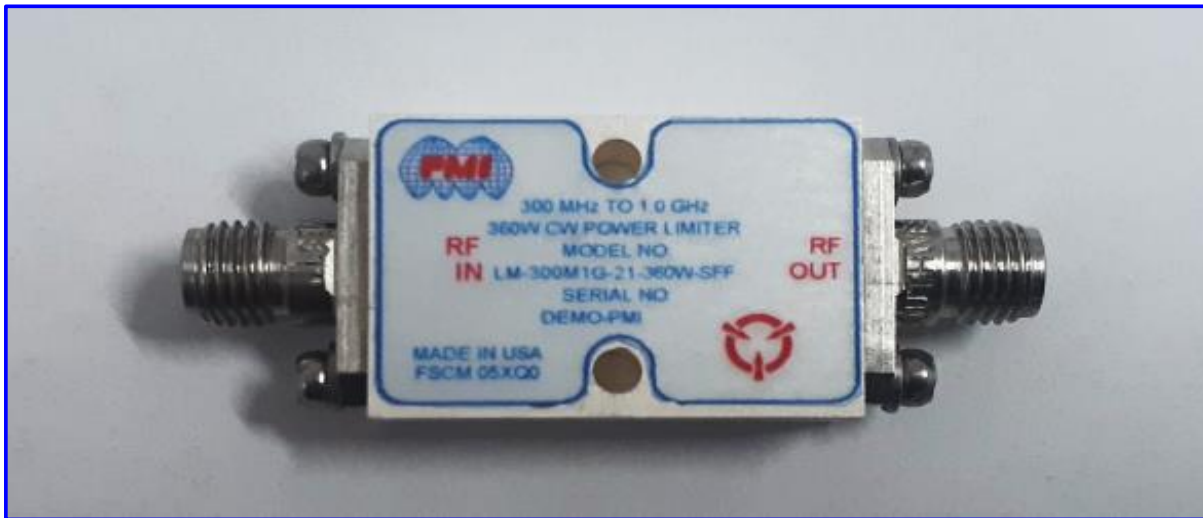




Typical Characteristics ON LM-300M1G-21-360W-SFF

PMI MODEL: LM-300M1G-21-360W-SFF IS A HIGH POWER LIMITER OPERATING IN THE FREQUENCY RANGE 300 MHz TO 1.0 GHz, WITH 250W OF CW POWER HANDLING (+54 dBm). AND 360W PEAK, THIS COMPACT HOUSING IS FITTED WITH SMA FEMALE CONNECTORS.



March 17, 2020

Designed By: Engineering PMI

Tested and Reported By:
Alfredo Lopez



Typical Characteristics ON LM-300M1G-21-360W-SFF

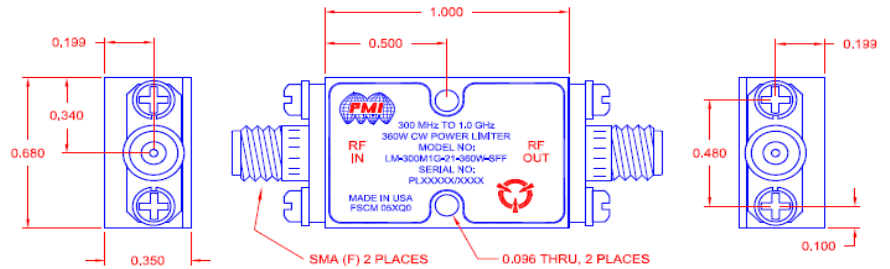
Outline Drawing

DESCRIPTION

PMI MODEL: LM-300M1G-21-360W-SFF IS A HIGH POWER LIMITER OPERATING IN THE FREQUENCY RANGE 300 MHz TO 1.0 GHz, WITH 250W OF CW POWER HANDLING (+54 dBm), AND 360W PEAK. THIS COMPACT HOUSING IS FITTED WITH SMA FEMALE CONNECTORS.

SPECIFICATIONS

- | | |
|---|---|
| <ul style="list-style-type: none"> • FREQUENCY RANGE • POWER HANDLING • VSWR (IN/OUT) • FLAT LEAKAGE POWER • RECOVERY TIME • CONNECTORS • PACKAGE SIZE • PACKAGE FINISH | <p>300 MHz to 1.0 GHz
 +54 dBm CW Max, (250Watts),
 Peak Power 360W, Pulse 2ms, 10% Duty Cycle</p> <p>2:1 Max,
 +21 dBm Typ.
 1 μs Max,
 SMA FEMALE
 1.00" x 0.68" x 0.35"
 BLUE PAINT</p> |
|---|---|



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	03/10/20	

ENVIRONMENTAL RATINGS

- TEMPERATURE: _____ -40 °C TO +85 °C (OPERATING)
 -55 °C TO +125 °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

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



PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS		DATE	TITLE		
DRAWN NJA		3/10/20	PRODUCT FEATURE		
CHECKED			LM-300M1G-21-360W-SFF		
ISSUED			300 MHz to 1.0 GHz 360W CW Power Limiter		
REV.	FROM NO.	DWG NO.	REV.		
A	05XQ0	27034606	A1		
SCALE N:S			SHEET		1 OF 1



Typical Characteristics ON LM-300M1G-21-360W-SFF

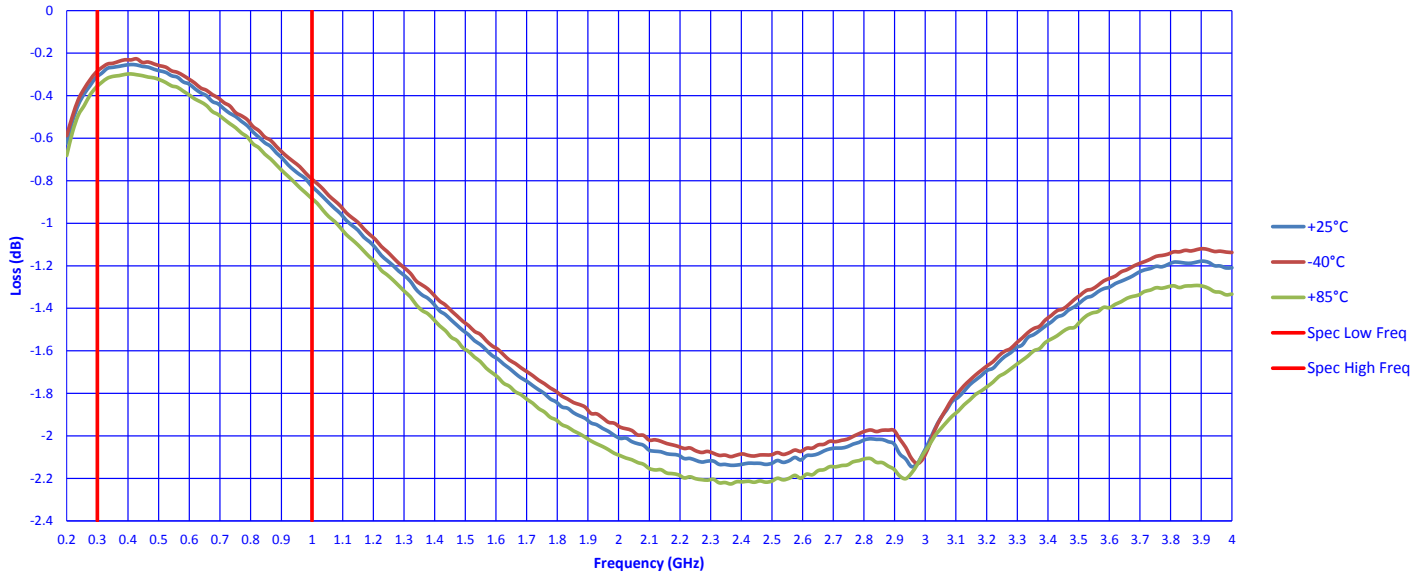
Technical Specifications

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	Test Results			QA QC
			+25°C	-40°C	+85°C	
1	Frequency Range:	300 MHz to 1 GHz	Spec 300 MHz to 1 GHz Test 200 MHz to 4 GHz	Spec 300 MHz to 1 GHz Test 200 MHz to 4 GHz	Spec 300 MHz to 1 GHz Test 200 MHz to 4 GHz	
2	Power Handling	+54 dBm CW Max. (250Watts), Peak Power 360W, Pulse 2ms, 10% Duty Cycle	250 Watts (300 MHz to 1GHz) Pass By Design	250 Watts (300 MHz to 1GHz) Pass By Design	250 Watts (300 MHz to 1GHz) Pass By Design	
			125 Watts (200 MHz to 4GHz) Pass See Graph	125 Watts (200 MHz to 4GHz) Pass See Graph	125 Watts (200 MHz to 4GHz) Pass See Graph	
3	Insertion Loss	1 dB Max.	0.85 dB = 300MHz to 1 GHz 2.14 dB = 200 MHz to 4 GHz See Graphs	0.81 dB = 300 MHz to 1 GHz 2.13 dB = 200 MHz to 4 GHz See Graphs	0.81 dB = 300 MHz to 1 GHz 2.23 dB = 200 MHz to 4 GHz See Graphs	
4	VSWR (in/out)	2:1 Max.	1.86 :1 = 300 MHz to 1 GHz 3.09 :1 = 200 MHz to 4 GHz See Graphs	1.86 :1 = 300 MHz to 1 GHz 3.09 :1 = 200 MHz to 4 GHz See Graphs	1.86 :1 = 300 MHz to 1 GHz 3.08 :1 = 200 MHz to 4 GHz See Graphs	
5	Flat Leakage Power	+21 dBm Typ.	21.4 dBm See Graphs	20.12 dBm See Graphs	19.88 dBm See Graphs	
6	Recovery Time	1 μs Max.	13.00 ns See Plot	13.00 ns See Plot	13.00 ns See Plot	

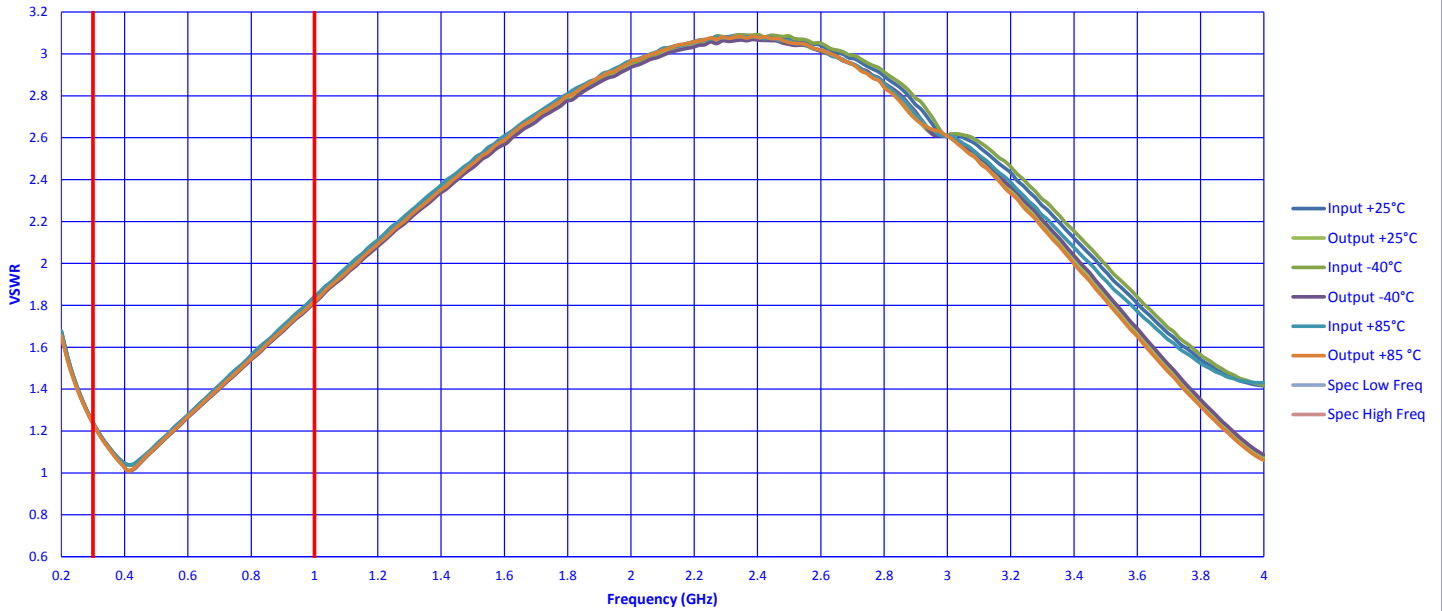


Typical Characteristics ON LM-300M1G-21-360W-SFF

Insertion Loss

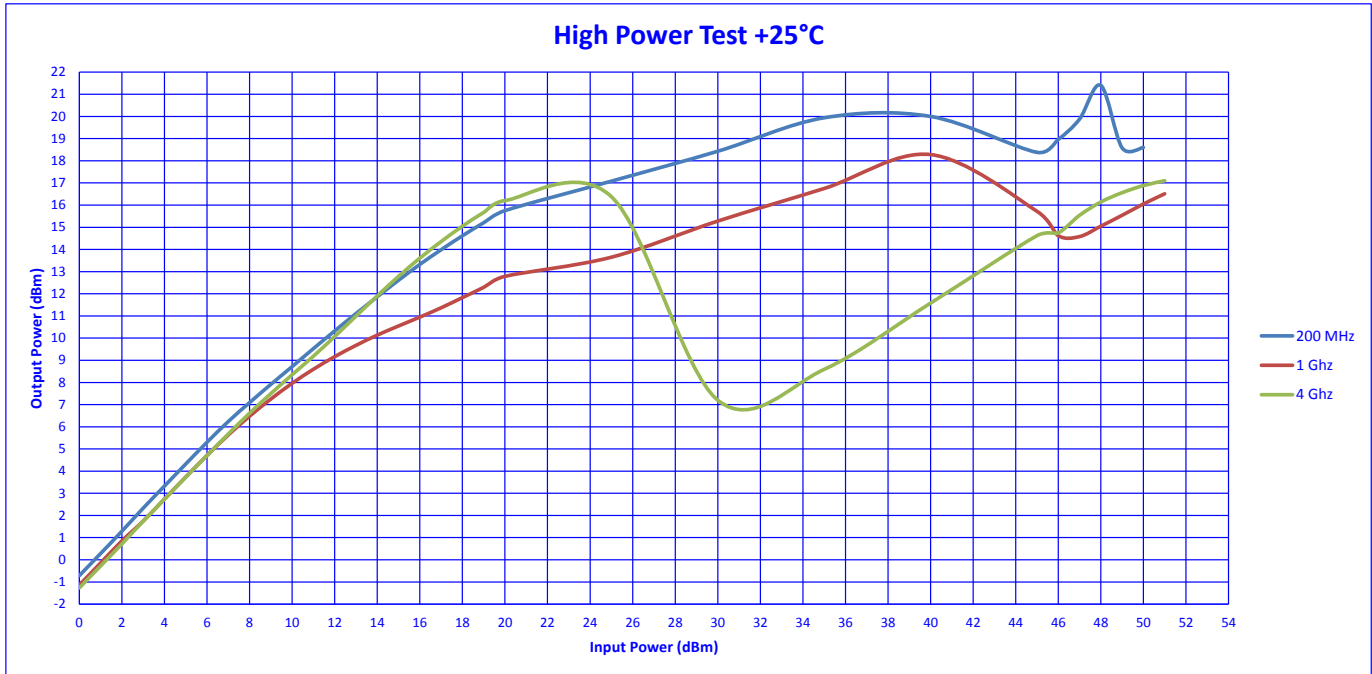


VSWR





Typical Characteristics ON LM-300M1G-21-360W-SFF

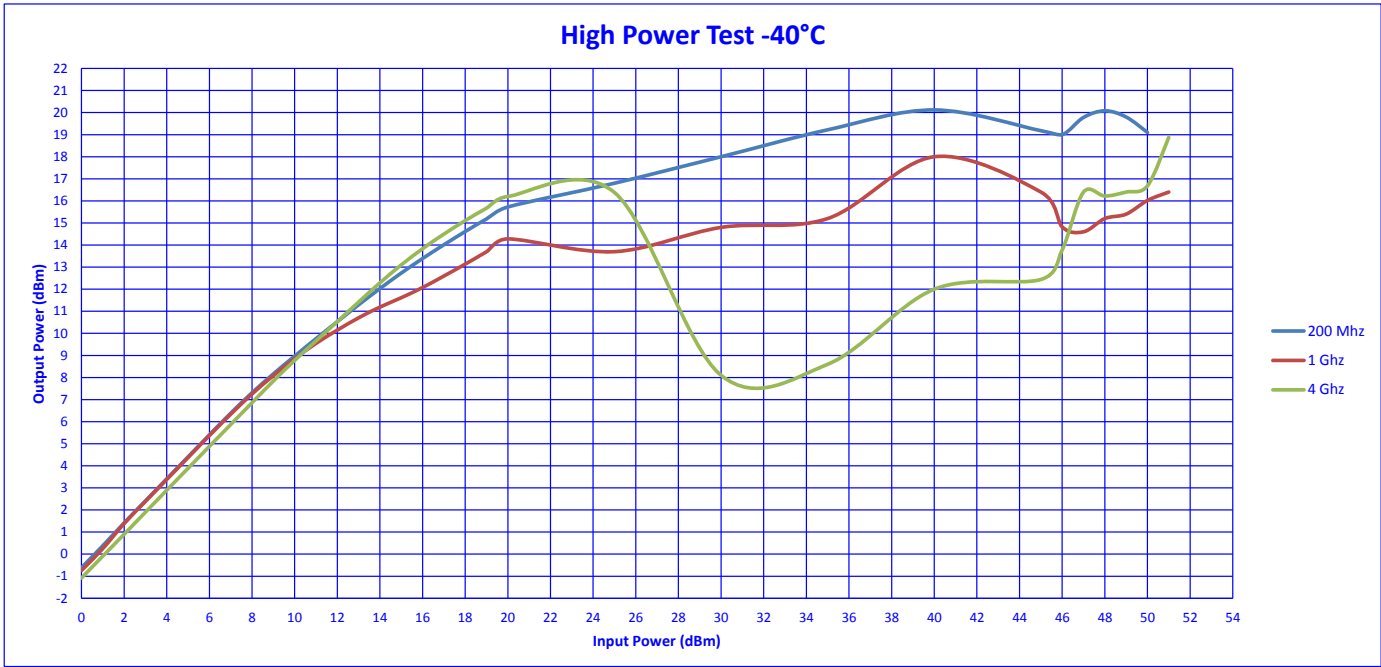


High Power Test Data								
200 MHz			1 GHz			4 GHz		
Pin	Pout	Loss	Pin	Pout	Loss	Pin	Pout	Loss
0	-0.71	0.71	0	-1.14	1.14	0	-1.27	1.27
1	0.28	0.72	1	-0.14	1.14	1	-0.28	1.28
2	1.29	0.71	2	0.86	1.14	2	0.72	1.28
3	2.33	0.67	3	1.75	1.25	3	1.74	1.26
4	3.33	0.67	4	2.74	1.26	4	2.74	1.26
5	4.32	0.68	5	3.73	1.27	5	3.72	1.28
6	5.30	0.70	6	4.71	1.29	6	4.71	1.29
7	6.24	0.76	7	5.63	1.37	7	5.68	1.32
8	7.09	0.91	8	6.48	1.52	8	6.61	1.39
9	7.92	1.08	9	7.25	1.75	9	7.50	1.50
10	8.72	1.28	10	7.96	2.04	10	8.35	1.65
11	9.53	1.47	11	8.60	2.40	11	9.19	1.81
12	10.33	1.68	12	9.16	2.84	12	10.07	1.93
13	11.11	1.89	13	9.67	3.33	13	10.99	2.01
14	11.86	2.14	14	10.14	3.86	14	11.90	2.10
15	12.61	2.39	15	10.55	4.45	15	12.79	2.21
16	13.32	2.68	16	10.95	5.05	16	13.61	2.39
17	13.99	3.01	17	11.37	5.63	17	14.36	2.65
18	14.62	3.39	18	11.83	6.17	18	15.05	2.95
19	15.20	3.80	19	12.29	6.71	19	15.67	3.33
20	15.75	4.25	20	12.79	7.21	20	16.21	3.80
25	17.08	7.92	25	13.65	11.35	25	16.38	8.62
30	18.43	11.57	30	15.28	14.72	30	17.20	22.80
35	19.94	15.06	35	16.75	18.25	35	18.59	26.41
40	20.00	20.00	40	18.28	21.72	40	19.58	28.42
45	18.38	26.62	45	15.72	29.28	45	14.62	30.38
46	18.96	27.04	46	14.62	31.38	46	14.75	31.25
47	19.88	27.12	47	14.58	32.42	47	15.54	31.46
48	21.40	26.60	48	15.05	32.95	48	16.14	31.86
49	18.58	30.42	49	15.54	33.46	49	16.56	32.44
50	18.60	31.40	50	16.05	33.95	50	16.88	33.12
51			51	16.51	34.49	51	17.10	33.90

125 Watts



Typical Characteristics ON LM-300M1G-21-360W-SFF

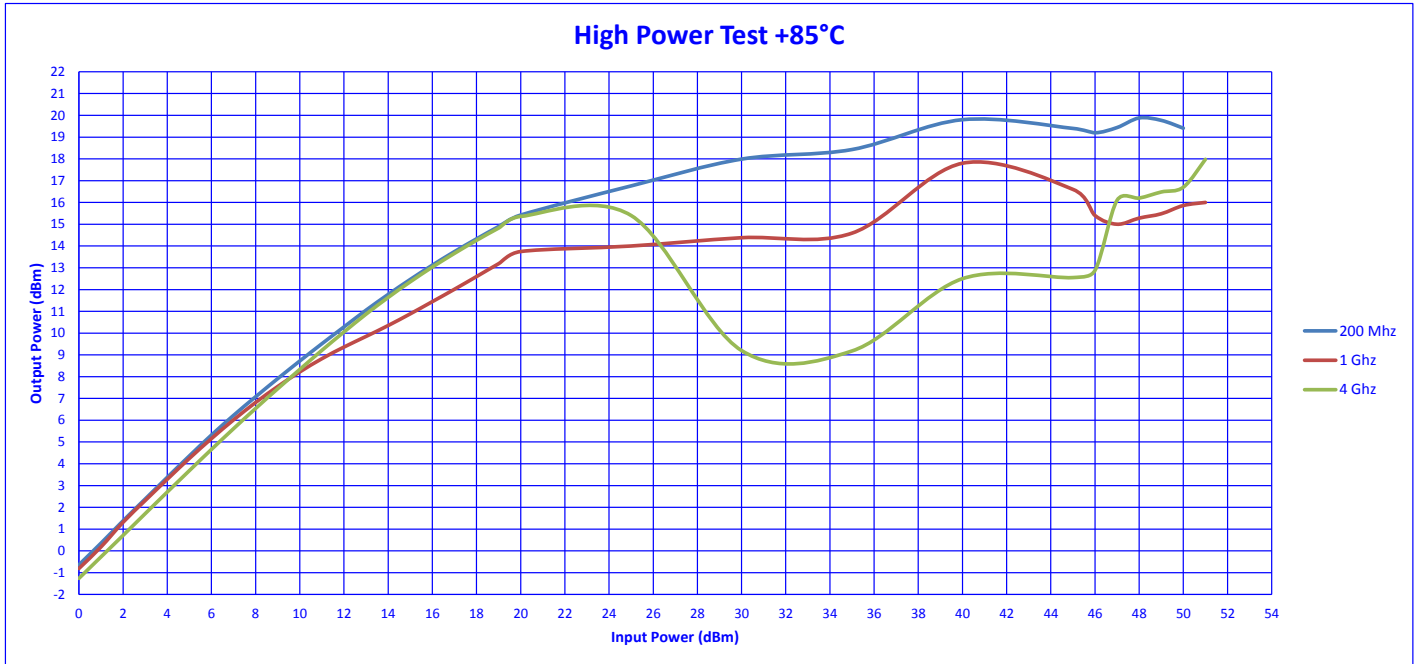


High Power Test Data								
200 MHz			1 GHz			4 GHz		
Pin	Pout	Loss	Pin	Pout	Loss	Pin	Pout	Loss
0	-0.62	0.62	0	-0.74	0.74	0	-1.08	1.08
1	0.38	0.62	1	0.25	0.75	1	-0.09	1.09
2	1.41	0.59	2	1.38	0.62	2	0.90	1.10
3	2.41	0.59	3	2.39	0.61	3	1.90	1.10
4	3.41	0.59	4	3.38	0.62	4	2.89	1.11
5	4.41	0.59	5	4.38	0.62	5	3.89	1.11
6	5.40	0.60	6	5.37	0.63	6	4.88	1.12
7	6.38	0.62	7	6.34	0.66	7	5.87	1.13
8	7.31	0.69	8	7.25	0.75	8	6.86	1.14
9	8.16	0.84	9	8.08	0.92	9	7.84	1.16
10	8.97	1.03	10	8.85	1.15	10	8.78	1.22
11	9.76	1.24	11	9.54	1.46	11	9.66	1.34
12	10.53	1.47	12	10.15	1.85	12	10.54	1.47
13	11.29	1.71	13	10.70	2.30	13	11.42	1.58
14	12.03	1.97	14	11.19	2.81	14	12.29	1.71
15	12.73	2.27	15	11.61	3.39	15	13.10	1.90
16	13.39	2.61	16	12.08	3.92	16	13.83	2.17
17	14.01	2.99	17	12.60	4.40	17	14.50	2.50
18	14.61	3.39	18	13.14	4.86	18	15.11	2.89
19	15.18	3.82	19	13.70	5.30	19	15.67	3.33
20	15.73	4.28	20	14.28	5.72	20	16.20	3.80
25	16.80	8.20	25	13.70	11.30	25	16.38	8.62
30	18.00	12.00	30	14.80	15.20	30	8.10	21.90
35	19.22	15.78	35	15.20	19.80	35	8.60	26.40
40	20.12	19.88	40	18.00	22.00	40	12.00	28.00
45	19.18	25.82	45	16.40	28.60	45	12.44	32.56
46	19.00	27.00	46	14.82	31.18	46	13.78	32.22
47	19.78	27.22	47	14.60	32.40	47	16.40	30.60
48	20.08	27.92	48	15.20	32.80	48	16.22	31.78
49	19.80	29.20	49	15.40	33.60	49	16.40	32.60
50	19.10	30.90	50	16.02	33.98	50	16.68	33.32
51			51	16.40	34.60	51	18.88	32.12

125 Watts



Typical Characteristics ON LM-300M1G-21-360W-SFF



High Power Test Data								
200 Mhz			1 GHz			4 GHz		
Pin	Pout	Loss	Pin	Pout	Loss	Pin	Pout	Loss
0	-0.64	0.64	0	-0.81	0.81	0	-1.26	1.26
1	0.35	0.65	1	0.18	0.82	1	-0.27	1.27
2	1.38	0.62	2	1.32	0.68	2	0.71	1.29
3	2.38	0.62	3	2.31	0.69	3	1.71	1.29
4	3.38	0.62	4	3.29	0.71	4	2.70	1.30
5	4.36	0.64	5	4.24	0.76	5	3.69	1.32
6	5.32	0.68	6	5.16	0.84	6	4.66	1.34
7	6.22	0.78	7	6.01	0.99	7	5.61	1.39
8	7.08	0.92	8	6.81	1.19	8	6.54	1.46
9	7.91	1.09	9	7.55	1.45	9	7.45	1.55
10	8.72	1.28	10	8.22	1.78	10	8.33	1.67
11	9.51	1.49	11	8.82	2.18	11	9.21	1.79
12	10.28	1.72	12	9.36	2.64	12	10.05	1.95
13	11.05	1.95	13	9.85	3.15	13	10.87	2.13
14	11.78	2.23	14	10.35	3.65	14	11.64	2.36
15	12.46	2.54	15	10.89	4.12	15	12.36	2.64
16	13.12	2.88	16	11.45	4.56	16	13.03	2.97
17	13.74	3.26	17	12.01	4.99	17	13.66	3.34
18	14.33	3.67	18	12.60	5.40	18	14.26	3.74
19	14.89	4.11	19	13.19	5.81	19	14.82	4.18
20	15.42	4.58	20	13.75	6.25	20	15.36	4.64
25	16.76	8.24	25	14.00	11.00	25	15.40	9.60
30	17.99	12.01	30	14.38	15.62	30	9.20	20.80
35	18.43	16.57	35	14.59	20.41	35	9.18	25.82
40	19.80	20.20	40	17.80	22.20	40	12.50	27.50
45	19.40	25.60	45	16.60	28.40	45	12.55	32.45
46	19.20	26.80	46	15.40	30.60	46	12.88	33.12
47	19.44	27.56	47	15.00	32.00	47	16.10	30.90
48	19.88	28.12	48	15.28	32.72	48	16.20	31.80
49	19.77	29.23	49	15.48	33.52	49	16.48	32.52
50	19.41	30.59	50	15.86	34.14	50	16.70	33.30
51			51	16.00	35.00	51	17.98	33.02

125 Watts



Typical Characteristics ON LM-300M1G-21-360W-SFF

Frequency 1GHz, Input Power +20dBm (0.1 Watt)
Input Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)
Rise Time Measured Value = 4.35ns



Frequency 1GHz, Input Power +20dBm (0.1 Watt)
Input Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)
Recovery (12ns), Fall Time 7.26ns



Green Signal = Video Output (Internal Signal Gen)
Yellow Signal = Video Output (Crystal Detector)



Typical Characteristics ON LM-300M1G-21-360W-SFF

Frequency 1GHz, Input Power +20dBm (0.1 Watt)
Full Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)



Green Signal = Video Output (Internal Signal Gen)
Yellow Signal = Video Output (Crystal Detector)



Typical Characteristics ON LM-300M1G-21-360W-SFF

Frequency 1GHz, Input Power +30dBm (1 Watt)
Input Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)
Rise Time Measured Value = 5.09ns



Frequency 1GHz, Input Power +30dBm (1 Watt)
Input Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)
Recovery (13ns), Fall Time 9.34ns



Green Signal = Video Output (Internal Signal Gen)
Yellow Signal = Video Output (Crystal Detector)



Typical Characteristics ON LM-300M1G-21-360W-SFF

Frequency 1GHz, Input Power +30dBm (1 Watt)
Full Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)

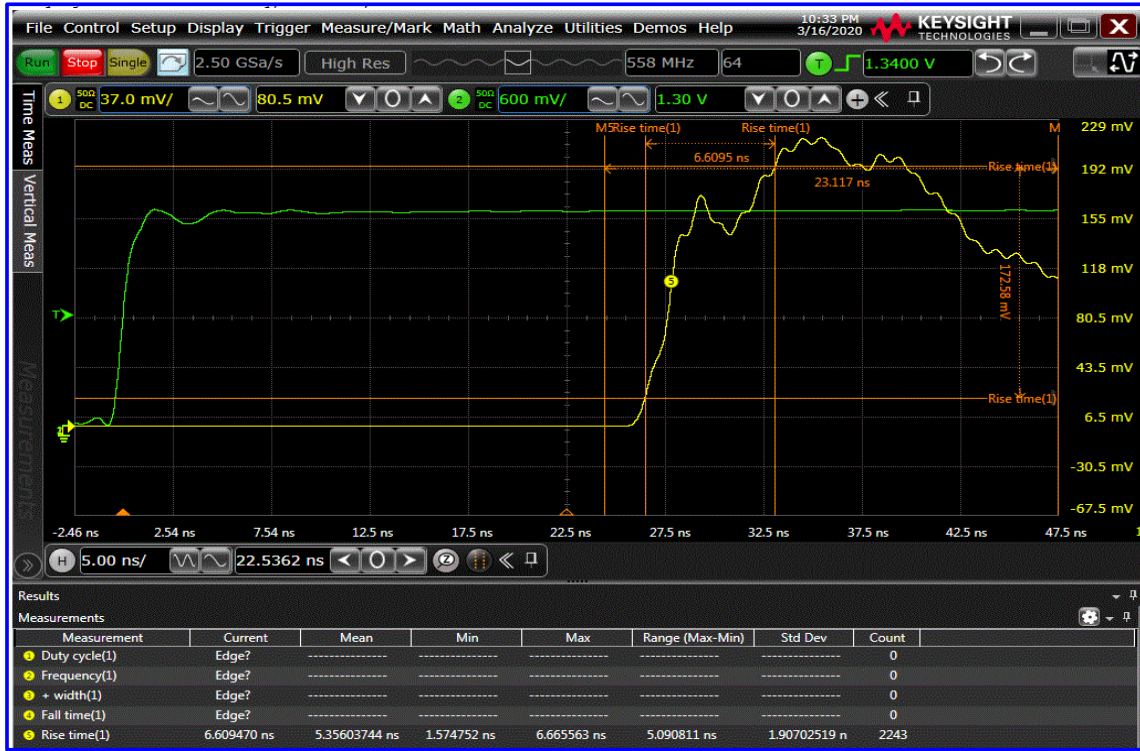


Green Signal = Video Output (Internal Signal Gen)
Yellow Signal = Video Output (Crystal Detector)



Typical Characteristics ON LM-300M1G-21-360W-SFF

Frequency 1GHz, Input Power +40dBm (10 Watt)
Input Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)
Rise Time Measured Value = 6.66ns



Frequency 1GHz, Input Power +40dBm (10 Watt)
Input Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)
Recovery (8.0ns), Fall Time 2.65ns



Green Signal = Video Output (Internal Signal Gen)
Yellow Signal = Video Output (Crystal Detector)



Typical Characteristics ON LM-300M1G-21-360W-SFF

Frequency 1GHz, Input Power +40dBm (10 Watt)
Full Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)



Green Signal = Video Output (Internal Signal Gen)
Yellow Signal = Video Output (Crystal Detector)



Typical Characteristics ON LM-300M1G-21-360W-SFF

Frequency 1GHz, Input Power +50dBm (100 Watt)
Input Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)
Rise Time Measured Value = 6.40ns



Frequency 1GHz, Input Power +50dBm (100 Watt)
Input Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)
Recovery (7.56ns), Fall Time 3.73ns



Green Signal = Video Output (Internal Signal Gen)
Yellow Signal = Video Output (Crystal Detector)



Typical Characteristics ON LM-300M1G-21-360W-SFF

Frequency 1GHz, Input Power +50dBm (100 Watt)
Full Pulse (Pw 1ms, Duty Cycle 10%, Pulse Rate 100Hz)



Green Signal = Video Output (Internal Signal Gen)
Yellow Signal = Video Output (Crystal Detector)