TYPICAL CHARACTERISTICS ON LM-0118-10-1W-SHS-2-FM-ROHS

PLANAR MONOLITHICS INDUSTRIES MODEL NUMBER LM-0118-10-1W-SHS-2-FM-ROHS IS A HIGH POWER LIMITER THAT WORKS FROM 100 MHz TO 18 GHz THAT HANDLES 100 WATTS PEAK POWER WITH A PULSE WIDTH OF 1 us.

Tuesday, November 5, 2024

Reported By: D. Hoschar

Tested By: John R.

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Email: sales@quanticpmi.com

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Outline Drawing

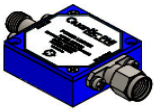
DESCRIPTION:

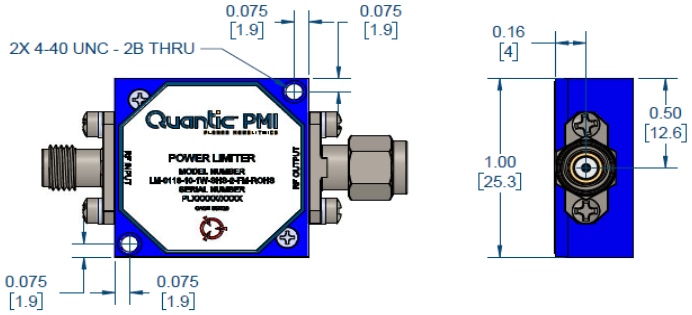
PLANAR MONOLITHICS INDUSTRIES MODEL NUMBER LM-0118-10-1W-SHS-2-FM-ROHS IS A HIGH POWER LIMITER THAT WORKS FROM 100 MHz TO 18 GHz THAT HANDLES 100 WATTS PEAK POWER WITH A PULSE WIDTH OF 1 us.

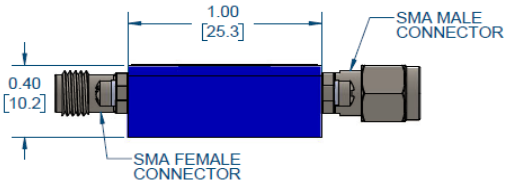
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	4/4/2024	
	B1	ECN # 24-0293	10/15/24	

SPECIFICATIONS:

- FREQUENCY RANGE: 100 MHz TO 18 GHz
- INSERTION LOSS @ -20 dBm: 1.8 dB MAX, 1.5 dB TYP
- VSWR @ -20 dBm: 2.0:1 MAX, 1.5:1 TYP
- LEAKAGE @ 1 WATT: +15 dBm MAX, +10 dBm TYP
- POWER: 5 WATTS CW
- PEAK POWER: 100 WATTS
- PULSE WIDTH: 1 us
- DUTY CYCLE: 0.1%
- CONNECTOR (INPUT): SMA FEMALE
- CONNECTOR (OUTPUT): SMA MALE
- SIZE: 1.00" X 1.00" X 0.40" (H)
- WEIGHT: 1.5 OZ. MAX
- FINISH: PAINTED BLUE







ENVIRONMENTAL RATINGS:

- TEMPERATURE: -54°C TO +85°C (OPERATING)
  -65°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202, METHOD 103B COND. B
- SHOCK: MIL-STD-202, METHOD 213B COND. B
- VIBRATION: MIL-STD-202, METHOD 204D 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

PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS	DATE
DRAWN D HOSCHAR	4/4/2024
REDRAWN	
ISSUED	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± 0.02 .XXX ± 0.01 ANGLES ±

Quantic PMI PLANAR MONOLITHICS
7309-A GROVE ROAD FREDERICK, MARYLAND 21704 USA
PH: (301) 662-5019 FAX: (301) 662-1731
WEB: WWW.QUANTICPMI.COM E-MAIL: SALES@QUANTICPMI.COM
ISO 9001 CERTIFIED

TITLE: OUTLINE
LM-0118-10-1W-SHS-2-FM-ROHS

SIZE	FSCM NO.	DWG NO.	REV.
B	05XQ0	27048480	B1

SCALE 2:1 SHEET 1 OF 1

TYPICAL CHARACTERISTICS ON LM-0118-10-1W-SHS-2-FM-ROHS

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	Test Results		
			+25°C	+85°C	-54°C
1	Frequency Range:	100 MHz to 18 GHz	**100 MHz to 8 GHz**	**100 MHz to 8 GHz**	**100 MHz to 8 GHz**
2	Insertion Loss @ -20 dBm:	1.8 dB Max, 1.5 dB Typ @ -20 dBm Input Power	**1.43 dB**	**1.62 dB**	**1.32 dB**
3	VSWR @ -20 dBm:	2.0:1 Max, 1.5:1 Typ @ -20 dBm Input Power	**1.42:1**	**1.45:1**	**1.4:1**
4	Leakage @ 1 Watt:	+15 dBm Max +10 dBm Typ	**13.63 dBm See Graphs**	**14.3 dBm See Graphs**	**13.17 dBm See Graphs**
5	RF Power Handling:	5 W CW 100 W PEAK (1 µs Pulse Width / 0.1% Duty Cycle)	**5 W CW 100 W PEAK (1 µs Pulse Width / 0.1% Duty Cycle) See Graphs**		

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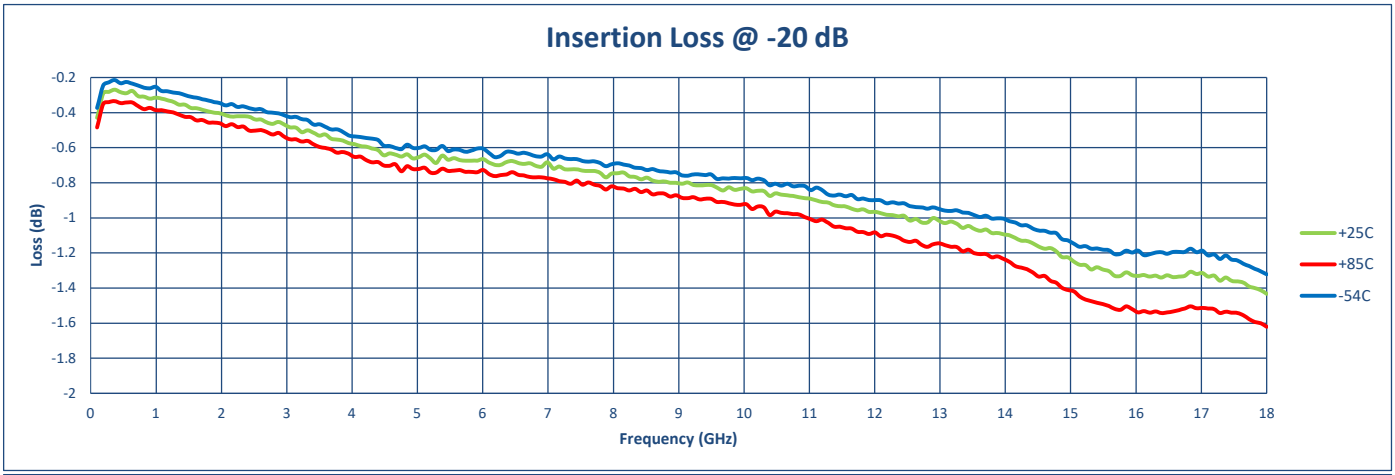
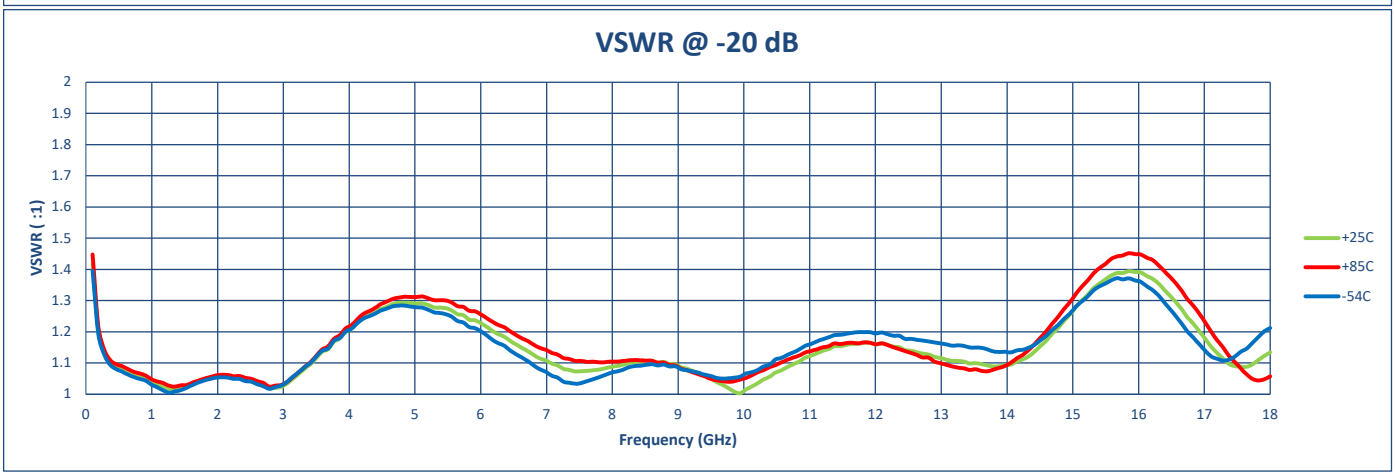
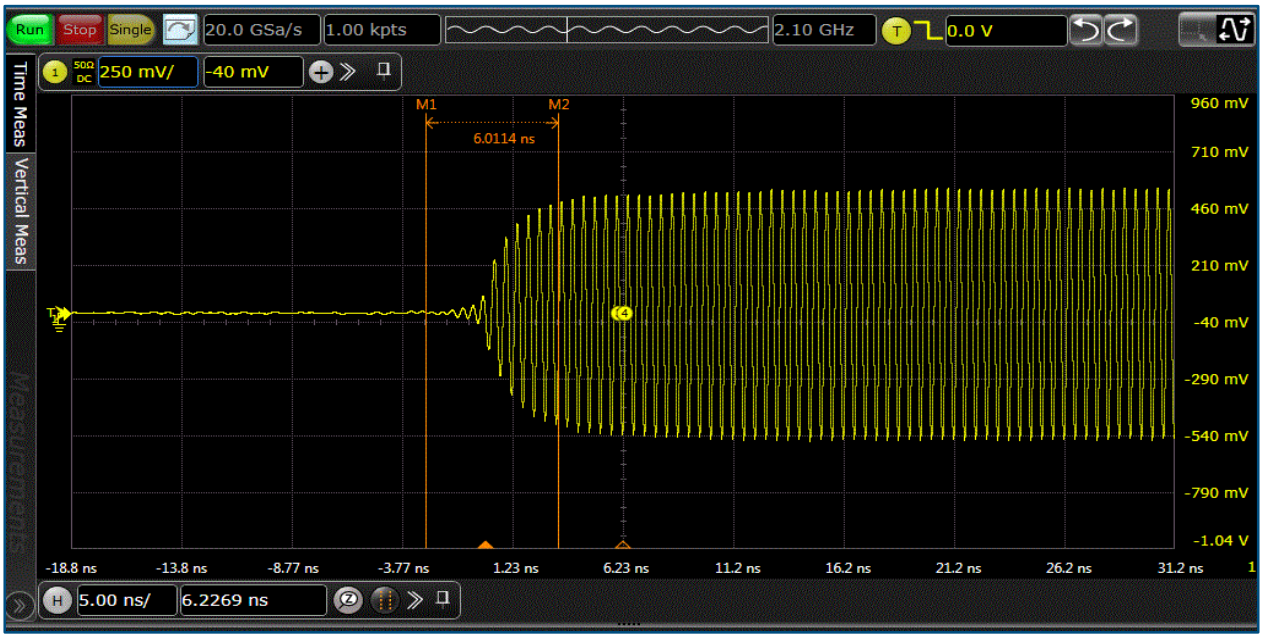




Rise time



5 ns Per Div
Measured value - 6.0 ns

Pulsed
0.1% Duty Cycle, 1 µs PW, 1 KHz PRF

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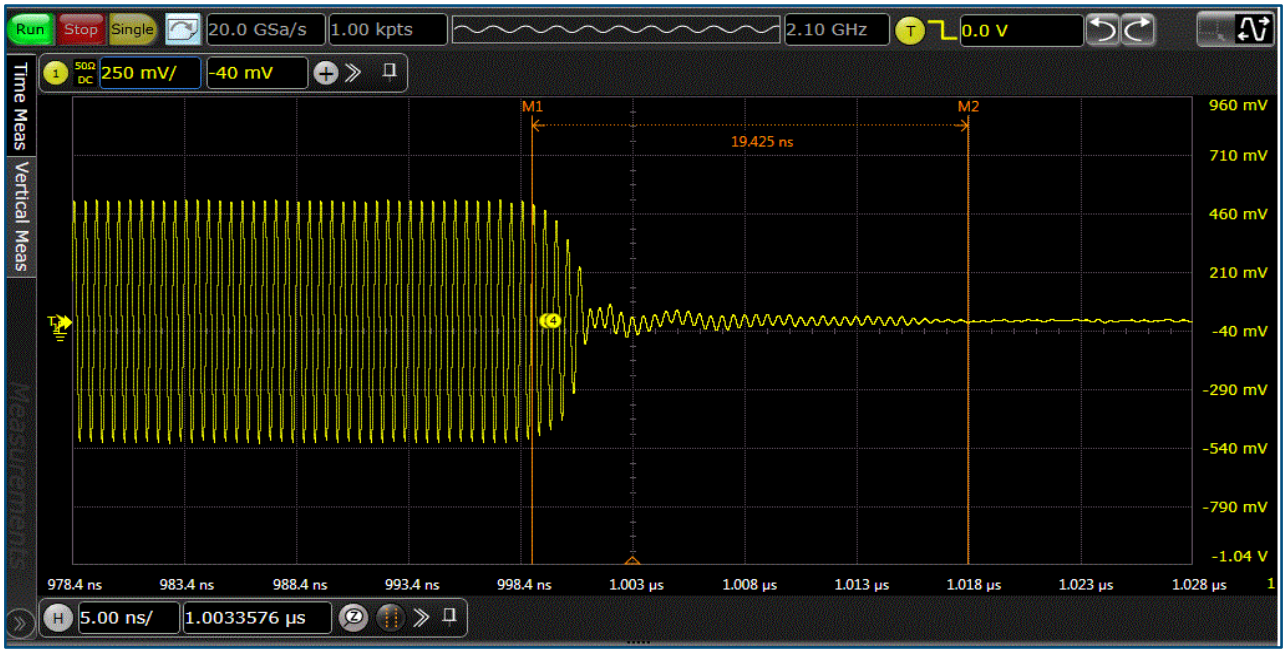
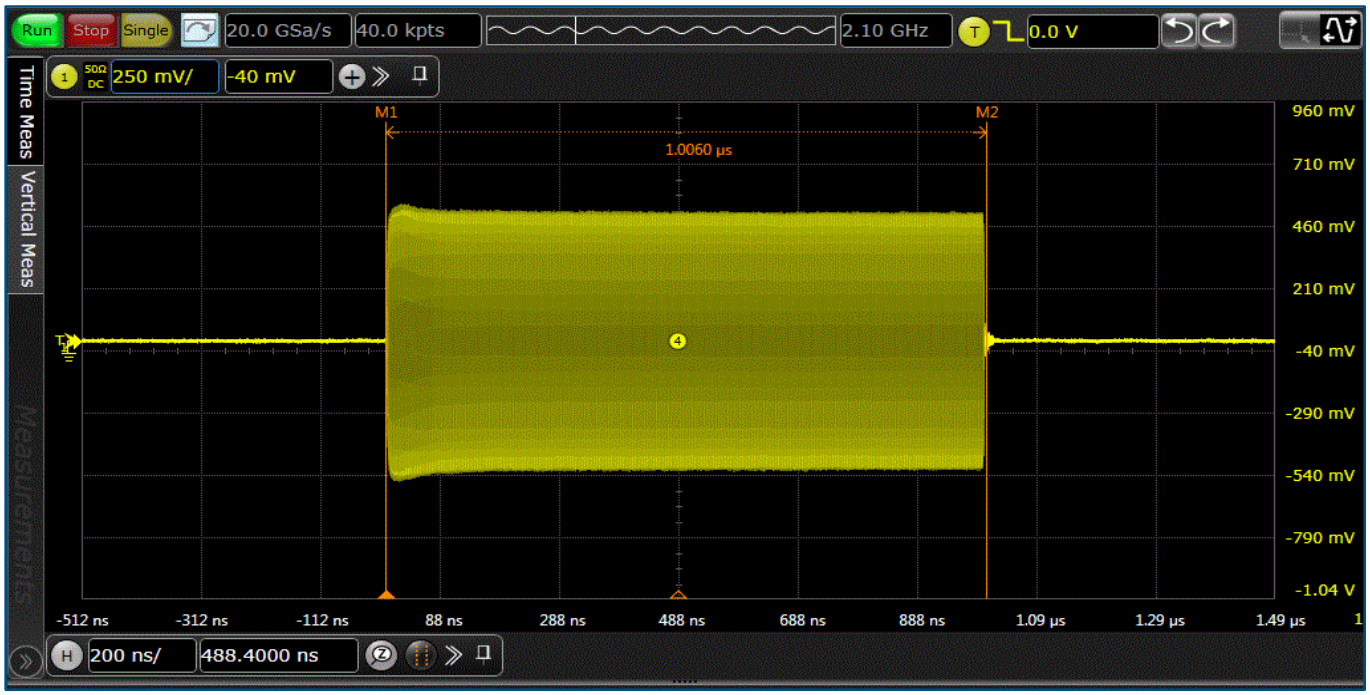
Recovery Time



5 ns Per Div
Measured value - 19.42 ns

Pulsed
0.1% Duty Cycle, 1 µs PW, 1 KHz PRF

Full Pulse



200 ns Per Div

Pulsed
0.1% Duty Cycle, 1 µs PW, 1 KHz PRF

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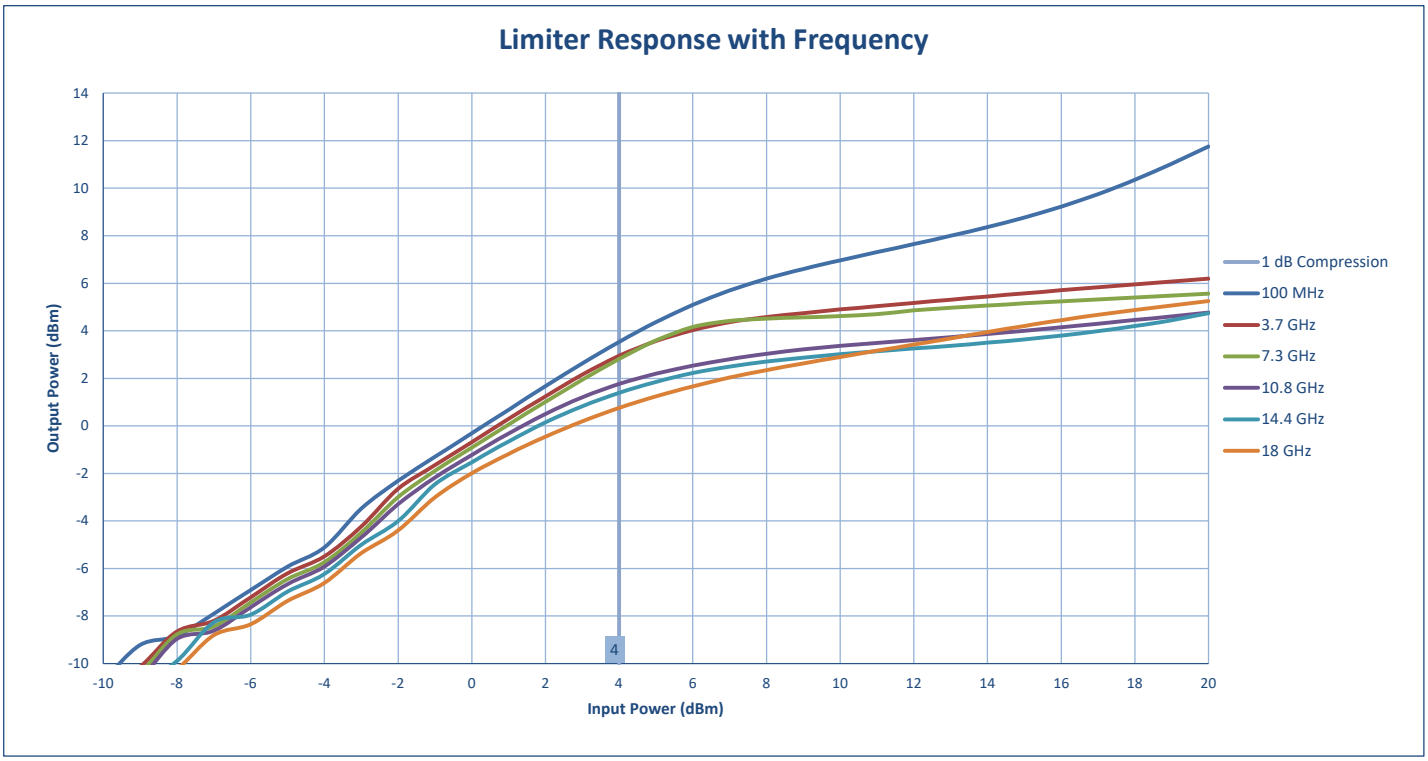
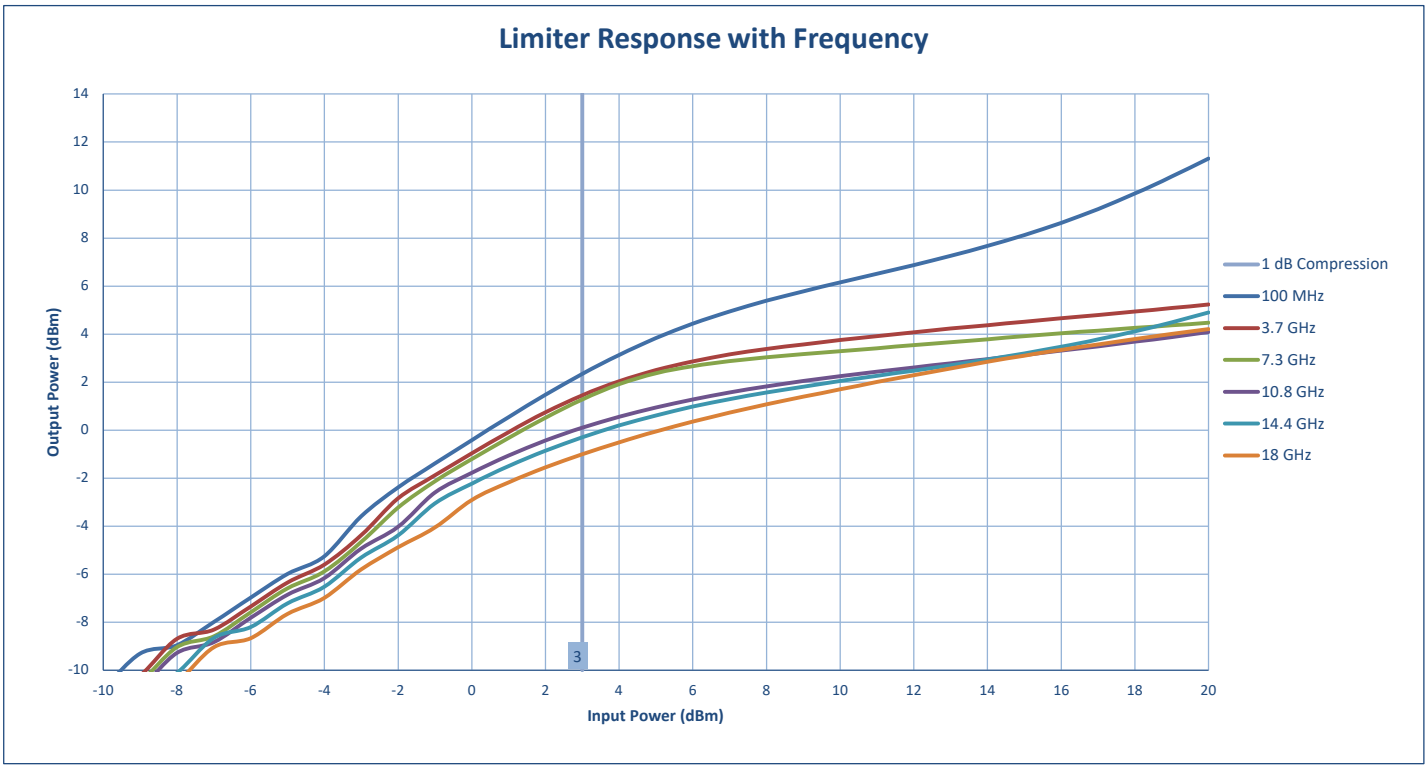
Limiter Response

25°C



85°C



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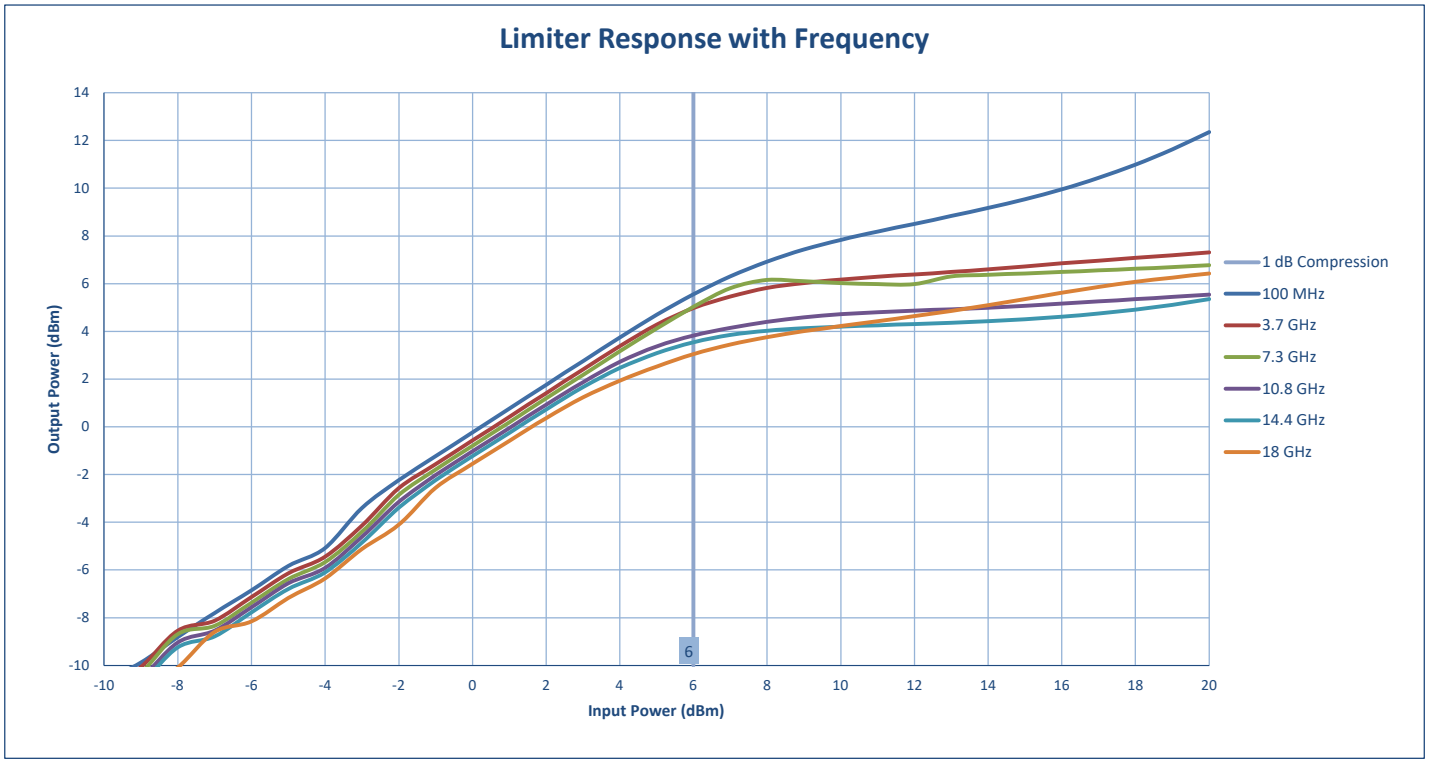
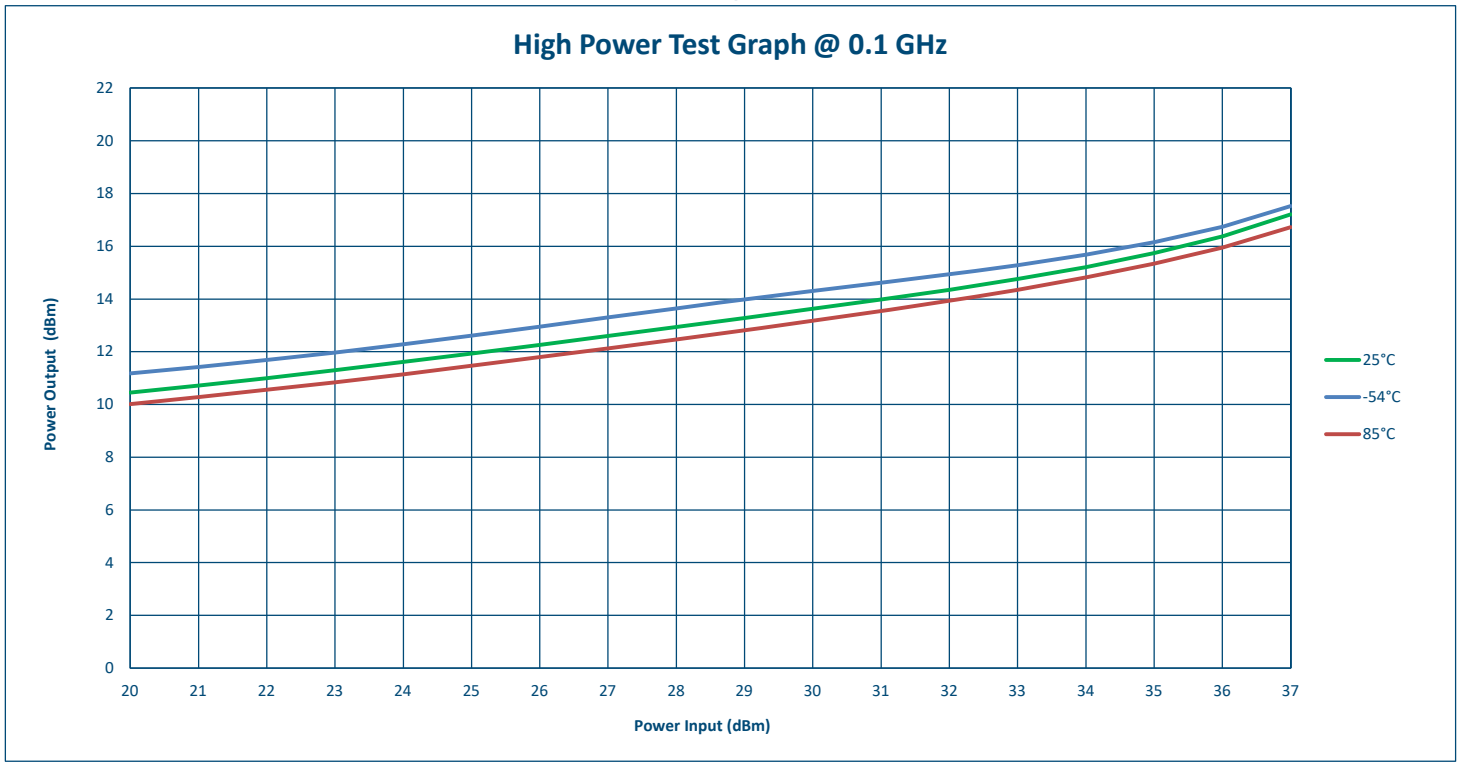
-54°C



Leakage Power



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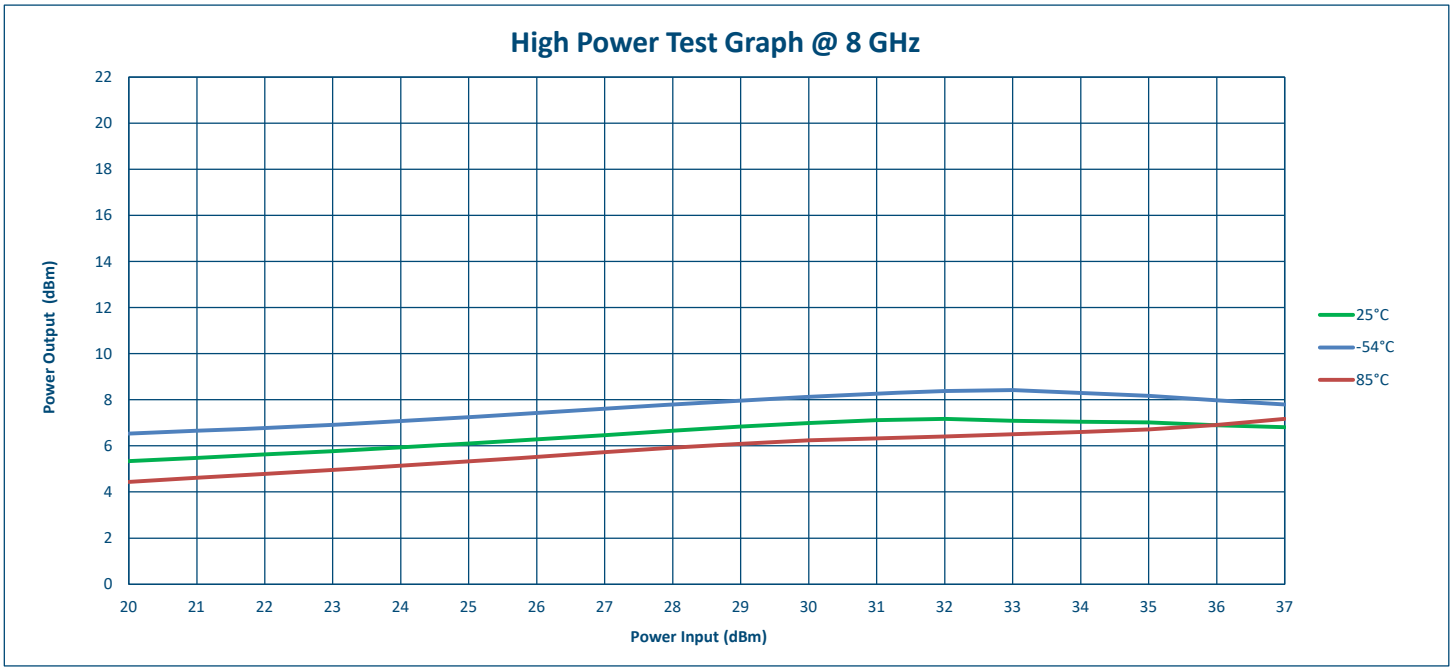

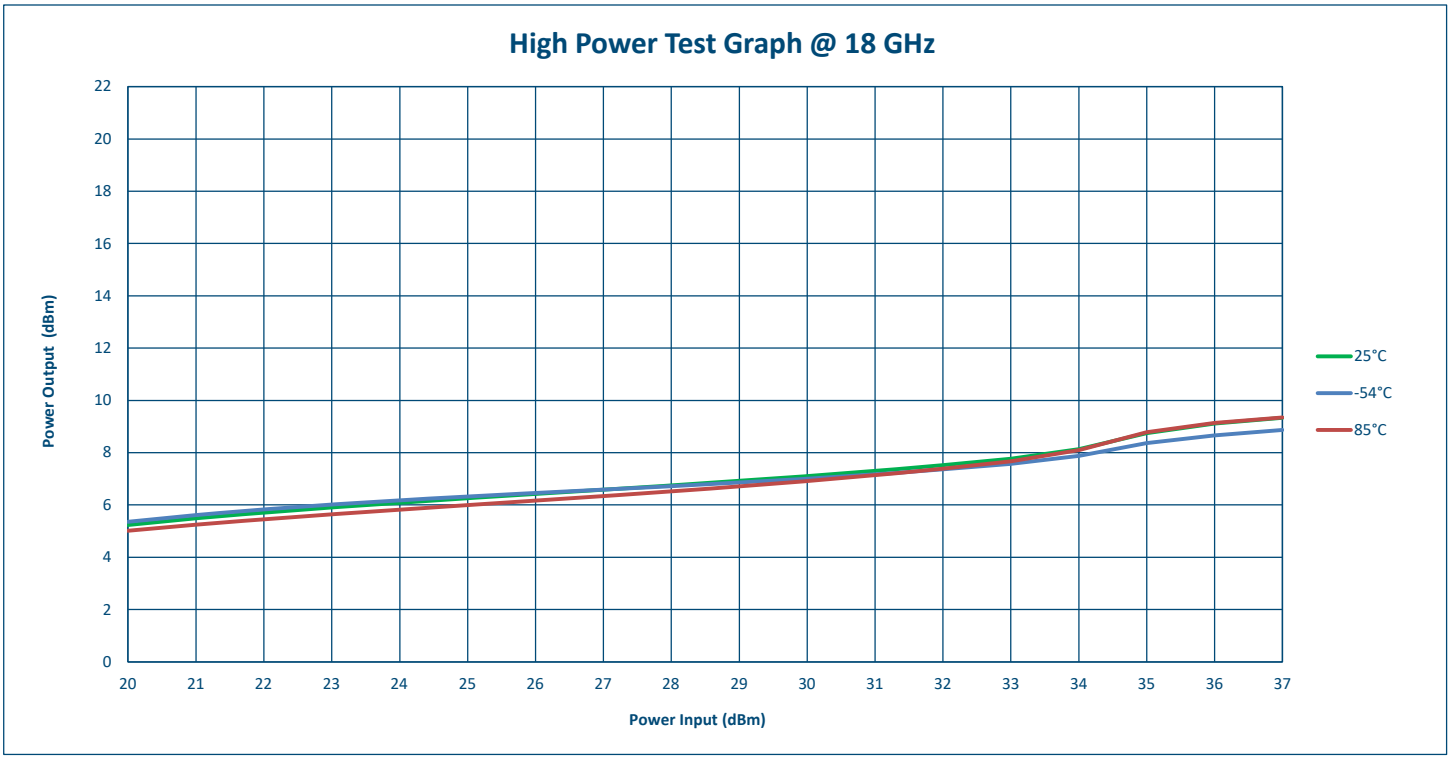

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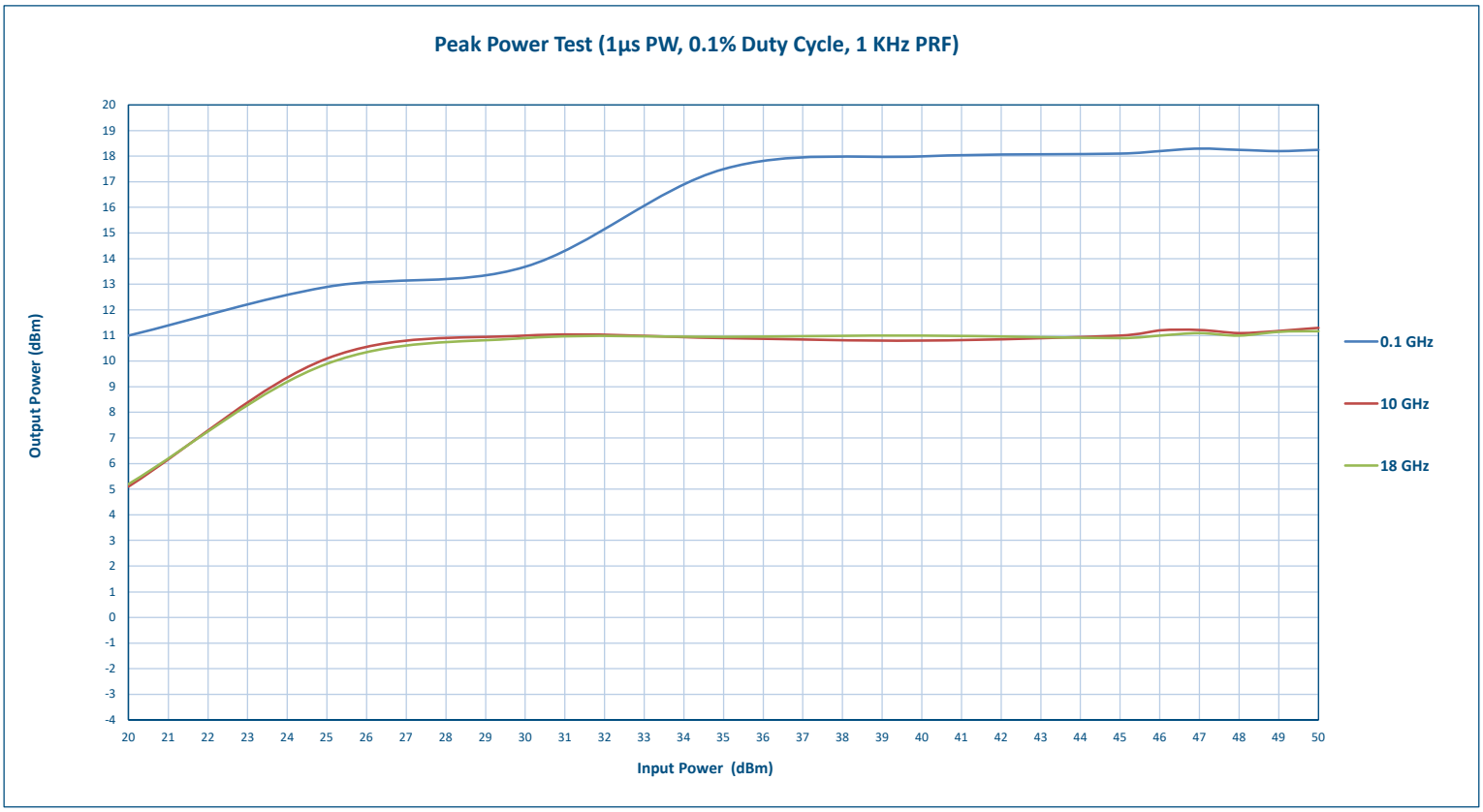

Peak Power test Data

PW 1µs, Duty Cycle 0.1%, PRF 1KHz		PW 1µs, Duty Cycle 0.1%, PRF 1KHz		PW 1µs, Duty Cycle 0.1%, PRF 1KHz	
Input Power (dBm)	Output Power (dBm)	Input Power (dBm)	Output Power (dBm)	Input Power (dBm)	Output Power (dBm)
0.1 GHz		10 GHz		18 GHz	
20	11.00	20	5.10	20	5.20
25	12.90	25	10.10	25	9.90
30	13.68	30	11.00	30	10.90
35	17.50	35	10.90	35	10.95
40	18.00	40	10.80	40	11.00
45	18.10	45	11.00	45	10.90
46	18.20	46	11.20	46	11.00
47	18.30	47	11.22	47	11.10
48	18.25	48	11.10	48	11.00
49	18.20	49	11.18	49	11.15
50	**18.25**	50	11.30	**50**	**11.17**

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