

TYPICAL CHARACTERISTICS
ON
LM-20M18G-100W-15DBM-TH-OPT618

THE MODEL PMI LM-20M18G-100W-15DBM-TH-OPT618 IS AN RF LIMITER THAT OPERATES IN THE RANGE OF FREQUENCIES FROM 6 GHz TO 18 GHz. THIS LIMITER CAN HANDLE UP TO 100 W CW FOR ALL TEMPERATURES (-55°C TO +85°C) THE ENERGY INPUT PROVIDES LEAKS OF +15 dBm MAX. THIS MODEL HAS A LOW INSERTION LOSS OF 2.6 dB AND A MAXIMUM 100ns RECOVERY



Thursday, March 14, 2024

Designed and Reported By: M. Laulis

Tested By: John R.

TYPICAL CHARACTERISTICS ON LM-20M18G-100W-15DBM-TH-OPT618

Outline Drawing

DESCRIPTION:

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SPECIFICATIONS:

- FREQUENCY RANGE:..... 6.0 TO 18.0 GHz
- RF POWER HANDLING:..... 100 W CW MAX
1kW PEAK MAX @ +85°C (1µs PULSE WIDTH, 0.1% DUTY CYCLE)
100W (1µs PULSE WIDTH, 1% DUTY CYCLE, 10 kHz)
100W (10 µs PULSE WIDTH, 0.1% DUTY CYCLE, 100 Hz)
100W (1µs PULSE WIDTH, 1% DUTY CYCLE, 1 kHz)
100W (40 µs PULSE WIDTH, 1% DUTY CYCLE, 2.5 kHz)
- INSERTION LOSS:..... 2.6dB MAX @ -10 dBm INPUT POWER
- RECOVERY TIME:..... 100ns MAX @ 100 W PEAK POWER
- LEAKAGE POWER:..... +15 dBm MAX AT 100 W CW
- VSWR:..... 2.0 : 1 MAX @ -10 dBm INPUT POWER
- LIMITING THRESHOLD (P1dB):..... +5 dBm MIN
- CONNECTORS:..... INPUT: SMA MALE, OUTPUT: SMA FEMALE
- WEIGHT:..... 20g [0.705 oz] MAX
- SIZE:..... 15.88mm x 20.32mm x 10.16mm
0.625" x 0.80" x 0.40"
EXCLUDING CONNECTORS
- FINISH:..... PAINTED BLUE

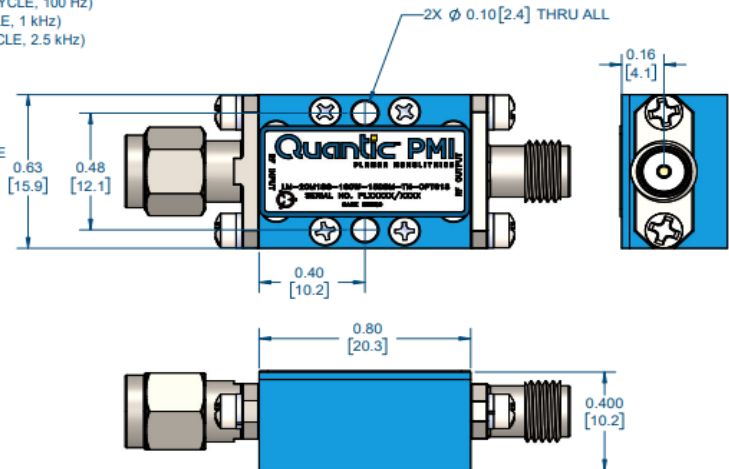
*NO DC BLOCKS ARE USED INSIDE THIS LIMITER

ENVIRONMENTAL RATINGS:

- TEMPERATURE:..... -55°C TO +85°C (OPERATING)
-62°C TO +95°C (STORAGE)
- VIBRATION:..... 0.1 inchpp OR ± 10G, 5 ~ 500 Hz
(FIGURE 2, SHEET 1 OF 3, CURVE IV)
- HUMIDITY:..... MIL-STD-202, METHOD 103B COND. B
- SHOCK:..... MIL-STD-202, METHOD 213B COND. B
- ALTITUDE:..... MIL-STD-202, METHOD 105C COND. B
- TEMPERATURE CYCLE:..... MIL-STD-202, METHOD 107D COND. A

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

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	10/08/05	

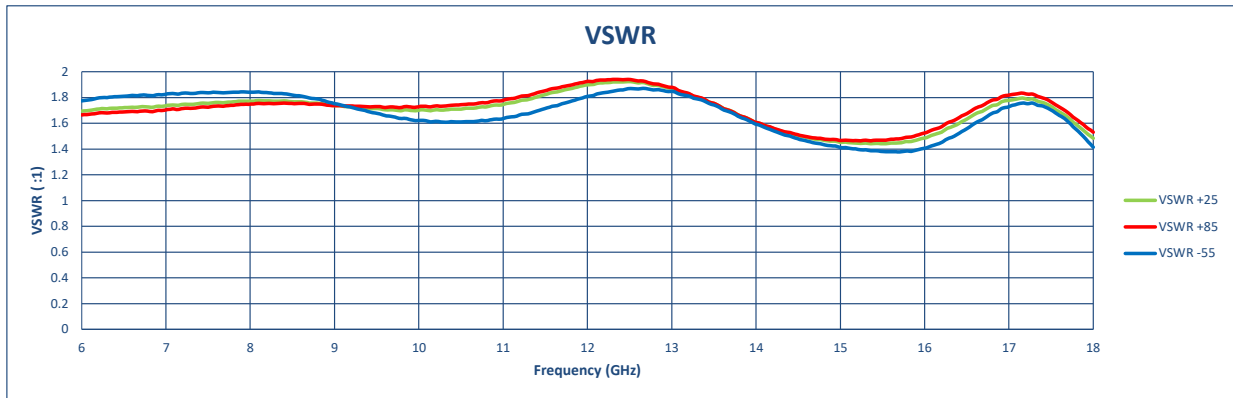


PMI CONFIDENTIAL AND PROPRIETARY			
Quantic PMI PLANAR MONOLITHICS			
FEDERAL GOVERNMENT SOURCES: (1) 7309-A GROVE ROAD, FREDERICK, MD 21704 USA (2) 10000 TOWNE SQUARE, SUITE 100, FARMERSBURGH, NY 11731 USA (3) 10000 TOWNE SQUARE, SUITE 100, FARMERSBURGH, NY 11731 USA			
APPROVALS	DATE	TITLE	
DESIGN M. LAULIS	10/08/05	OUTLINE	
REVIEWED		LM-20M18G-100W-15DBM-TH-OPT618	
DESIGNED		REV. NO.	27047100
		REV. NO.	A1
SCALE 2:1			SHEET 1 OF 1

**TYPICAL CHARACTERISTICS
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TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	Test Results			QA QC
			+25°C	+85°C	-55°C	
1	Frequency Range:	6 GHz to 18 GHz	6 GHz to 18 GHz	6 GHz to 18 GHz	6 GHz to 18 GHz	
2	Insertion Loss:	2.6 dB Max. @ -10 dBm Input Power	2.36 dB See Graph	2.58 dB See Graph	2.08 dB See Graph	
3	VSWR:	2.0:1 Max. @ -10 dBm Input Power	1.92:1 See Graph	1.94:1 See Graph	1.87:1 See Graph	
4	RF Power Handling:	100 W CW Max.	100 W CW	100 W CW	100 W CW	
		1kW PEAK MAX +85°C (1µs PULSE WIDTH, 0.1% DUTY CYCLE) 100W (1µs PULSE WIDTH, 1% DUTY CYCLE, 10 kHz) 100W (10 µs PULSE WIDTH, 0.1% DUTY CYCLE, 100 Hz) 100W (1µs PULSE WIDTH, 1% DUTY CYCLE, 1 kHz) 100W (40µs PULSE WIDTH, 1% DUTY CYCLE, 2.5 kHz)	1kW PEAK MAX +85°C (1µs PULSE WIDTH, 0.1% DUTY CYCLE) 100W (1µs PULSE WIDTH, 1% DUTY CYCLE, 10 kHz) 100W (10 µs PULSE WIDTH, 0.1% DUTY CYCLE, 100 Hz) 100W (1µs PULSE WIDTH, 1% DUTY CYCLE, 1 kHz) 100W (40µs PULSE WIDTH, 1% DUTY CYCLE, 2.5 kHz)			
5	Limiting Threshold:	+ 5 dBm MIN (1 dB Compression)	+ 8 dBm See Graph	+ 6 dBm See Graph	+ 9 dBm See Graph	
6	Leakage Power:	15dBm MAX @ 100 W CW	14.24 dBm	13.31 dBm	14.88 dBm	
7	Recovery Time (3dB) :	100 ns Max. 100 W Peak Power	63.5 ns			

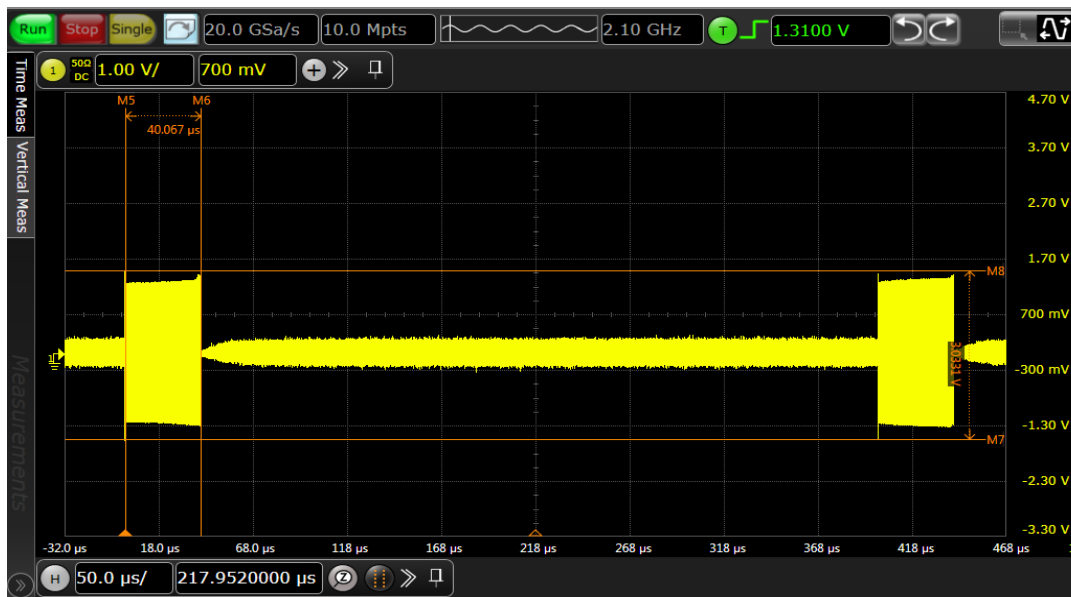
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Recovery Time

Full Pulse

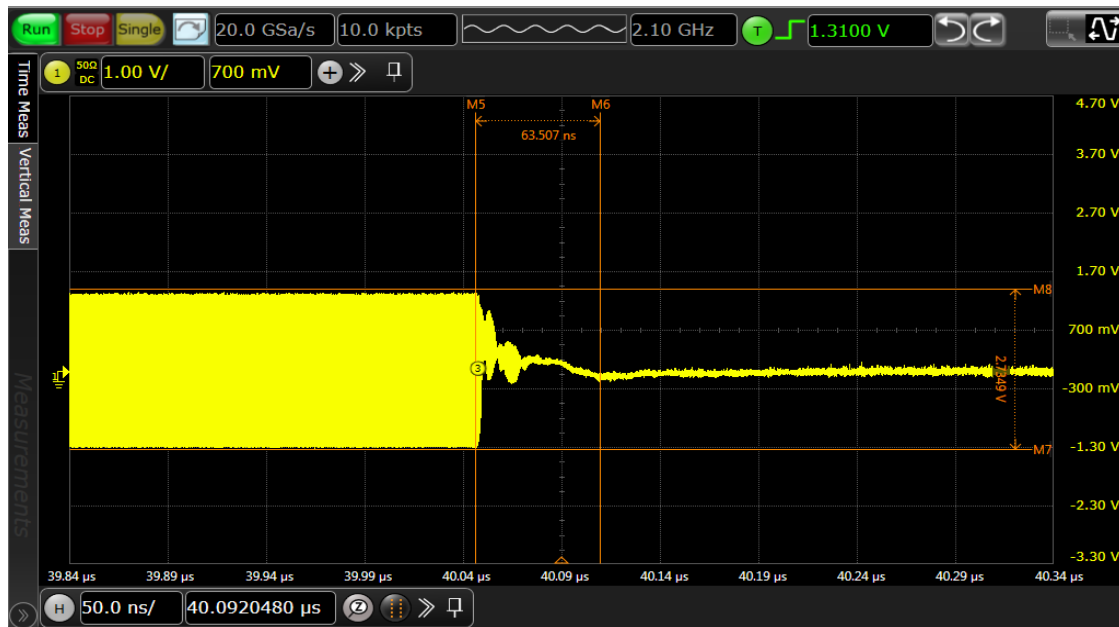
40 dBm, 40 μ s Pulse 2.5 kHz PRF, 10% Duty Cycle



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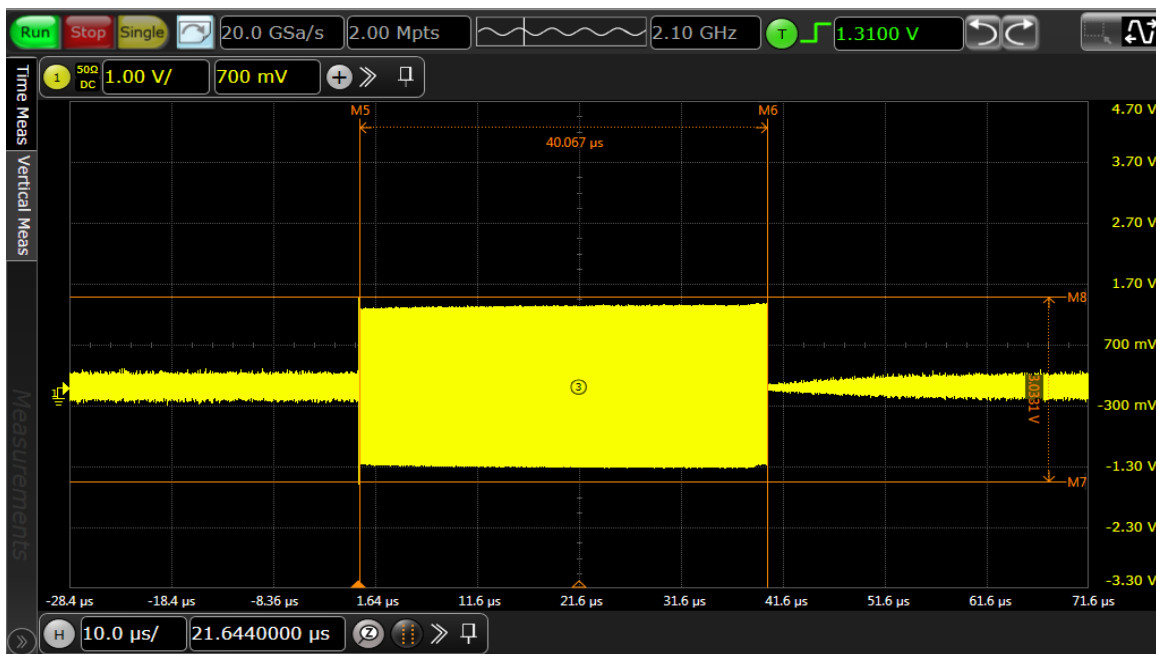
Recovery Time

40 dBm, 40 μ s Pulse 2.5 kHz PRF



Single Pulse

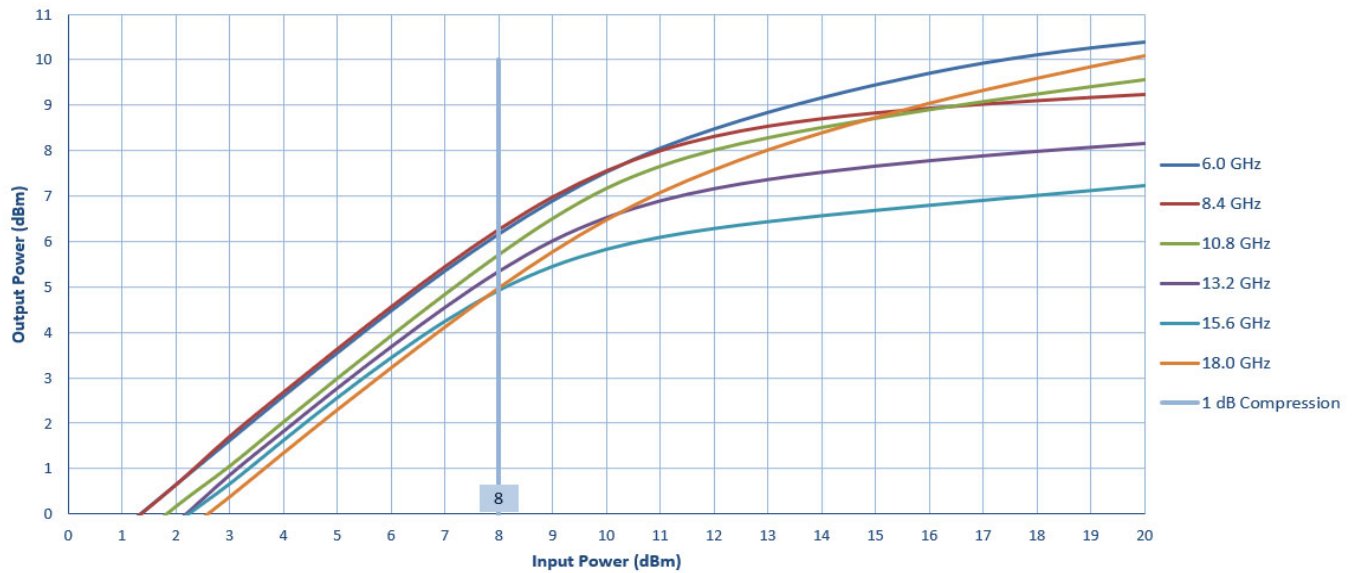
40 dBm, 40 μ s Pulse 2.5 kHz PRF



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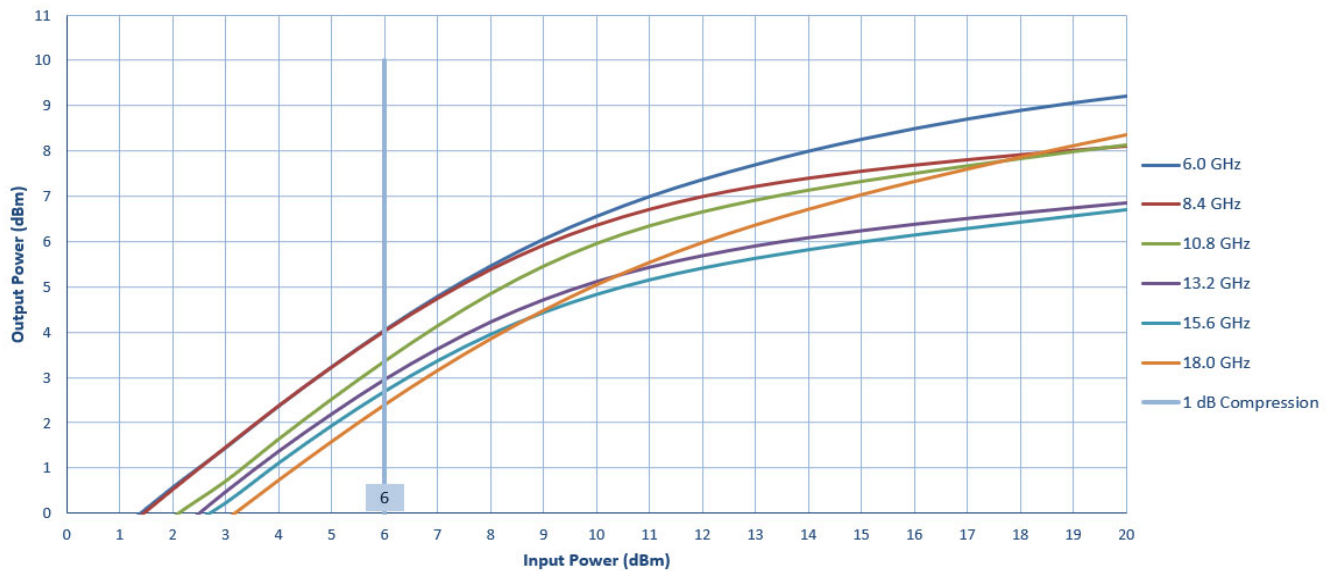
Limiter Response 25°C

Limiter Response with Frequency



85°C

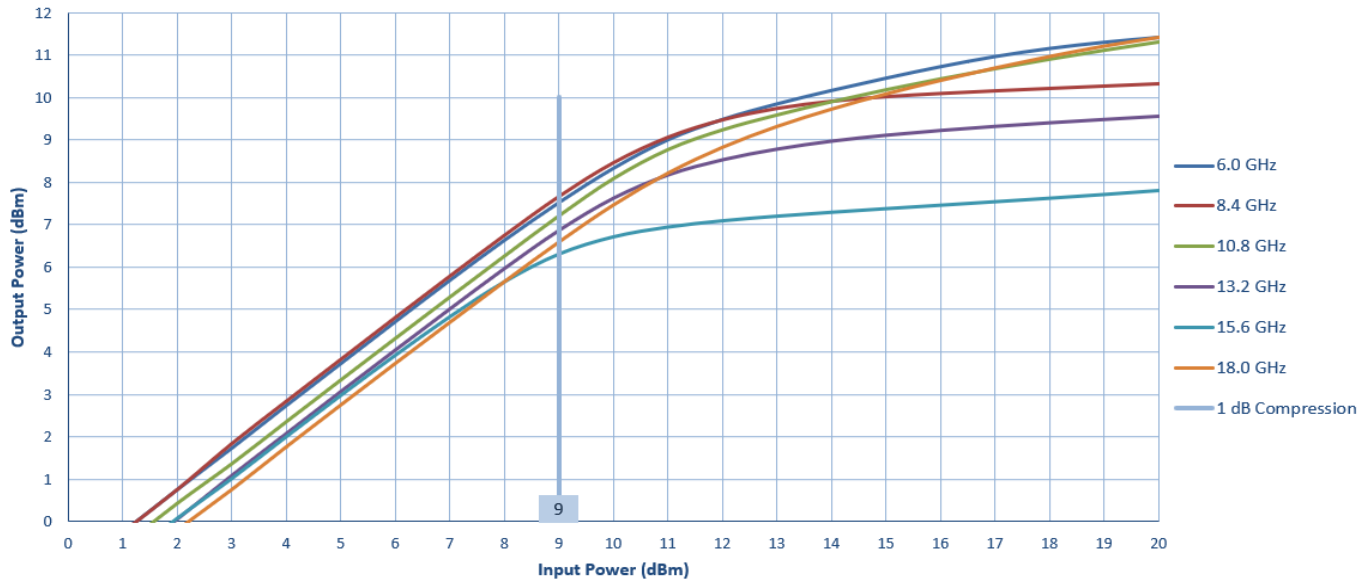
Limiter Response with Frequency



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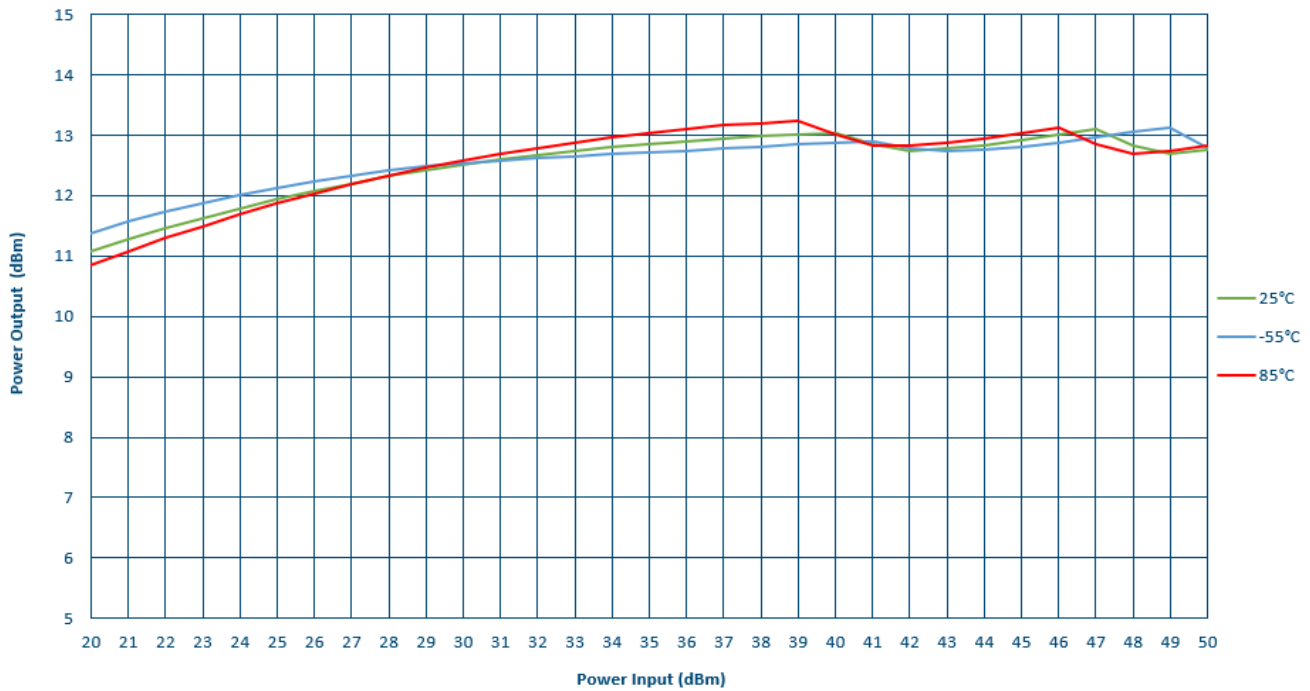
-55°C

Limiter Response with Frequency



Leakage Power

High Power Test Graph @ 6 GHz



TYPICAL CHARACTERISTICS ON LM-20M18G-100W-15DBM-TH-OPT618

High Power Test Graph @ 18 GHz

