

**Typical Characteristics
ON
LM-1D2G1D4G-4KW-20DBM-SFM**

PMI MODEL: LM-1D2G1D4G-4KW-20DBM-SFM IS A LIMITER WITH AN OPERATING RANGE OF 1.2 GHz TO 1.4 GHz. THIS MODEL HAS A MAXIMUM INSERTION LOSS OF 0.4 dB, VSWR OF 1.25:1 MAXIMUM. THIS UNIT MEASURES 2.31" x 1.10" x 0.80" AND IS OUTFITTED WITH SMA CONNECTORS.



January 8, 2025

Designed By:

Engineering PMI

Drawings By:

Robert Sirk

Tested and Reported By:

Alfredo Lopez

Typical Characteristics ON LM-1D2G1D4G-4KW-20DBM-SFM

Product Feature

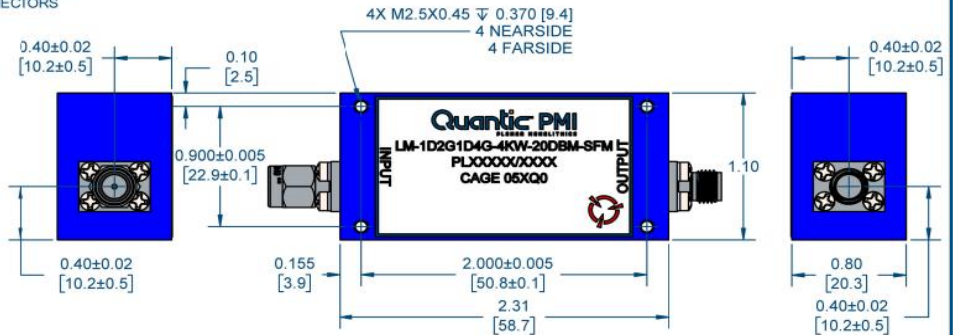
DESCRIPTION:

PMI MODEL: LM-1D2G1D4G-4KW-20DBM-SFM IS A LIMITER WITH AN OPERATING RANGE OF 1.2 GHz TO 1.4 GHz. THIS MODEL HAS A MAXIMUM INSERTION LOSS OF 0.5 dB, AND MINIMUM INPUT RETURN LOSS OF 19.5 dB. THIS UNIT MEASURES 2.31" x 1.10" x 0.80" AND IS OUTFITTED WITH SMA CONNECTORS.

SPECIFICATIONS:

- FREQUENCY RANGE: 1.2 GHz TO 1.4 GHz
- POWER HANDLING (NORMAL OPERATING CONDITION): 10 W PEAK MAX (1 ms PULSE WIDTH, 36% DUTY CYCLE)
- POWER HANDLING (OVERLOAD SURVIVAL CONDITION): 4 kW PEAK MAX (40 μs PULSE WIDTH, 1% DUTY CYCLE)
- INPUT RISE TIME: 100 ns MIN
- INSERTION LOSS: 0.5 dB MAX (-40°C TO +55°C)
0.6 dB MAX (+55°C TO +70°C)
- RETURN LOSS (INPUT/OUTPUT): INPUT: 19.5 dB MIN (-40°C TO +55°C)
OUTPUT: 16 dB MIN (-55°C TO +70°C)
- SPIKE LEAKAGE POWER: 23 dBm MAX
- FLAT LEAKAGE POWER: 20 dBm MAX
- RECOVERY TIME: 15 μs MAX
(TO 0.1 dB UNDER NORMAL OPERATING CONDITIONS)
- CONNECTORS: INPUT - SMA MALE
OUTPUT - SMA FEMALE
- SIZE: (L) 2.31" X (W) 1.10" X (H) 0.80"
EXCLUDING CONNECTORS
- FINISH: PAINTED BLUE

ZONE	REV	DESCRIPTION	DATE	APPROVED
A1		ORIGINAL RELEASE	1/11/2024	
A2		UPDATE RISE TIME	1/16/2024	
A3		ECN # 25-0005	1/16/2025	



ENVIRONMENTAL RATINGS:

- TEMPERATURE: -40°C TO +70°C (OPERATING)
-40°C TO +85°C (STORAGE)
- VIBRATION: MIL-STD-810F METHOD 514.5, CATEGORY 2
3 AXES, 1 HR PER AXIS
- SHOCK: 50 g, 11 ms PULSE, 1/2 SINE WAVE
1 AXIS, 3 PULSES
- HUMIDITY: 95%
- ALTITUDE: 10,000 FT

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

PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS DATE			Quantic PMI 7300-A GROVE ROAD FREDERICKSBURG, VA 22404 USA TEL: 703.759.7200 FAX: 703.759.7201 WWW: WWW.QUANTICPMI.COM (MAIL: SALES@QUANTICPMI.COM)	
DESIGN R. SIKK 1/11/2024			TITLE OUTLINE LM-1D2G1DAG-4KW-20DBM-SFM	
REVIEW ISSUED REV			REV 27047960 A3	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES 1/16 0.001 1/16 1/32 0.0005 1/32 1/64 0.0002 1/64 1/128 0.0001 1/128 1/256 0.00005 1/256 1/512 0.00002 1/512 1/1024 0.00001 1/1024 1/2048 0.000005 1/2048 1/4096 0.000002 1/4096 1/8192 0.000001 1/8192 1/16384 0.0000005 1/16384 1/32768 0.0000002 1/32768 1/65536 0.0000001 1/65536 1/131072 0.00000005 1/131072 1/262144 0.00000002 1/262144 1/524288 0.00000001 1/524288 1/1048576 0.000000005 1/1048576 1/2097152 0.000000002 1/2097152 1/4194304 0.000000001 1/4194304 1/8388608 0.0000000005 1/8388608 1/16777216 0.0000000002 1/16777216 1/33554432 0.0000000001 1/33554432 1/67108864 0.00000000005 1/67108864 1/134217728 0.00000000002 1/134217728 1/268435456 0.00000000001 1/268435456 1/536870912 0.000000000005 1/536870912 1/1073741824 0.000000000002 1/1073741824 1/2147483648 0.000000000001 1/2147483648 1/4294967296 0.0000000000005 1/4294967296 1/8589934592 0.0000000000002 1/8589934592 1/17179869184 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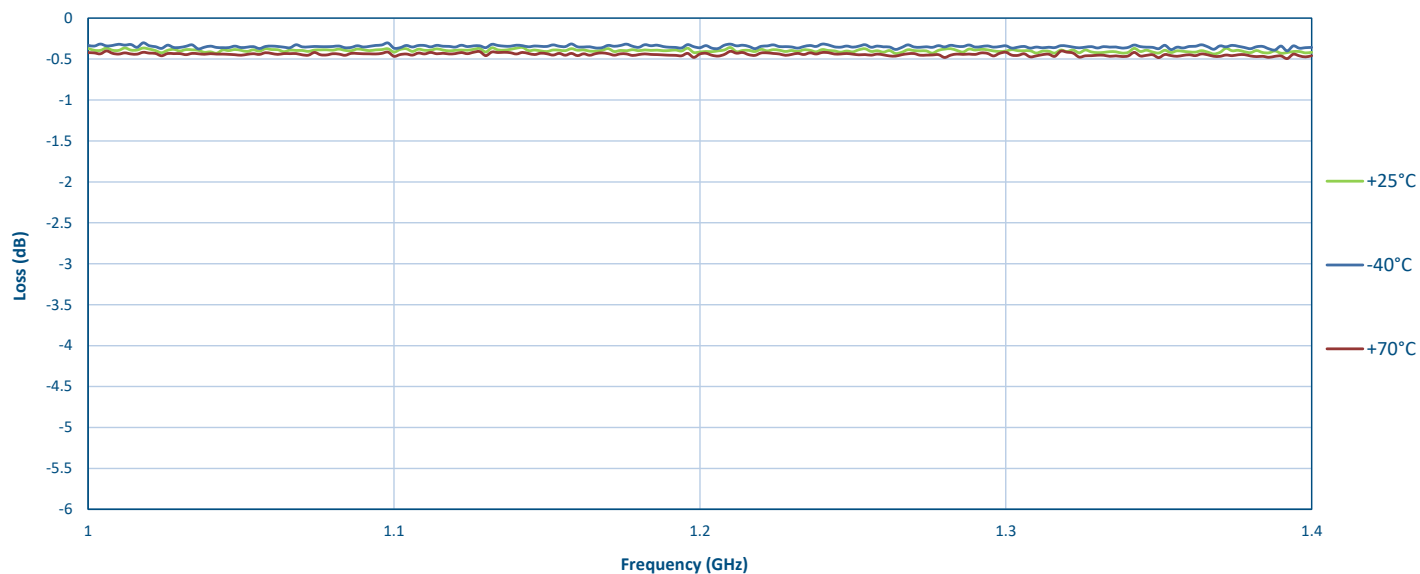
Typical Characteristics ON LM-1D2G1D4G-4KW-20DBM-SFM

Technical Specifications

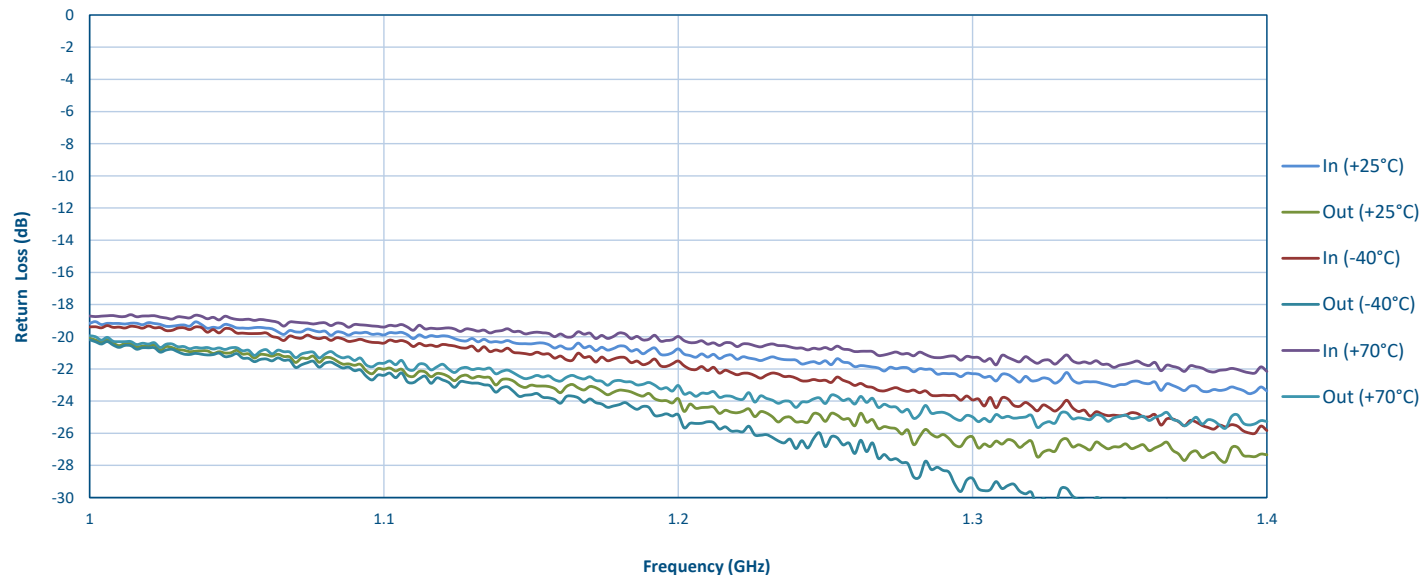
TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	-40°C	+70°C	
1	Frequency Range:	1.2 o 1.4 GHz	1.2 o 1.4 GHz	1.2 o 1.4 GHz	1.2 o 1.4 GHz	
2	Power Handling: (Normal Operating Condition)	10 W Peak Max. (1 ms PW, 36% Duty Cycle)	Pass 10 Watts CW See Graph	Pass 10 Watts CW See Graph	Pass 10 Watts CW See Graph	
3	Power Handling: (Overload Operating Condition)	4 kW Peak Max. (40 μ s PW, 1% Duty Cycle)	Tested 1kW Peak 160 μ s PW, 1% DC @ 2.4 GHz (User will validate 4kW Peak)	Tested 1kW Peak 160 μ s PW, 1% DC @ 2.4 GHz (User will validate 4kW Peak)	Tested 1kW Peak 160 μ s PW, 1% DC @ 2.4 GHz (User will validate 4kW Peak)	
4	Input RF Rise Time:	100 ns Min.	< 10 ns	< 10 ns	< 10 ns	
5	Insertion Loss: Input/Output	0.5 dB Max. (-40 to +55°C) 0.6 dB Max. (+55 to +75°C)	0.44 dB See Graph	0.4 dB See Graph	0.49 dB See Graph	
6	Return Loss: Input/Out	19.5 dB In Min. (-40 to +55°C) 16.0 dB Out Min. (+55 to +75°C)	20.76 dB Input	21.51 dB Input	19.98 dB Input	
			23.85 dB Output	24.85 dB Output	23.03 dB Output	
			See Graph	See Graph	See Graph	
7	Spike Leakage Power:	23 dBm Max.	17.71 dBm See Graph	17.77 dBm See Graph	17.54 dBm See Graph	
8	Flat Leakage Power:	20 dBm Max.	15.41 dBm See Graph	15.61 dBm See Graph	15.42 dBm See Graph	
9	Recovery Time:	15 μ s Max.	<15 μ s See Plot	<15 μ s See Plot	<15 μ s See Plot	

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Insertion Loss

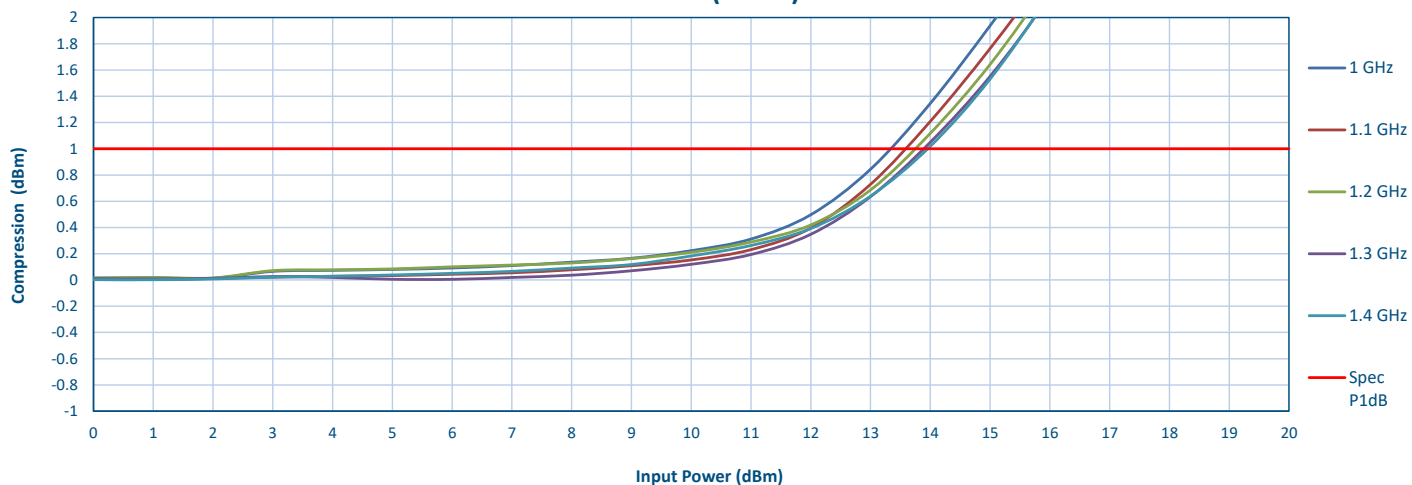


Return Loss

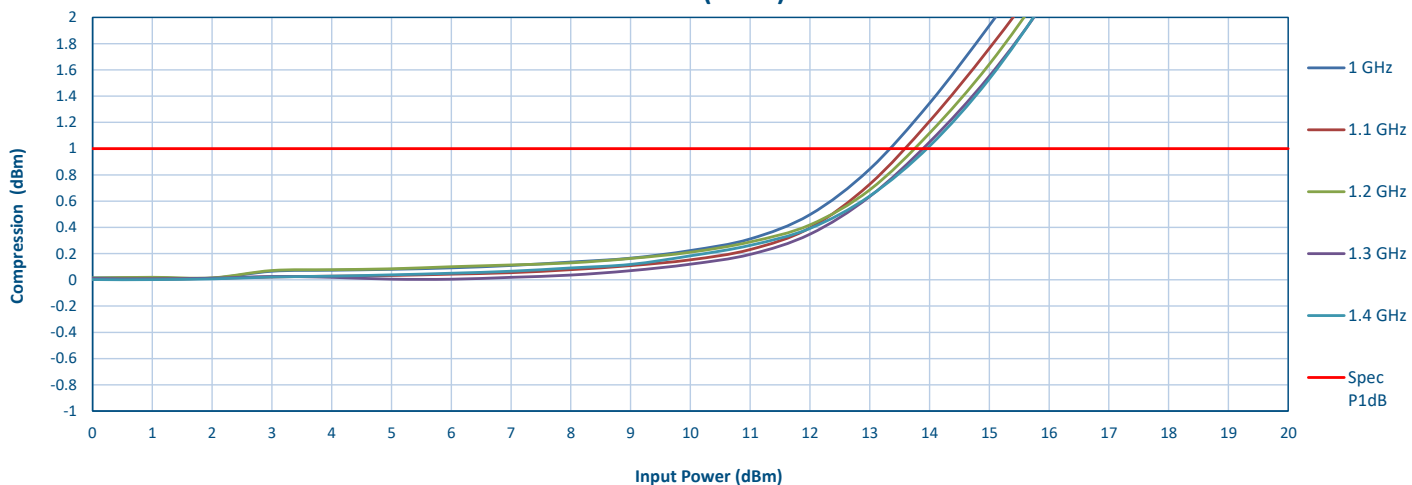


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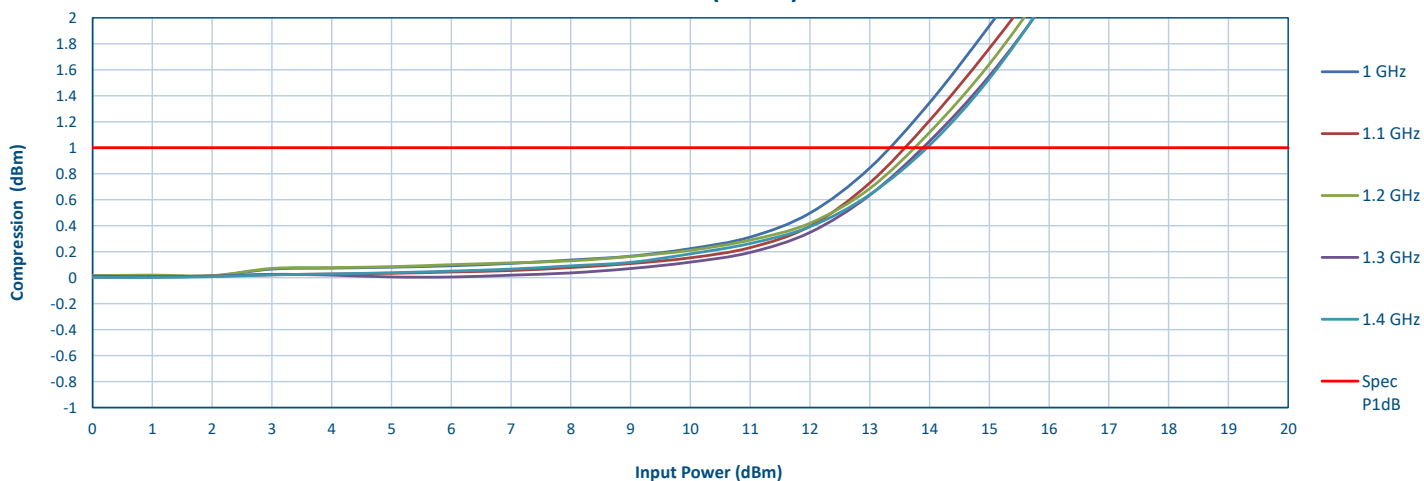
P1dB (+25°C)



P1dB (-40°C)

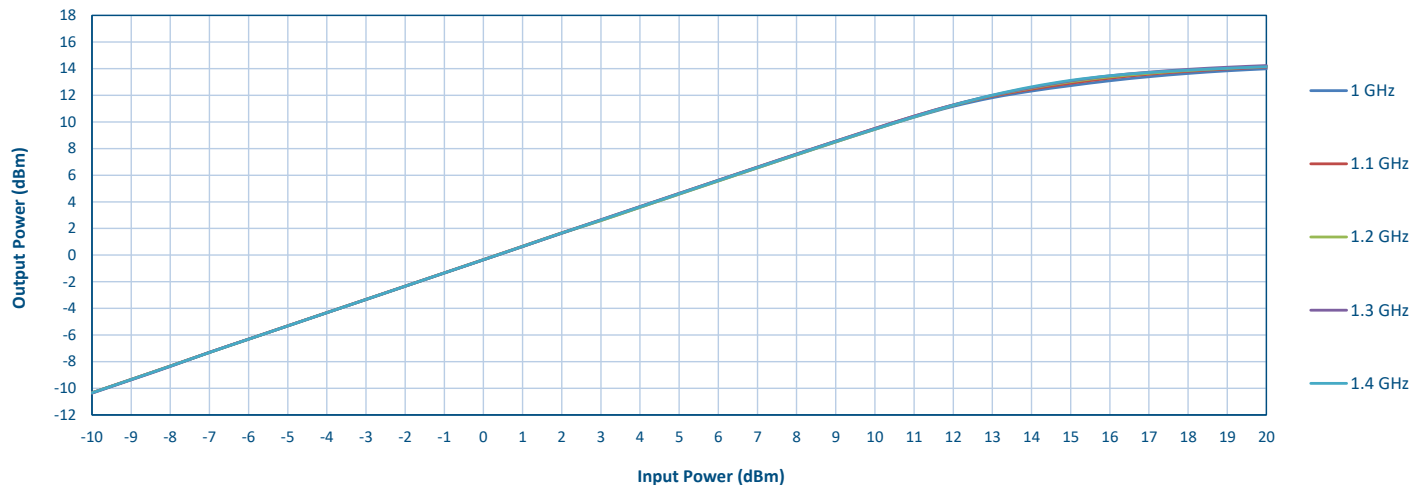


P1dB (+70°C)

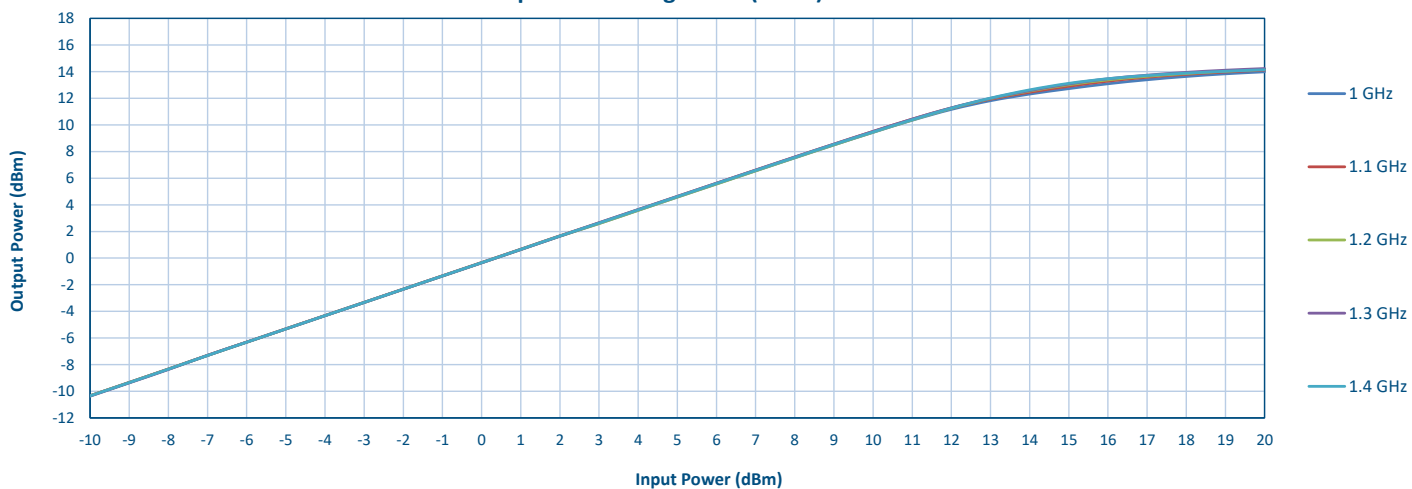


Typical Characteristics ON LM-1D2G1D4G-4KW-20DBM-SFM

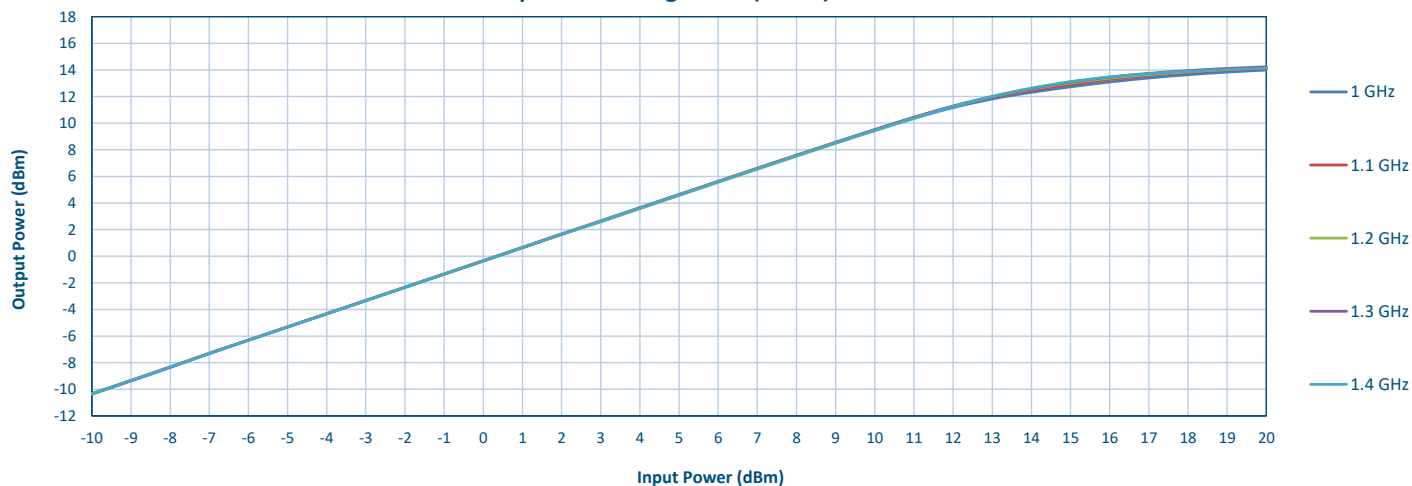
Response Limiting Curve (+25°C)



Response Limiting Curve (-40°C)

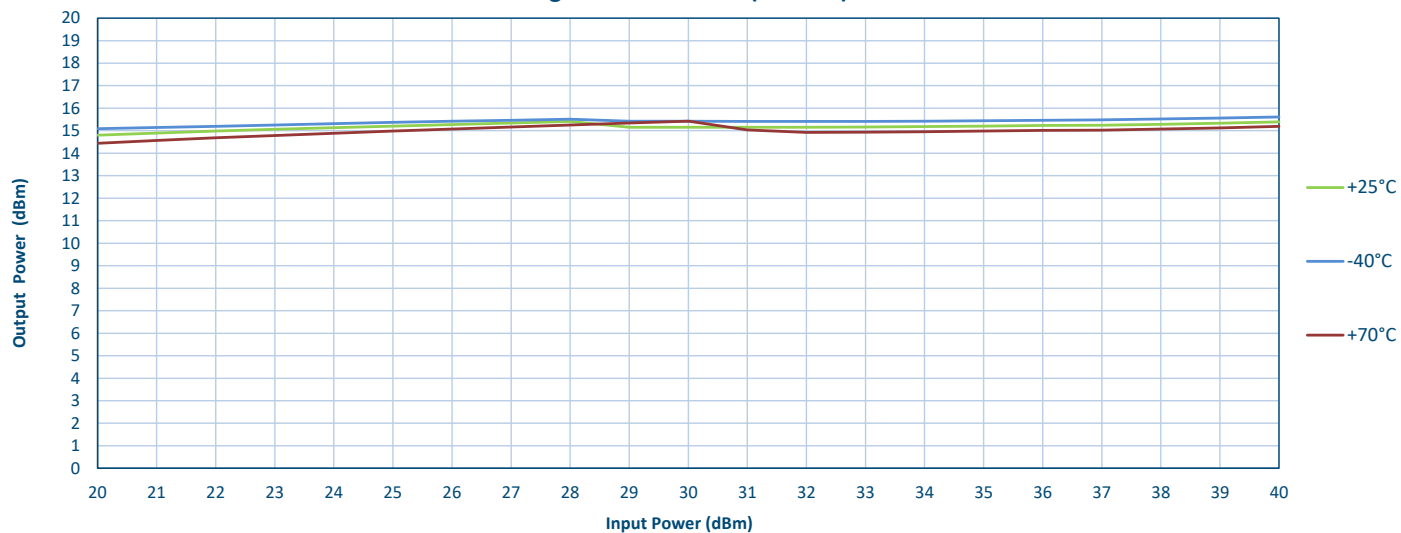


Response Limiting Curve (+70°C)

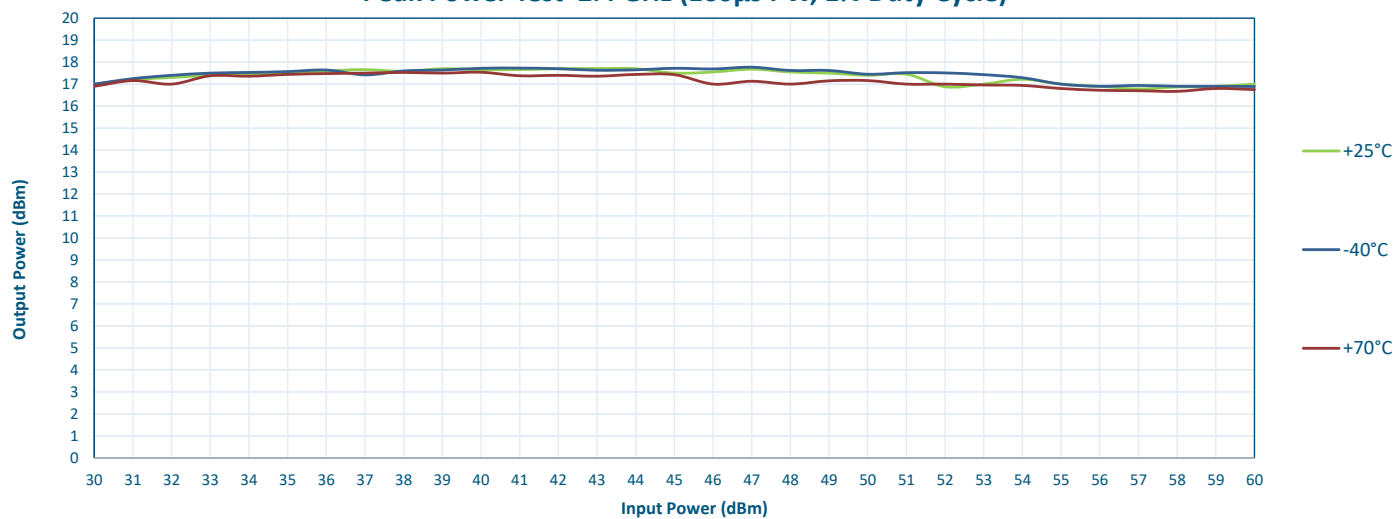


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High Power Test CW (1.4 GHz)

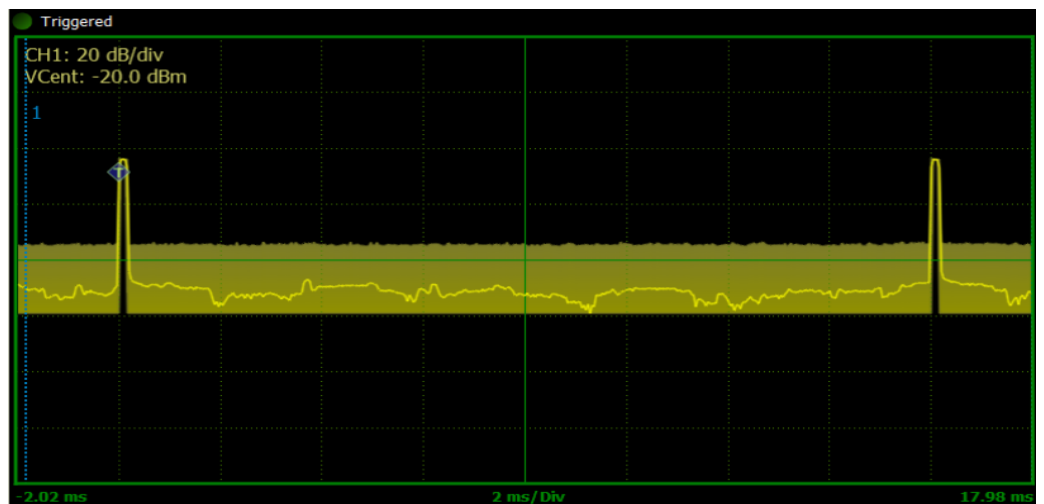
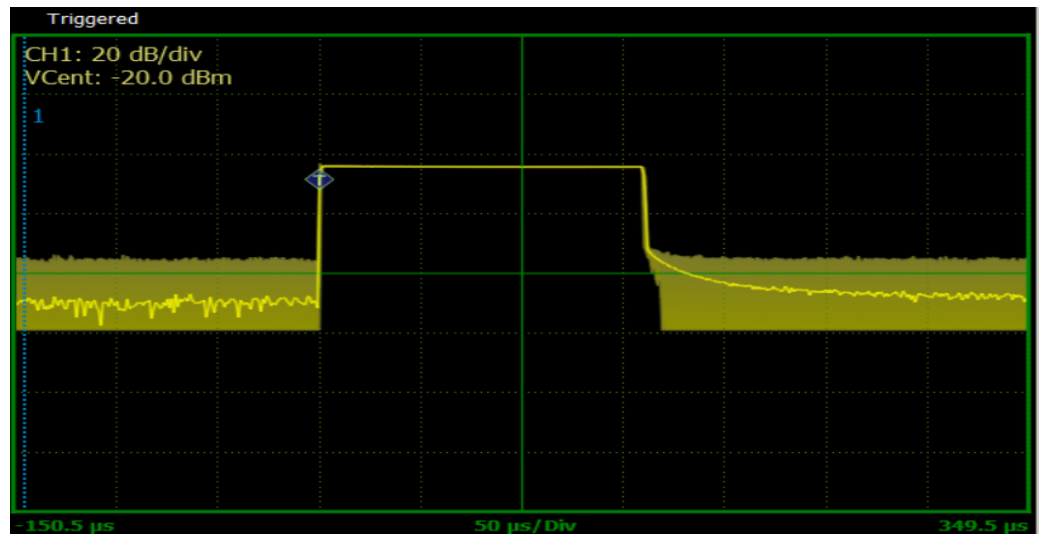


Peak Power Test 2.4 GHz (160μs PW, 1% Duty Cycle)



Typical Characteristics ON LM-1D2G1D4G-4KW-20DBM-SFM

Full Pulses
1kW Peak, 160 μ s PW, 1% Duty Cycle
Frequency 2.4 GHz



Automatic Measurements	
Pulse Def...	
Parameter	CH1
Width	162.44 μ s
WavAv	-3.885 dBm
Top	15.987 dBm
Skew	0.00 ns
Rise	-.--- s
PulsPk	16.455 dBm
PulsAv	15.487 dBm
PRF	62.501 Hz
Period	16.000 ms
OvrSht	0.130 dB
Offtime	15.837 ms
Fall	-.--- s
EdgDly	-23.300 μ s
Duty	1.015 %
Droop	-.--- dB
Bottom	-28.373 dBm