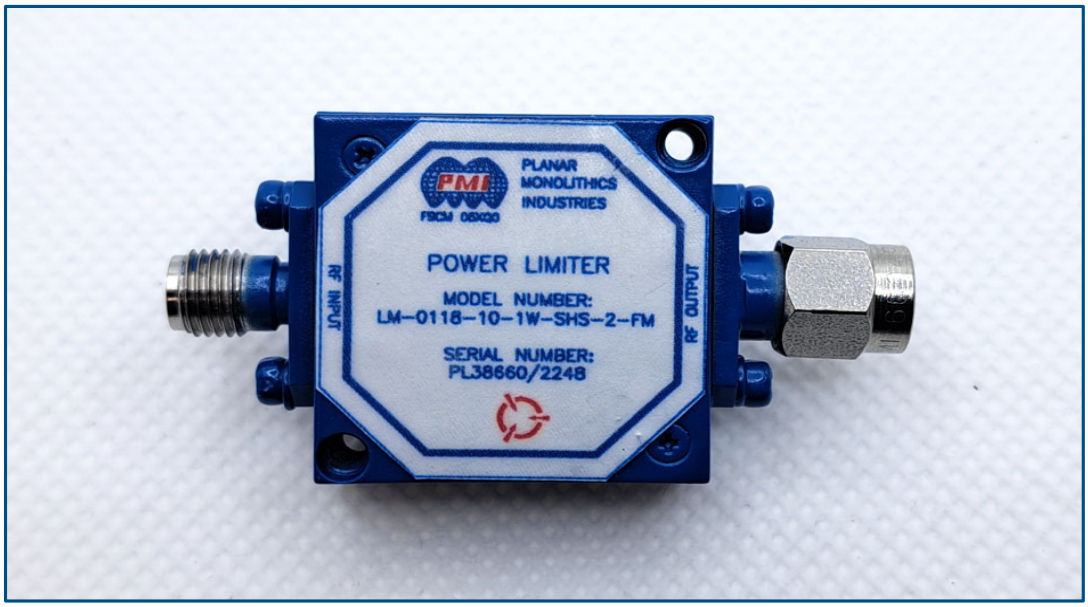
Typical Characteristics ON LM-0118-10-1W-SHS-2-FM

PLANAR MONOLITHICS INDUSTRIES MODEL NUMBER LM-0118-10-1W-SHS-2-FM 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.



November 30, 2022

Designed By:

Engineering PMI

Tested and Reported By:

Alfredo Lopez

7309-A Grove Road Frederick, MD 21704 USA Phone: (301)662-5019 Fax: (301)662-1731
Email: sales@pmi-rf.com

Typical Characteristics ON LM-0118-10-1W-SHS-2-FM

Product Feature

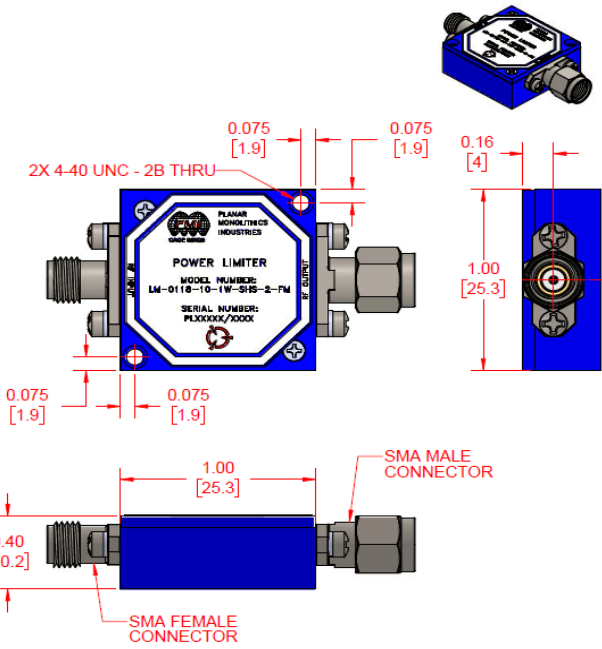
DESCRIPTION:

PLANAR MONOLITHICS INDUSTRIES MODEL NUMBER LM-0118-10-1W-SHS-2-FM 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	9/13/2022	
	A2	ECN # 22-0164	12/14/2022	
	B1	ECN # 24-0293	10/16/24	

SPECIFICATIONS:

- FREQUENCY RANGE: ..... 100 MHz TO 18 GHz
- INSERTION LOSS @ -20 dBm: ..... 2.0 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: J ESCANO	9/13/2022
REDRAWN	
ISSUED	

PLANAR MONOLITHICS INDUSTRIES, INC.
7311-F GROVE ROAD
FREDERICK, MARYLAND 21704 USA
TEL: (301)-662-5019 FAX: (301)-662-1731
WEB: www.pmi-rf.com EMAIL: sales@pmi-rf.com
ISO 9001 CERTIFIED

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

SIZE	FSCM NO.	DWG NO.	REV.
B	05XQ0	27043400	B1

SCALE 2:1 SHEET 1 OF 1

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Typical Characteristics ON LM-0118-10-1W-SHS-2-FM

Technical Specifications

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	Test Results			QA QC
			+25°C	-54°C	+85°C	
1	Frequency Range:	100 MHz to 18 GHz	100 MHz to 18 GHz	100 MHz to 18 GHz	100 MHz to 18 GHz	
2	Insertion Loss @-20 dBm:	2.0 dB Max. 1.5 dB Typ.	1.48 dB See Graph	1.36 dB See Graph	1.66 dB See Graph	
3	VSWR @ -20 dBm:	2.0:1 Max. 1.5:1 Typ.	1.96 :1 See Graph	1.94 :1 See Graph	1.99 :1 See Graph	
4	Leakage @ 1 Watt:	+14 dBm Max. +10 dBm Typ.	13.87 dBm See Graphs	13.87 dBm See Graphs	13.87 dBm See Graphs	
5	Power:	5 Watts CW	Pass 5 Watts CW See Graphs	Pass 5 Watts CW See Graphs	Pass 5 Watts CW See Graphs	
6	Peak Power:	100 Watts	Pass 100 Watts Pulsed See Graphs	Pass 100 Watts Pulsed See Graphs	Pass 100 Watts Pulsed See Graphs	
7	Pulse Width:	1 µs	Pass 1µS Peak Power test	Pass 1µS Peak Power test	Pass 1µS Peak Power test	
8	Duty Cycle:	0.1%	Pass 0.1% Peak Power test	Pass 0.1% Peak Power test	Pass 0.1% Peak Power test	

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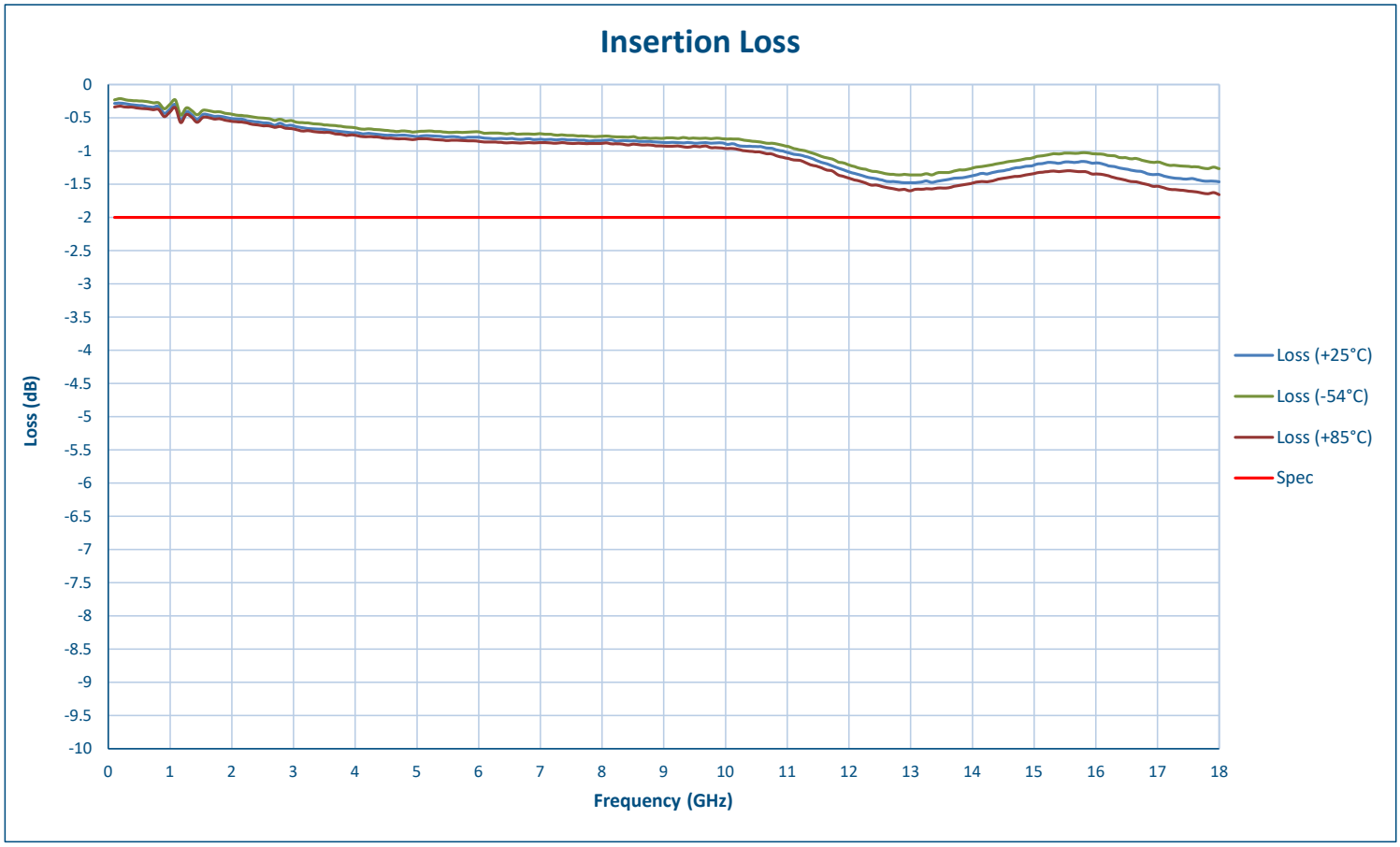
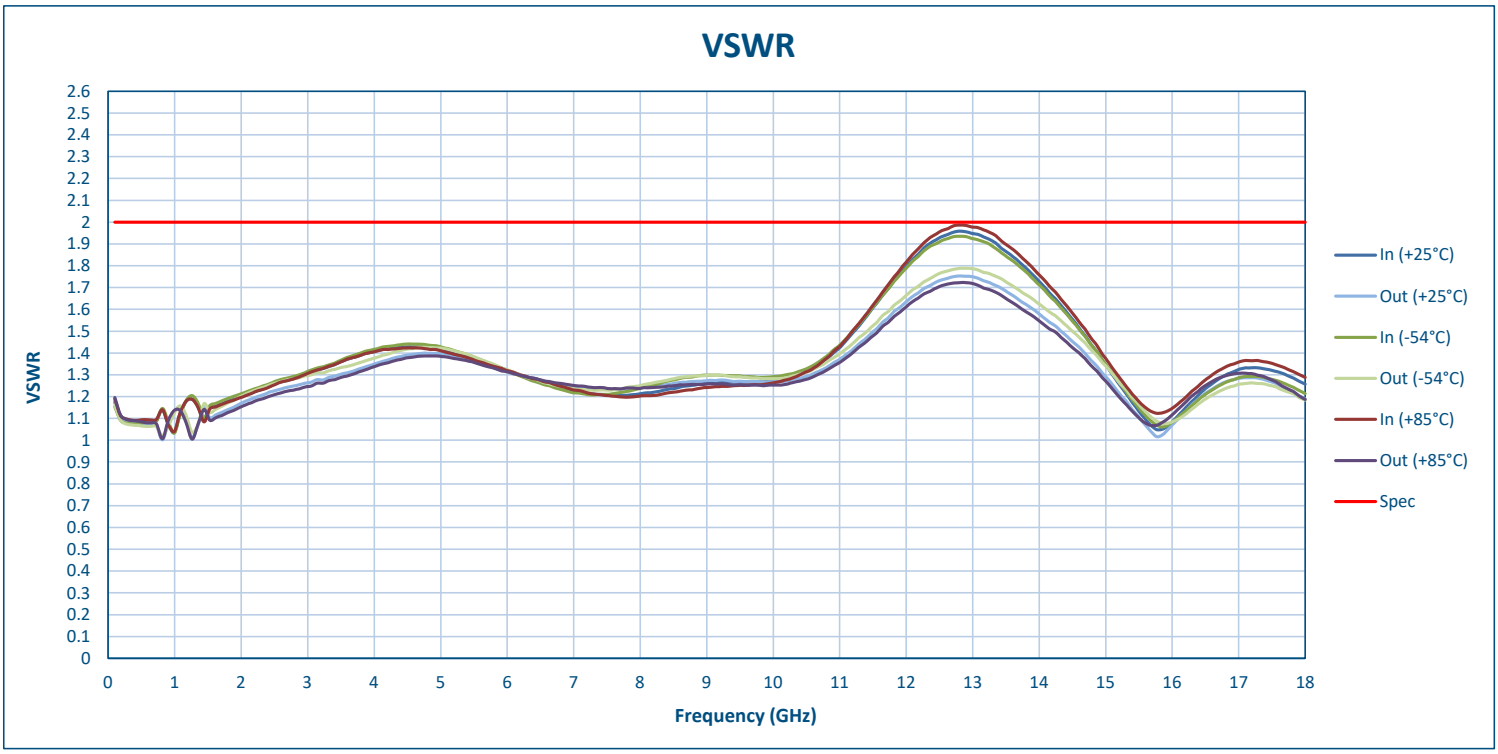
Typical Characteristics
ON
LM-0118-10-1W-SHS-2-FM





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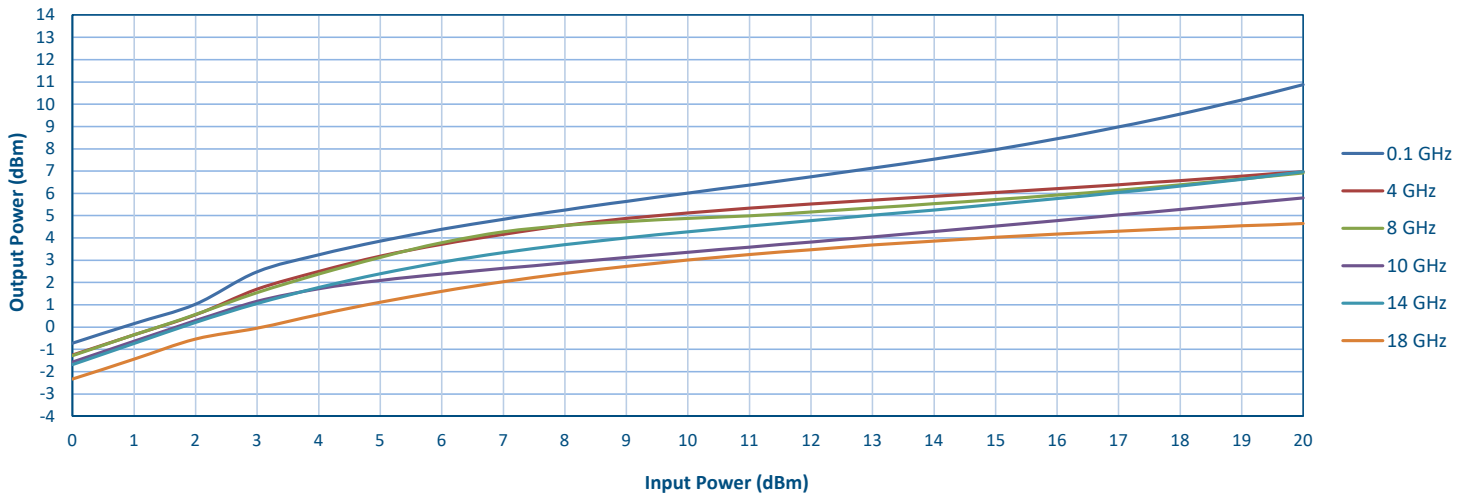
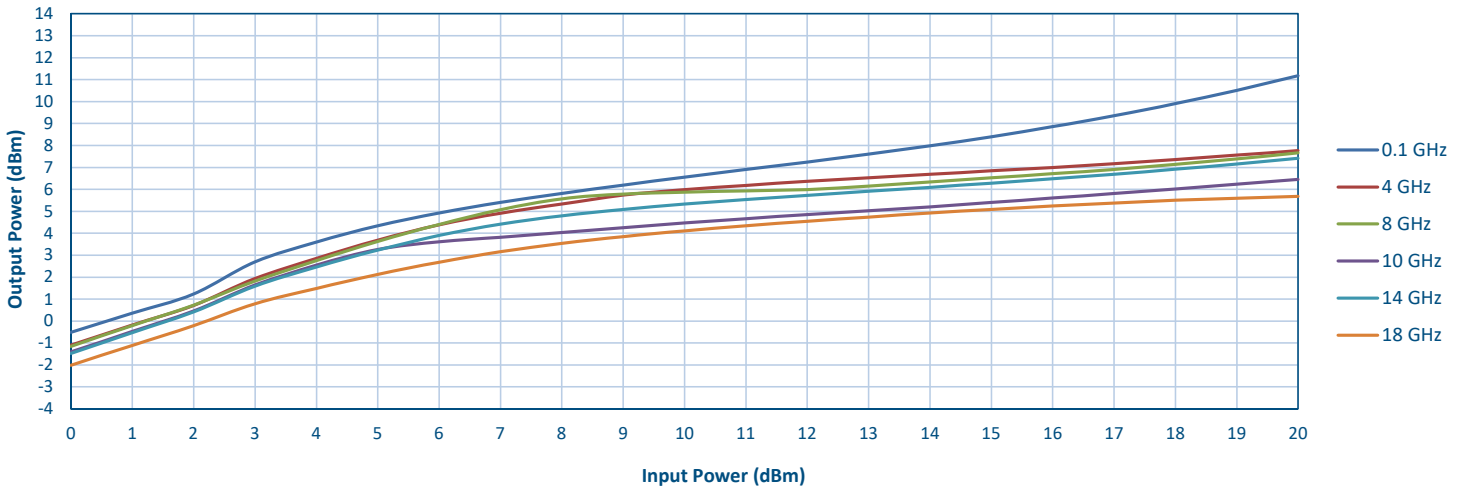
Typical Characteristics
ON
LM-0118-10-1W-SHS-2-FM

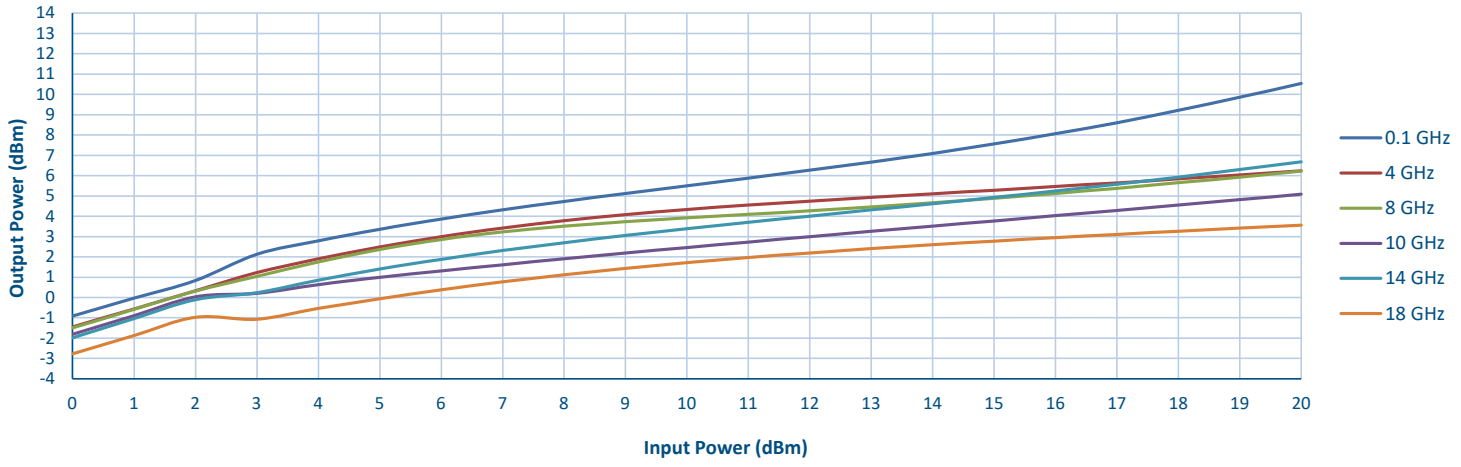
Response Limiting Curve Vs Frequency (+25°C)



Response Limiting Curve Vs Frequency (-54°C)



Response Limiting Curve Vs Frequency (+85°C)



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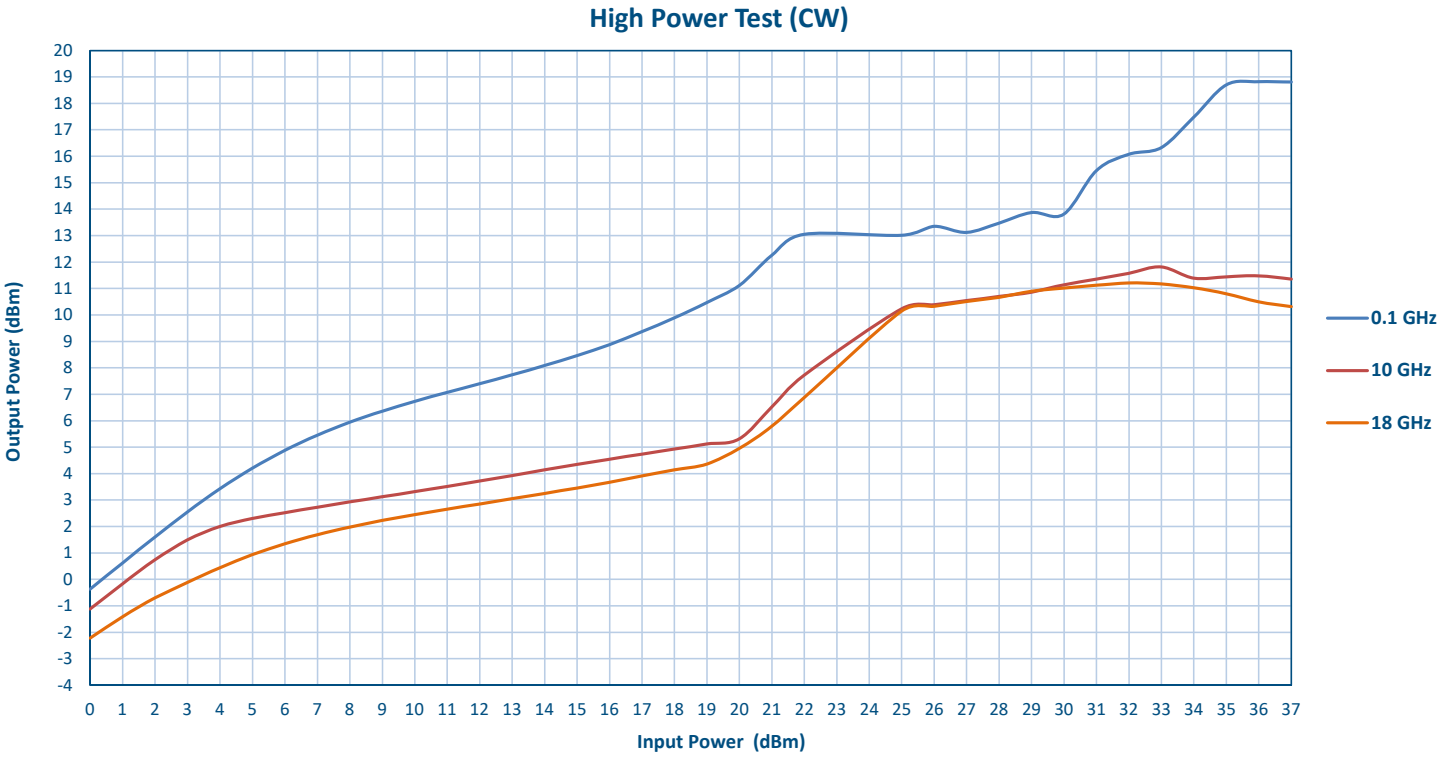
Typical Characteristics
ON
LM-0118-10-1W-SHS-2-FM



High Power Test Data

0.1 GHz					10 GHz					18 GHz				
Freq	Input Power (dBm)	Output Power (dBm)	Loss		Freq	Input Power (dBm)	Output Power (dBm)	Loss		Freq	Input Power (dBm)	Output Power (dBm)	Loss	
0.1	0	-0.36	0.36		10	0	-1.12	1.12		18	0	-2.22	2.22	
0.1	1	0.63	0.37		10	1	-0.16	1.16		18	1	-1.41	2.41	
0.1	2	1.61	0.39		10	2	0.75	1.25		18	2	-0.70	2.70	
0.1	3	2.55	0.45		10	3	1.49	1.51		18	3	-0.11	3.11	P1dB
0.1	4	3.43	0.57		10	4	2.00	2.00	P1dB	18	4	0.45	3.55	
0.1	5	4.21	0.79		10	5	2.31	2.69		18	5	0.94	4.06	
0.1	6	4.88	1.12	P1dB	10	6	2.53	3.47		18	6	1.35	4.65	
0.1	7	5.46	1.54		10	7	2.73	4.27		18	7	1.69	5.31	
0.1	8	5.95	2.05		10	8	2.93	5.07		18	8	1.98	6.02	
0.1	9	6.36	2.64		10	9	3.13	5.87		18	9	2.23	6.77	
0.1	10	6.73	3.27		10	10	3.32	6.68		18	10	2.45	7.55	
0.1	11	7.07	3.93		10	11	3.52	7.48		18	11	2.66	8.34	
0.1	12	7.40	4.60		10	12	3.72	8.28		18	12	2.86	9.14	
0.1	13	7.74	5.26		10	13	3.93	9.07		18	13	3.05	9.95	
0.1	14	8.09	5.91		10	14	4.15	9.86		18	14	3.26	10.75	
0.1	15	8.47	6.53		10	15	4.35	10.65		18	15	3.46	11.54	
0.1	16	8.88	7.12		10	16	4.55	11.45		18	16	3.68	12.32	
0.1	17	9.37	7.63		10	17	4.74	12.26		18	17	3.91	13.09	
0.1	18	9.89	8.11		10	18	4.93	13.07		18	18	4.15	13.85	
0.1	19	10.47	8.53		10	19	5.12	13.88		18	19	4.37	14.63	
0.1	20	11.12	8.88		10	20	5.31	14.69		18	20	4.96	15.04	
0.1	21	12.26	8.75		10	21	6.52	14.48		18	21	5.79	15.21	
0.1	22	13.06	8.95		10	22	7.73	14.27		18	22	6.88	15.12	
0.1	25	13.01	11.99		10	25	10.24	14.76		18	25	10.15	14.85	
0.1	26	13.35	12.65		10	26	10.39	15.61		18	26	10.33	15.67	
0.1	27	13.12	13.88		10	27	10.54	16.46		18	27	10.51	16.49	
0.1	28	13.48	14.52		10	28	10.70	17.30		18	28	10.67	17.33	
0.1	29	13.87	15.13		10	29	10.87	18.13		18	29	10.89	18.11	
0.1	30	13.81	16.19		10	30	11.14	18.86		18	30	11.02	18.98	
0.1	31	15.46	15.54		10	31	11.36	19.65		18	31	11.12	19.88	
0.1	32	16.08	15.92		10	32	11.58	20.42		18	32	11.21	20.79	
0.1	33	16.33	16.67		10	33	11.82	21.19		18	33	11.17	21.83	
0.1	34	17.48	16.53		10	34	11.39	22.61		18	34	11.03	22.97	
0.1	35	18.70	16.30		10	35	11.44	23.56		18	35	10.80	24.20	
0.1	36	18.82	17.19		10	36	11.48	24.52		18	36	10.50	25.50	
0.1	**37**	**18.81**	**18.19**		**10**	**37**	**11.36**	**25.64**		**18**	**37**	**10.31**	**26.69**	

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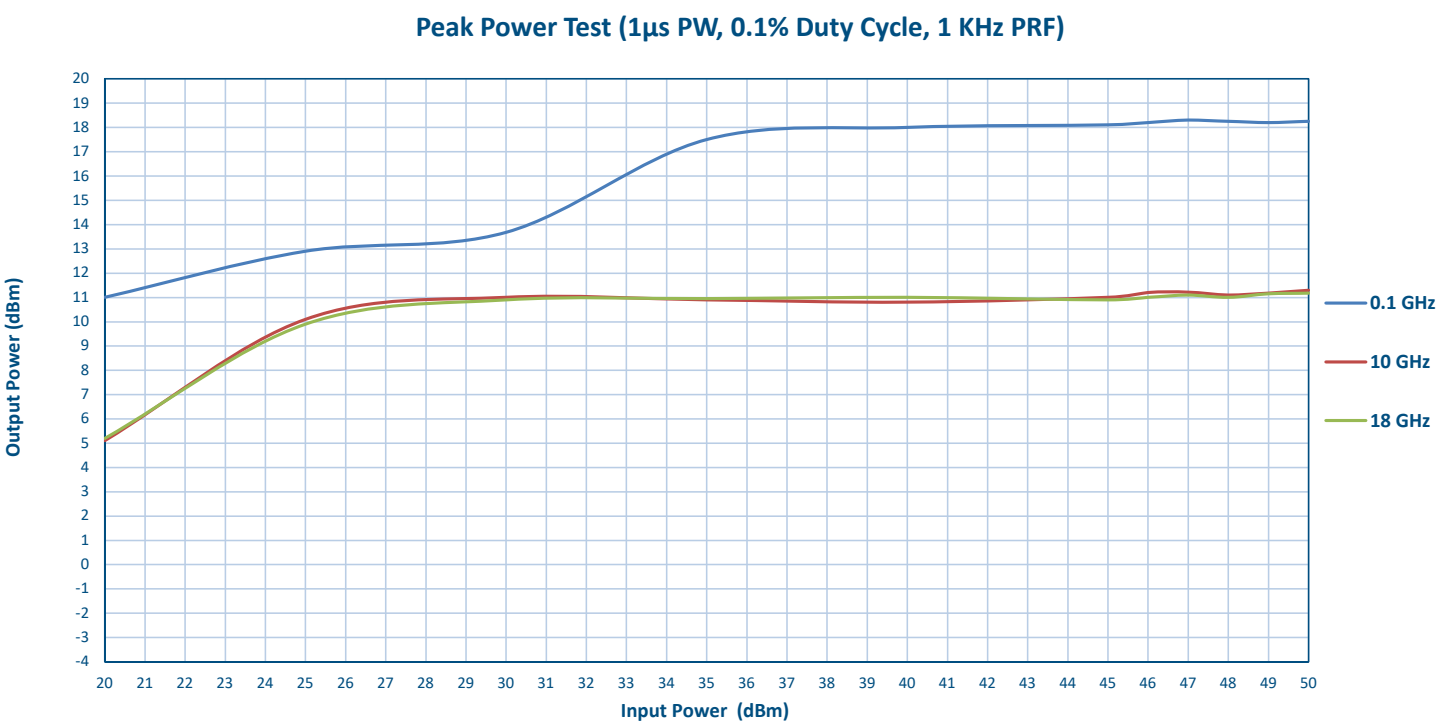

Peak Power test Data

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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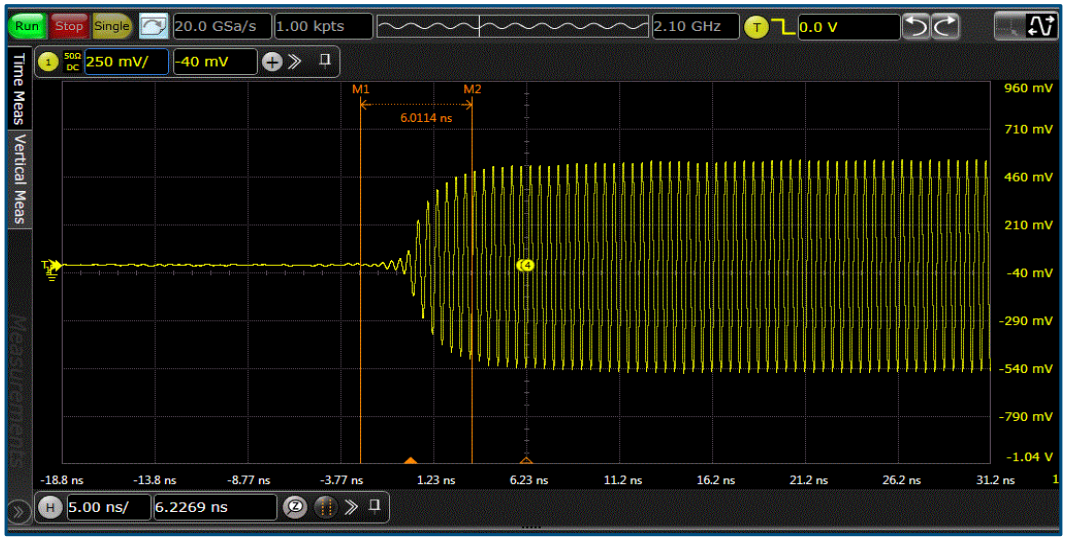
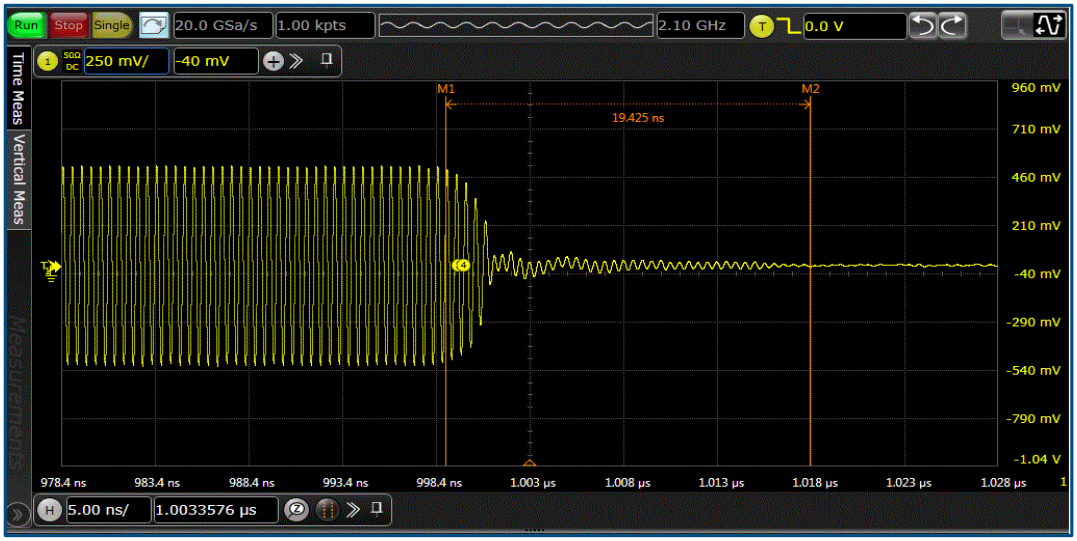
Rise Time
5 ns Per Div
Measured value - 6.0 ns

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



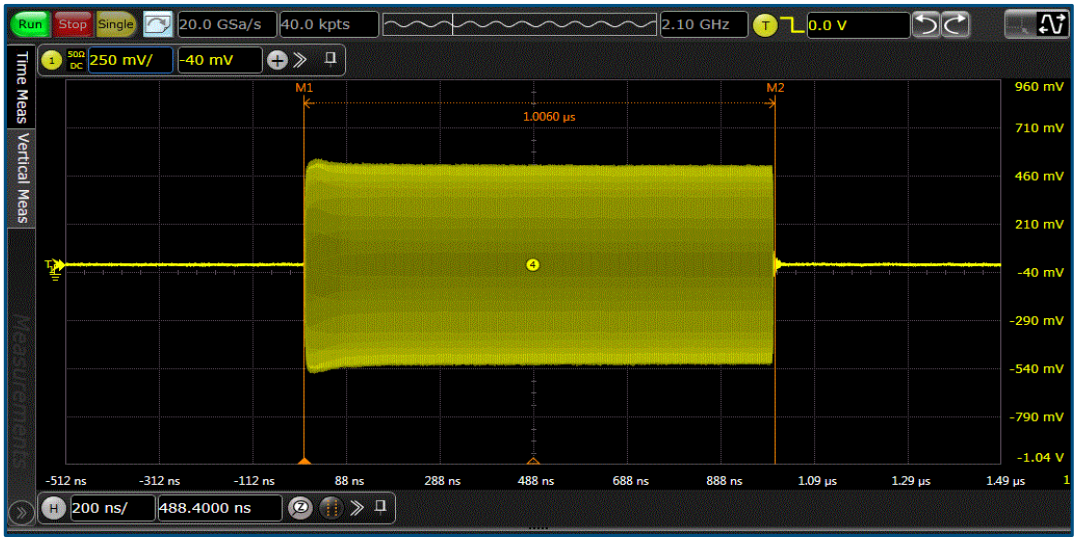
Recovery Time
5 ns Per Div
Measured value - 19.42 ns

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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