, INC.

CORPORATE & ENGINEERING OFFICES : 1112 PERKIOMENVILLE ROAD, PERKIOMENVILLE, PA 18074

SALES & MANUFACTURING OFFICES : 7311-G GROVE ROAD, FREDERICK, MD 21704

TEL. No: 301-662-4700 FAX. No: 301-662-4938

500 MHz TO 18 GHz HIGH SPEED, HIGH POWER HARD DIODE-LIMITER

- LOW VSWR
- HIGH SPEED (≤ 10 nS)
- LOW INSERTION LOSS
- SELF BIASED LIMITER
- INTERNAL DC BLOCKS
- ULTRA BROAD BANDWIDTHS
- SURFACE MOUNTABLE WITH REMOVABLE RF CONNECTORS
- HIGH POWER (1WATT CW, 200 WATTS PEAK, 1μ S PULSE, 0.1% DUTY CYCLE, DERATED TO 20% AT 125°C)
- LIMITING THRESHOLD BELOW + 10dBm TYPICAL

KEY SPECIFICATIONS (@25° C):

FREQUENCY	:	0.5 TO 18.0 GHz (OPTION 0518) 2.0 TO 18.0 GHz (OPTION 218) 6.0 TO 18.0 GHz (OPTION 618) 0.5 TO 2.0 GHz (OPTION 052) 0.2 TO 2.0 GHz (OPTION 022, SPEED ≤ 50 NS)
INSERTION LOSS @ -20 dBm INPUT	:	2.0 dB MAX. 1.5 dB TYPICAL
VSWR @ -20 dBm INPUT	:	2.0:1 MAX., 1.5:1 TYPICAL
LEAKAGE @ 1 WATT CW INPUT	:	+ 14 dBm MAX. + 10 dBm TYPICAL
OPERATING TEMPERATURE	:	-55°C TO + 85°C
STORAGE TEMPERATURE	:	-65°C TO + 125°C
INPUT CONNECTOR	:	SMA MALE (REMOVABLE FOR SURFACE MOUNTING)
OUTPUT CONNECTOR	:	SMA FEMALE (REMOVABLE FOR SURFACE MOUNTING)
MODEL NUMBER	:	<u>LM</u> - <u>0518</u> - <u>10</u> - <u>1W</u> - <u>SHS</u> - <u>1</u> - <u>OPTION M</u> 1 2 3 4 5 6 7
SIZE (TWO STYLE AVAILABLE)	:	(STYLE #1) 0.5" X 0.5" X 0.22" (STYLE #2) 1.0" X 1.0" X 0.4"
HOW TO ORDER*	:	1) LIMITER 2) FREQUENCY (500 MHz TO 18 GHz) 3) TYPICAL LIMITING THRESHOLD IN dBm 4) MAXIMUM RF INPUT POWER IN WATTS 5) SUPER HIGH SPEED 6) STYLE NUMBER, 1 OR 2 7) OPTION "M" = MALE INPUT CONNECTOR OPTION "F" = FEMALE INPUT CONNECTOR

* ASK FOR OTHER PRODUCTS MANUFACTURED BY PMI: THRESHOLD DETECTORS, BI-PHASE MODULATORS, HIGH SPEED MIC/MMIC MODULATORS, IFMs, RECIEVER FRONT ENDS, LOW NOISE AMPLIFIERS AND SUCCESSIVE DETECTION LOG VIDEO AMPLIFIERS.

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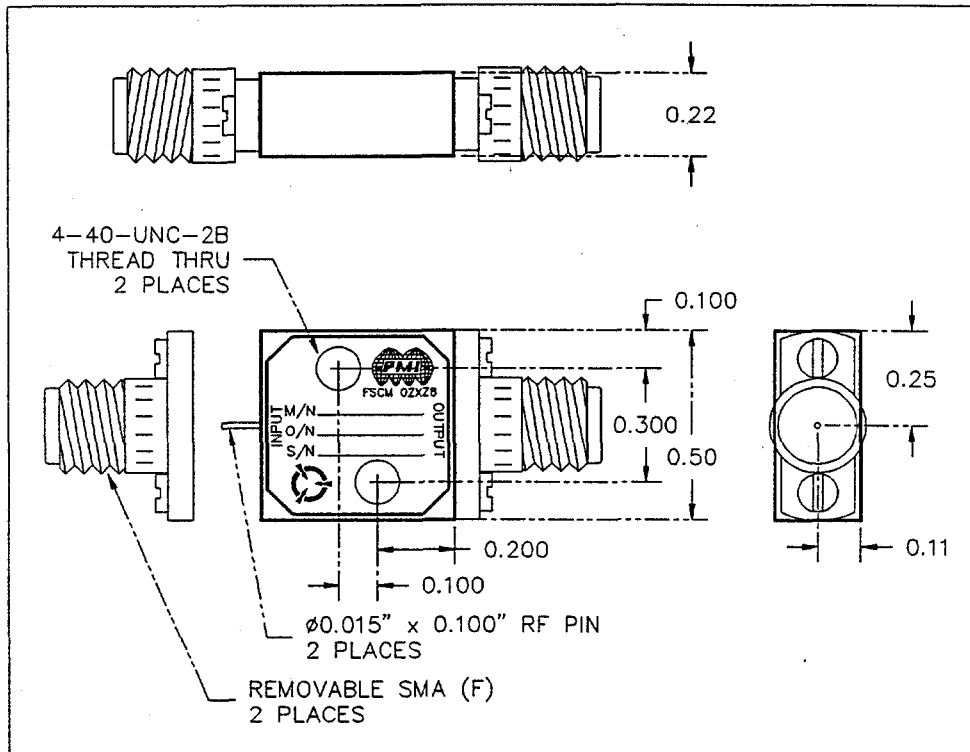
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TEL. No: 301-662-4700 FAX. No: 301-662-4938

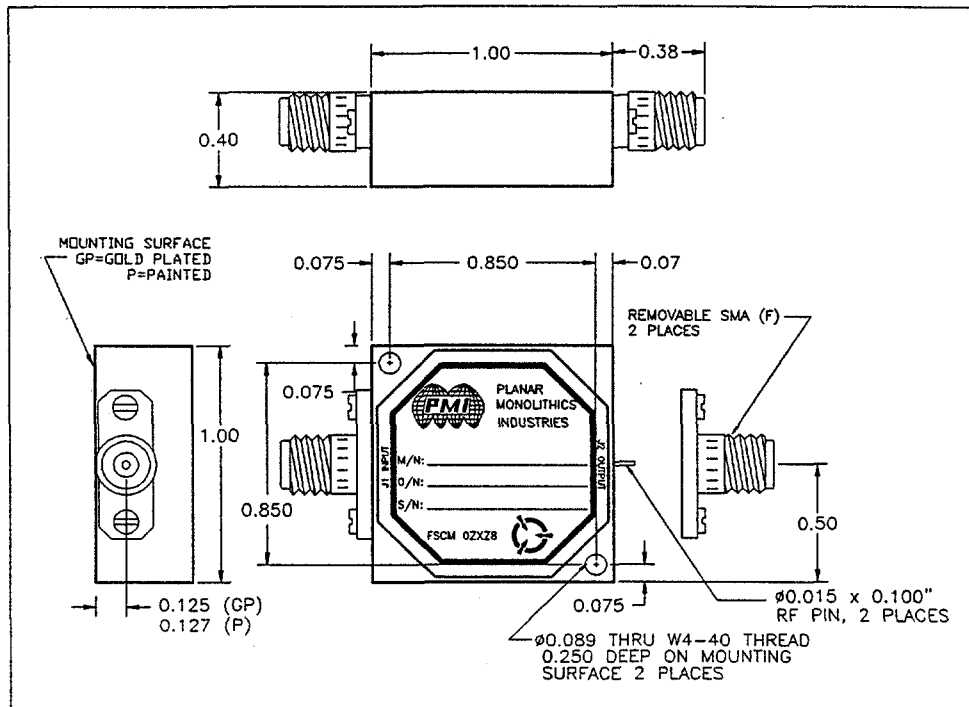


MECHANICAL OUTLINE

STYLE #1
 (MINIATURE
 VERSION)



STYLE #2



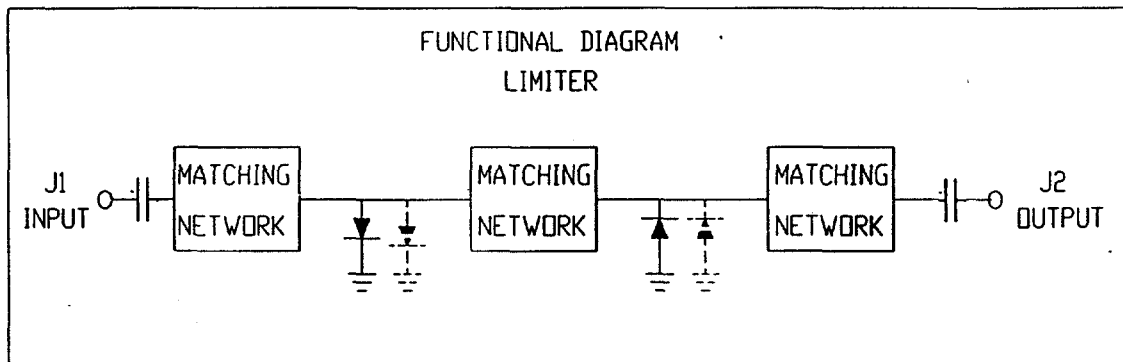


ENVIRONMENTAL SPECIFICATIONS

ENVIRONMENTAL RATINGS

- TEMPERATURE -54°C TO +85°C (OPERATING)
-65°C TO +100°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

FUNCTIONAL DIAGRAM





TEST DATA
ON
HARD DIODE-LIMITER

PMI MODEL No:
LM-0518-10-1W-SHS-1 OPTION M
(SERIAL No: HP5340-012)

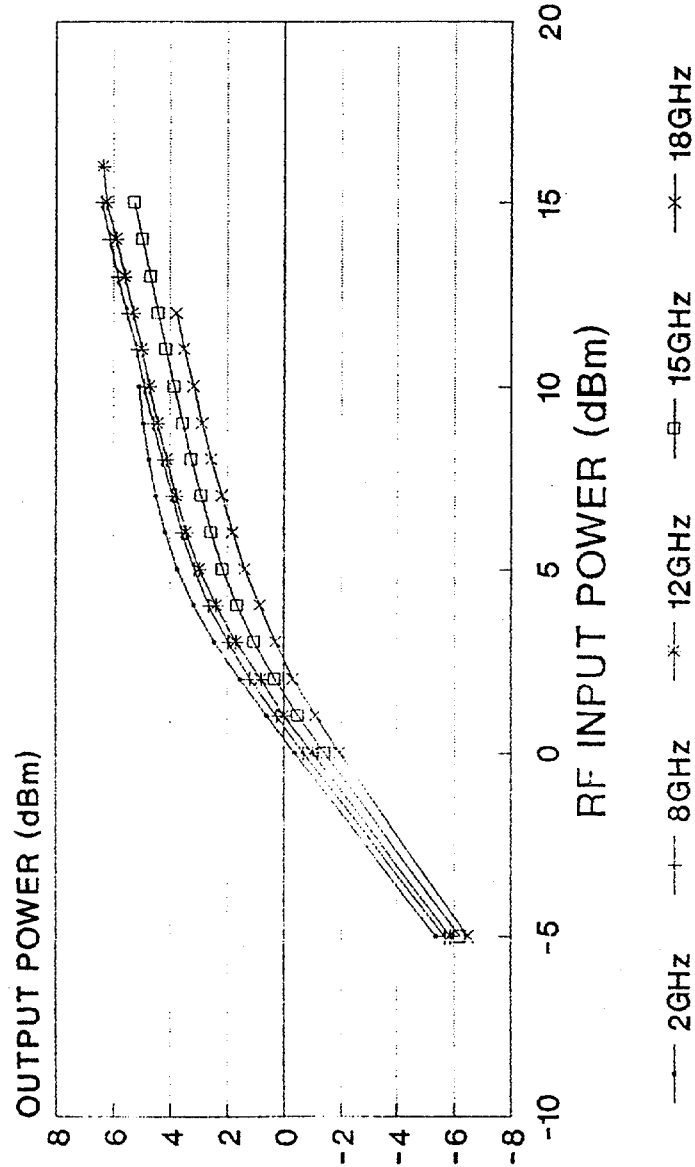
DESIGNED
BY
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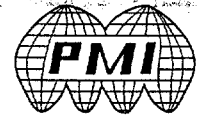
16 JULY 1997



LIMITER RESPONSE WITH FREQUENCY

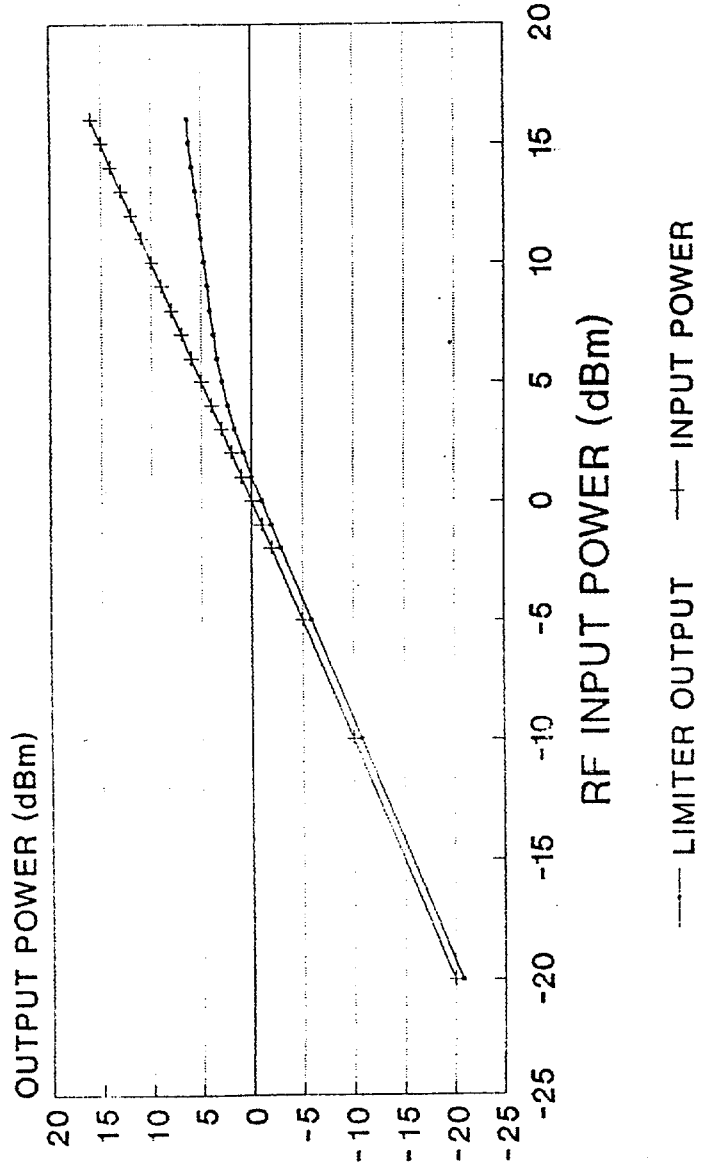
SERIAL No: HP5340-012
CIRCUIT OPEN





LIMITER OUTPUT @ 12 GHz
BIAS OPEN

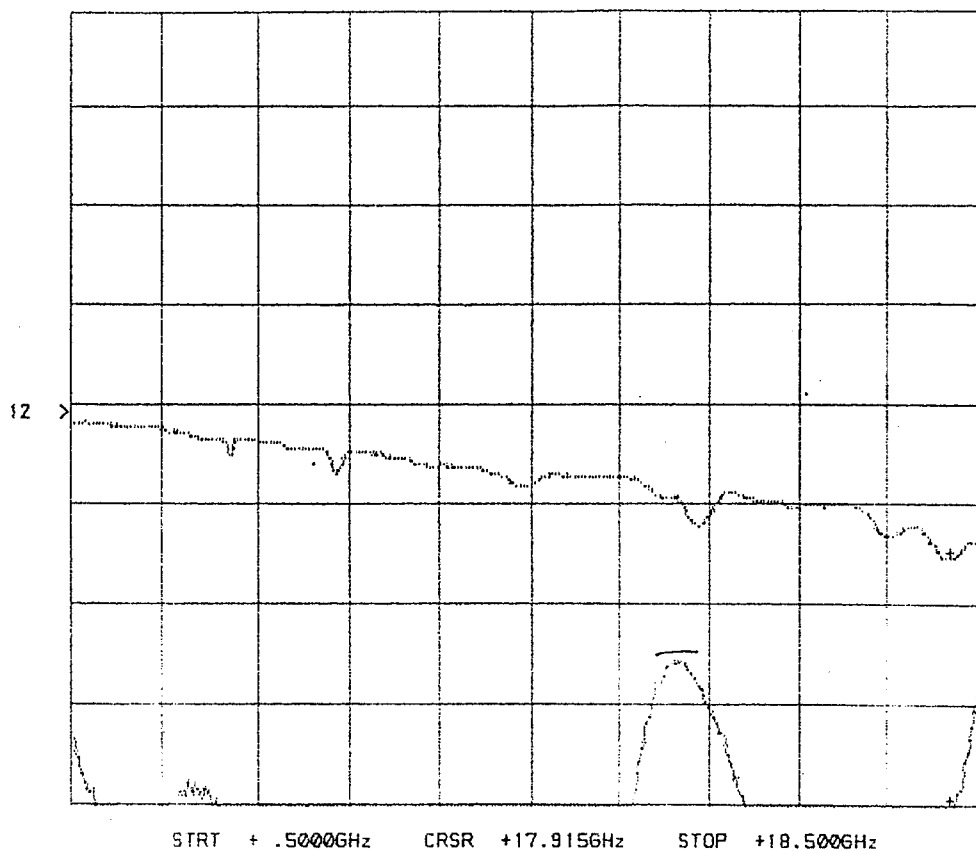
12 GHz - BIAS OPEN





INSERTION LOSS & VSWR @ -20 dBm INPUT

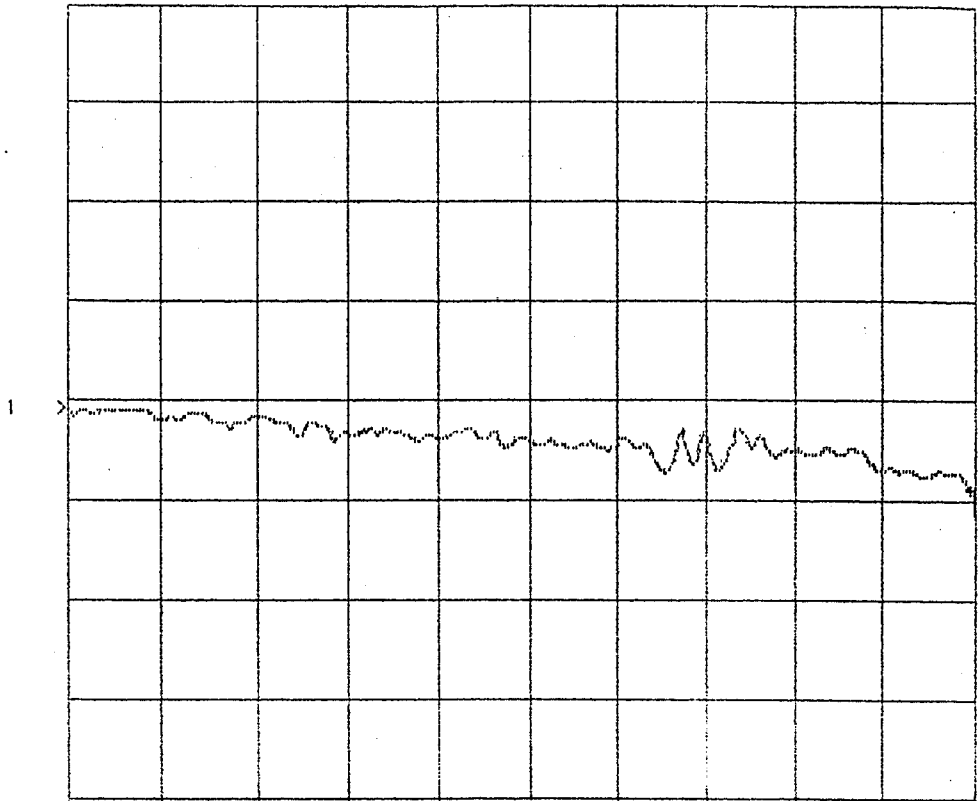
CH1: A -M - 1.51 dB
1.0 dB/ REF + .00 dB
CH2: B -M - 20.87 dB
5.0 dB/ REF - .00 dB





INSERTION LOSS @ -10 dBm INPUT

CH1: A -M - 1.83 dB
2.0 dB/ REF - .00 dB

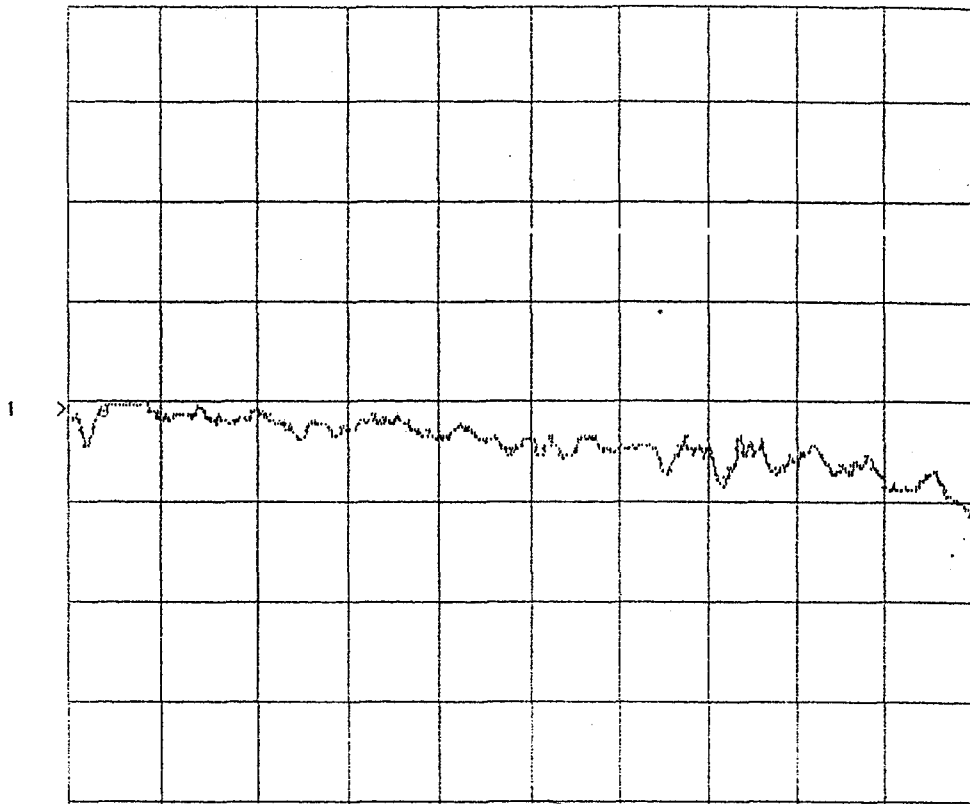


STRT + .5000GHz CRSR +18.500GHz STOP +18.500GHz



INSERTION LOSS @ 0 dBm INPUT

CHI: A -M - 2.33 dB
2.0 dB/ REF - .00 dB

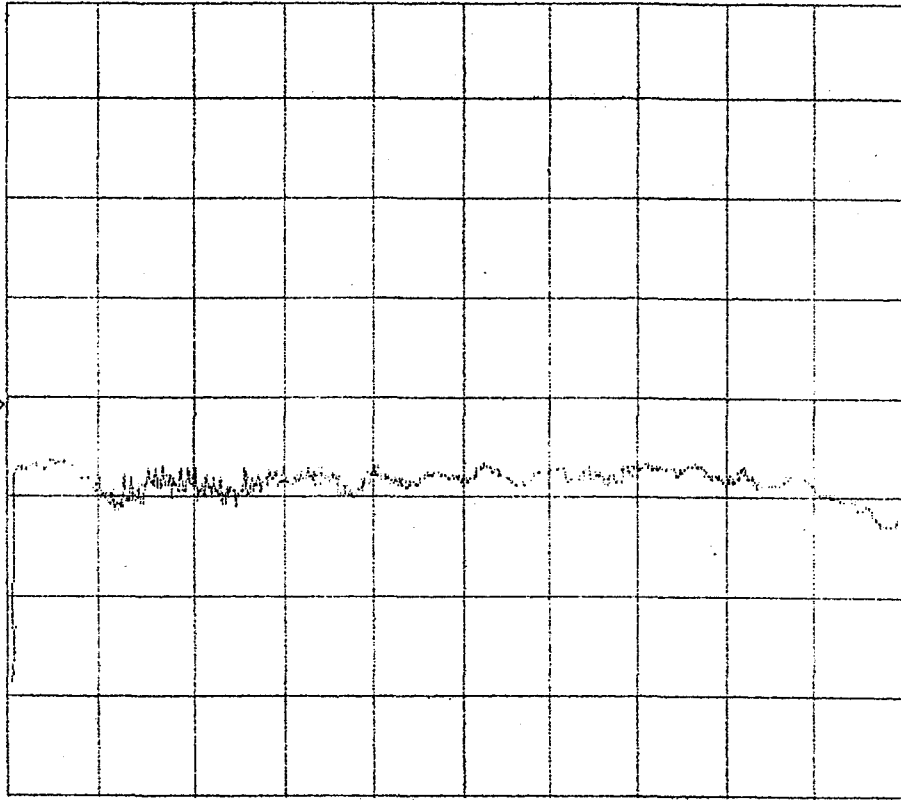


STRT + .5000GHz CRSR (+18.500GHz) STOP +18.500GHz

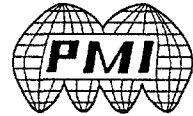


INSERTION LOSS @ +5 dBm INPUT

CH1: A -M A - 4.03 dB
5.0 dB/ REF + .00 dB

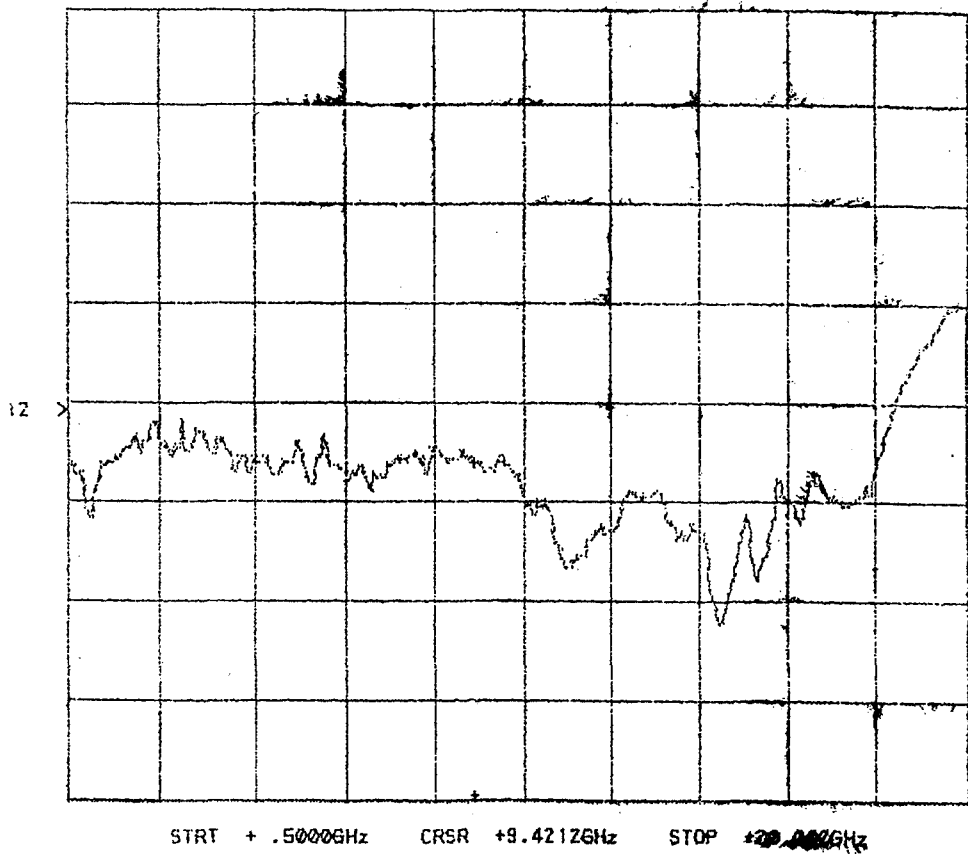


STRT + .0100GHz CRSR +6.7066GHz STOP +20.000GHz



VSWR @ + 5 dBm INPUT

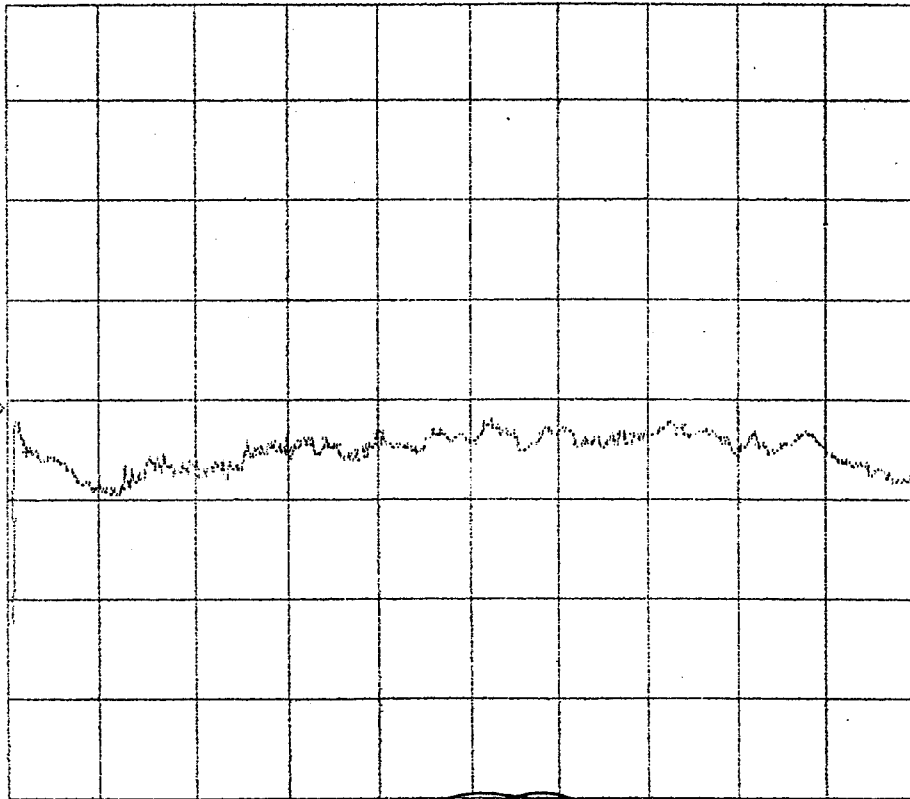
CH1: A -M A - 68.60 dB CH2: B -M B - 13.12 dB
5.0 dB/ REF + .00 dB 5.0 dB/ REF - 10.00 dB





INSERTION LOSS @ + 10 dBm INPUT

CH1: A -M A - 2.65 dB
5.0 dB/ REF + .00 dB



STRT + .0100GHz CRSR +509.74MHz STOP +20.000GHz



TEST DATA
ON
HARD DIODE-LIMITER

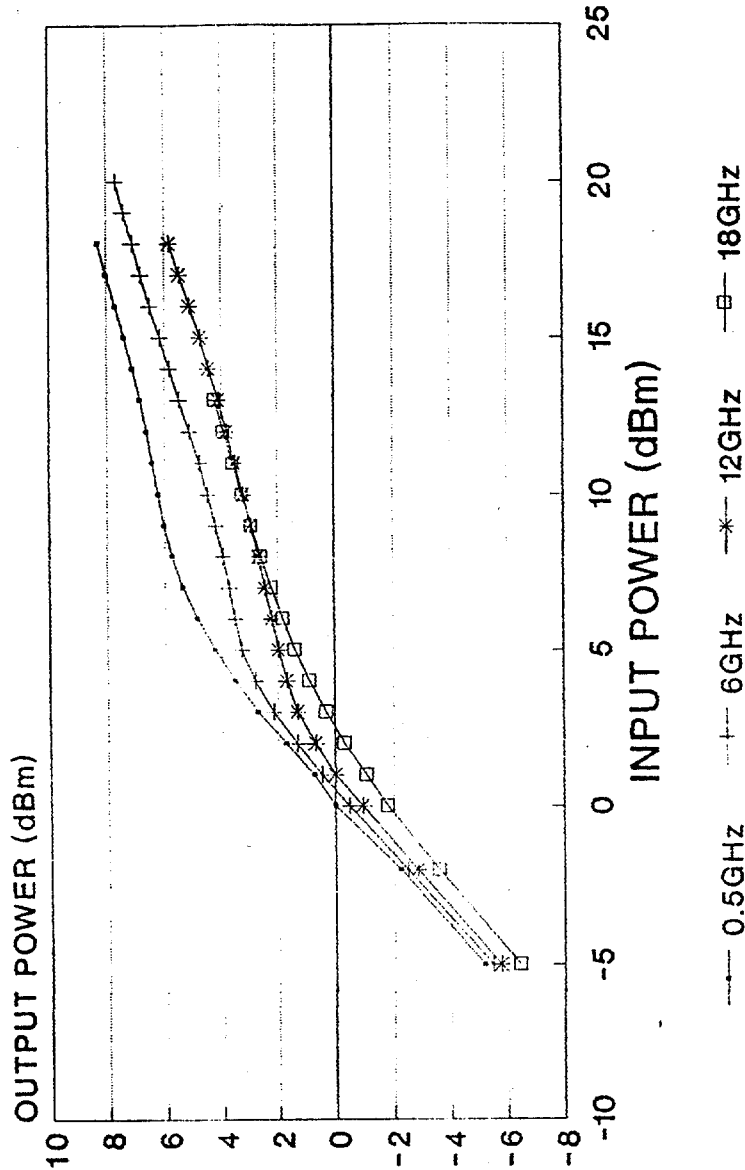
PMI MODEL No:
LM-0518-10-1W-SHS-1 OPTION M
(SERIAL No: DMF2822-012-1 AND DMF2822-012-2)

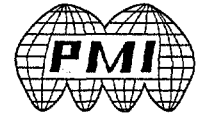
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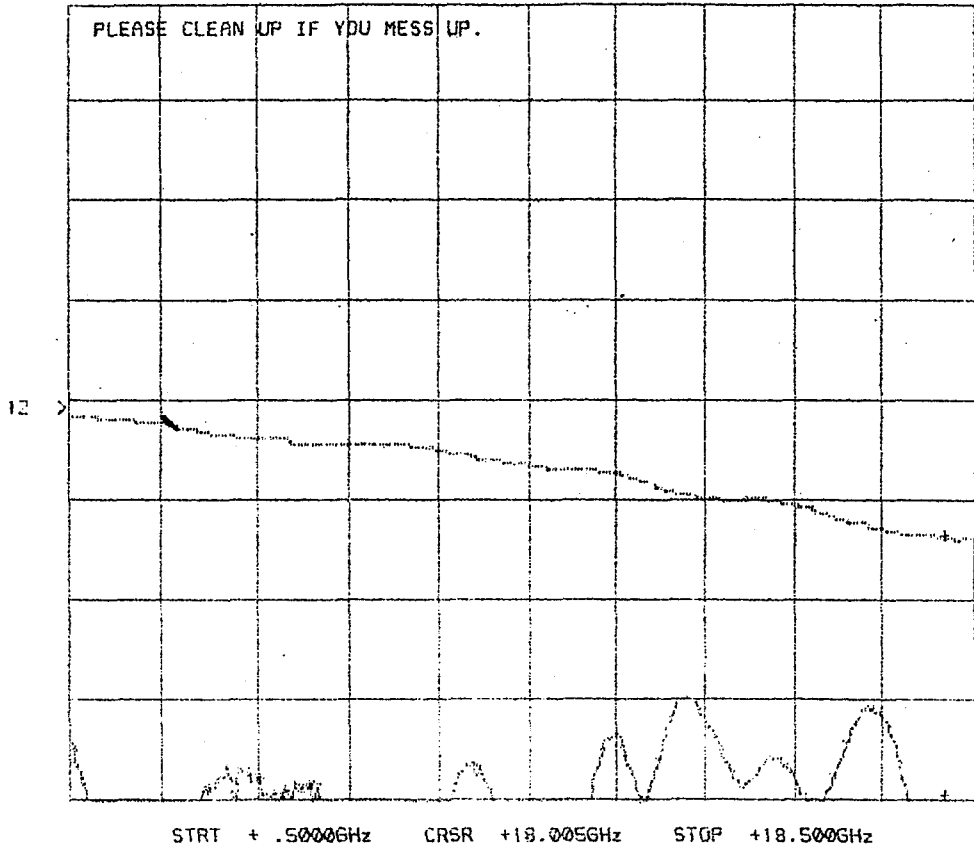
LIMITER RESPONSE WITH FREQUENCY
(SERIAL No: DMF2822-012-1)





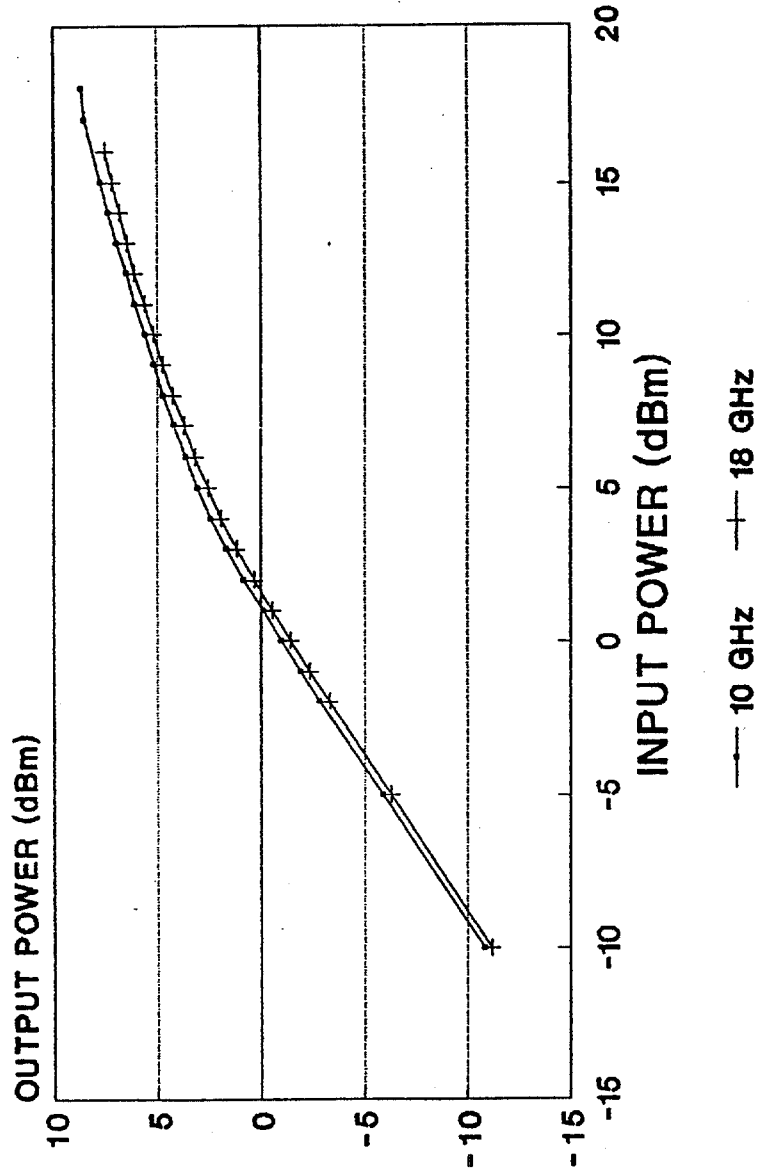
INSERTION LOSS & VSWR @ -20 dBm
(SERIAL No: DMF2822-012-1)

CH1: A -M S - 1.38 dB CH2: E -M - 26.37 dB
1.0 dB/ REF + .00 dB 5.0 dB/ REF - .00 dB





LIMITER RESPONSE WITH FREQUENCY
(SERIAL No: DMF2822-012-2)





INSERTION LOSS & VSWR @ -20 dBm INPUT
 (SERIAL No: DMF2822-012-2)

CH1: A -M - .96 dB CH2: B -M - 15.62 dB
 1.0 dB/ REF - 3.00 dB 5.0 dB/ REF - 10.88 dB

