TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

PMI MODEL LM-20M15G-100W-15DBM-ROHS IS AN RF LIMITER THAT OPERATES IN THE RANGE OF FREQUENCIES FROM 20.0 MHz TO 15.0 GHz. THIS LIMITER CAN HANDLE UP TO 100 W. FOR ALL TEMPERATURES (-55°C TO +85°C), THE ENERGY INPUT HAS A LEAKAGE OF LESS THAN 15 dBm MAX. THIS MODEL HAS A LOW INSERTION LOSS OF 1.8 dB AND A TYPICAL RECOVERY TIME OF 100 ns.

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TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

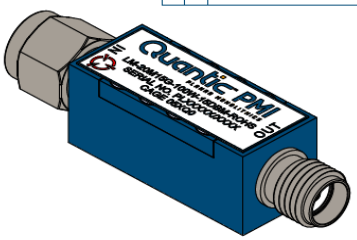
OUTLINE DRAWING

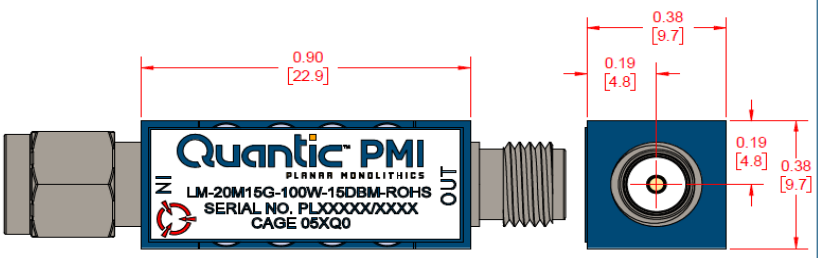
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	6/19/2025	

DESCRIPTION:
PMI MODEL LM-20M15G-100W-15DBM-ROHS IS AN RF LIMITER THAT OPERATES IN THE RANGE OF FREQUENCIES FROM 20.0 MHz TO 15.0 GHz. THIS LIMITER CAN HANDLE UP TO 100W. FOR ALL TEMPERATURES (-55°C TO 85°C), THE ENERGY INPUT HAS A LEAKAGE OF LESS THAN 15 dBm MAX. THIS MODEL HAS A LOW INSERTION LOSS OF 1.80 dB AND A TYPICAL RECOVERY TIME OF 100 ns.

SPECIFICATIONS:

- FREQUENCY RANGE:..... 20.0 MHz TO 15.0 GHz
- RF POWER HANDLING:..... 100W CW MAX @ -55°C TO +85°C
  1 kW PEAK MAX @ +85°C (1 µs PULSE WIDTH, 0.1% DUTY CYCLE)
  100 W (1 µs PULSE WIDTH, 1% DUTY CYCLE, 10 kHz)
  100 W (10 µs PULSE WIDTH, 0.1% DUTY CYCLE, 100 Hz)
  100 W (1 µs PULSE WIDTH, 0.1% DUTY CYCLE, 1 kHz)
  100 W (40 µs PULSE WIDTH, 10 % DUTY CYCLE, 2.5 kHz)
- INSERTION LOSS:..... 1.80 dB MAX @ -10 dBm INPUT POWER
- RECOVERY TIME:..... 100 ns MAX @ 1 kW PEAK POWER
- LEAKAGE POWER:..... +15 dBm MAX AT 100W CW
- VSWR:..... 2.0:1 MAX @ -10 dBm INPUT POWER
- LIMITING THRESHOLD (P1dB):..... +5 dBm MIN (1 dB COMPRESSION)
- CONNECTORS:..... INPUT: SMA MALE
  OUTPUT: SMA FEMALE
- WEIGHT:..... 0.705 oz [20g] MAX
- SIZE:..... (L) 0.90" X (W) 0.38" X (H) 0.38" MAX
  [(L) 22.9mm X (W) 9.7mm X (H) 9.7mm MAX]
  EXCLUDING CONNECTORS
- FINISH:..... PAINTED BLUE





ENVIRONMENTAL RATINGS:
IAW MIL-E-5400, CLASS 2 EQUIPMENT

- 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)
- SHOCK:..... 20g, 11 ± 1 ms
- HUMIDITY:..... 100%
- ALTITUDE:..... 70,000 FT

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

PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS	DATE
DRAWN: V. PRATAP	6/19/2025
REDRAWN	
ISSUED	

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

TITLE: OUTLINE
LM-20M15G-100W-15DBM-ROHS

SIZE	FSCM NO.	DWG NO.	REV.
B	05XQ0	27052300	A1

SCALE 4:1 SHEET 1 OF 1

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TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

TEST DATA

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	Test Results		
			-55°C	+25°C	+85°C
1	Frequency Range:	20 MHz to 15 GHz	**20 MHz to 15 GHz**		
2	Insertion Loss:	1.8 dB Max @-10dBm Input Power	**1.32 dB (See Graph)**	**1.54 dB (See Graph)**	**1.79 dB (See Graph)**
3	VSWR:	2.0:1 Max. @ -10 dBm Input Power	**1.89:1 In 1.72:1 Out (See Graph)**	**1.9:1 In 1.72:1 Out (See Graph)**	**1.9:1 In 1.71:1 Out (See Graph)**
4	RF Power Handling:	100W CW Max. @ -55C TO +85C 1kW Peak (1µs Max. PW, 0.1% Duty Cycle) 100W (1µs,1% Duty Cycle, 10KHz) 100W (10µs, 0.1% Duty Cycle, 100Hz) 100W (1µs, 0.1% Duty Cycle, 1KHz) 100W (40µs, 10% Duty Cycle, 2.5KHz)	**Pass (See Graphs)**		
5	Leakage Power:	+15 dBm Max. Max. @100W CW	**Pass (See Graphs)**		
6	Limiting Threshold: P1dB:	+5 dBm Min.	**+ 5 dBm (See Graph)**	**+ 6 dBm (See Graph)**	**+ 5 dBm (See Graph)**
7	Recovery Time:	100 ns Max. @ 1kW Peak Power	**Pass (See Graphs)**		

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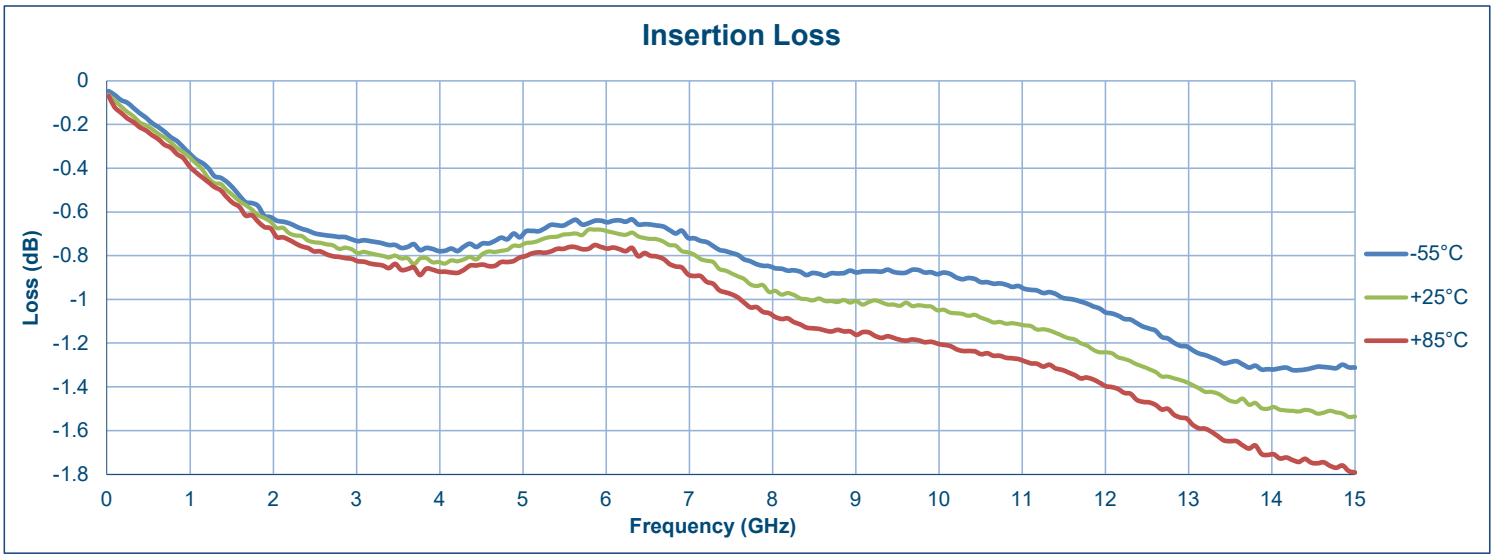

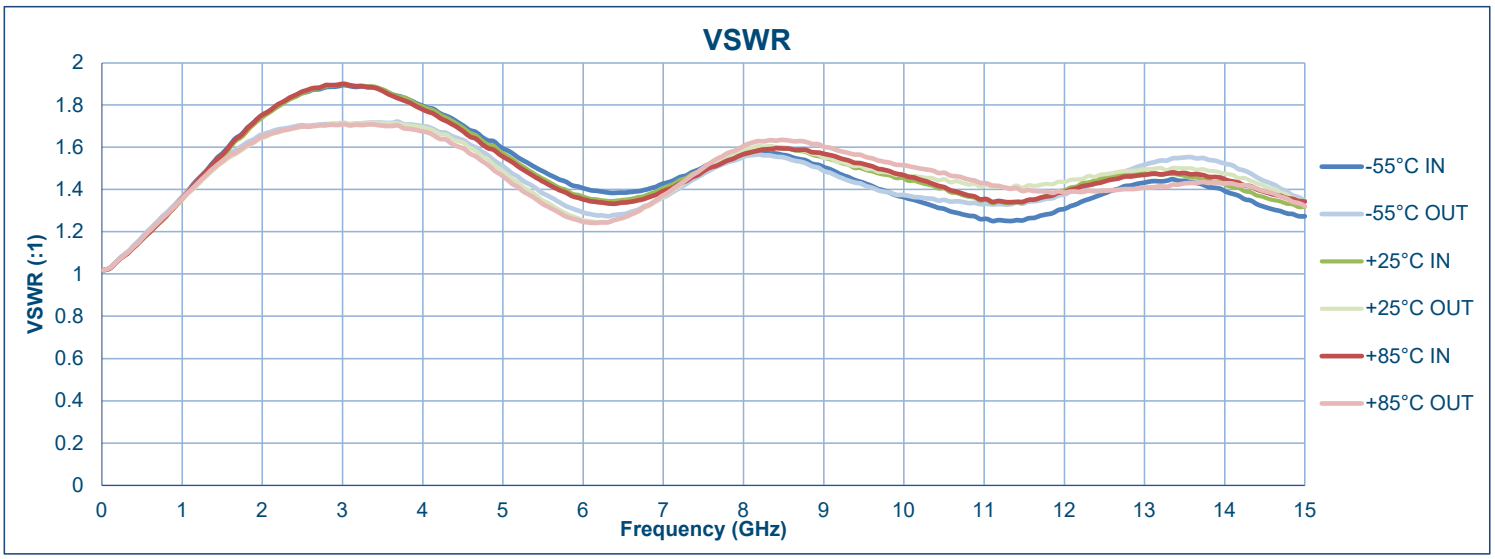

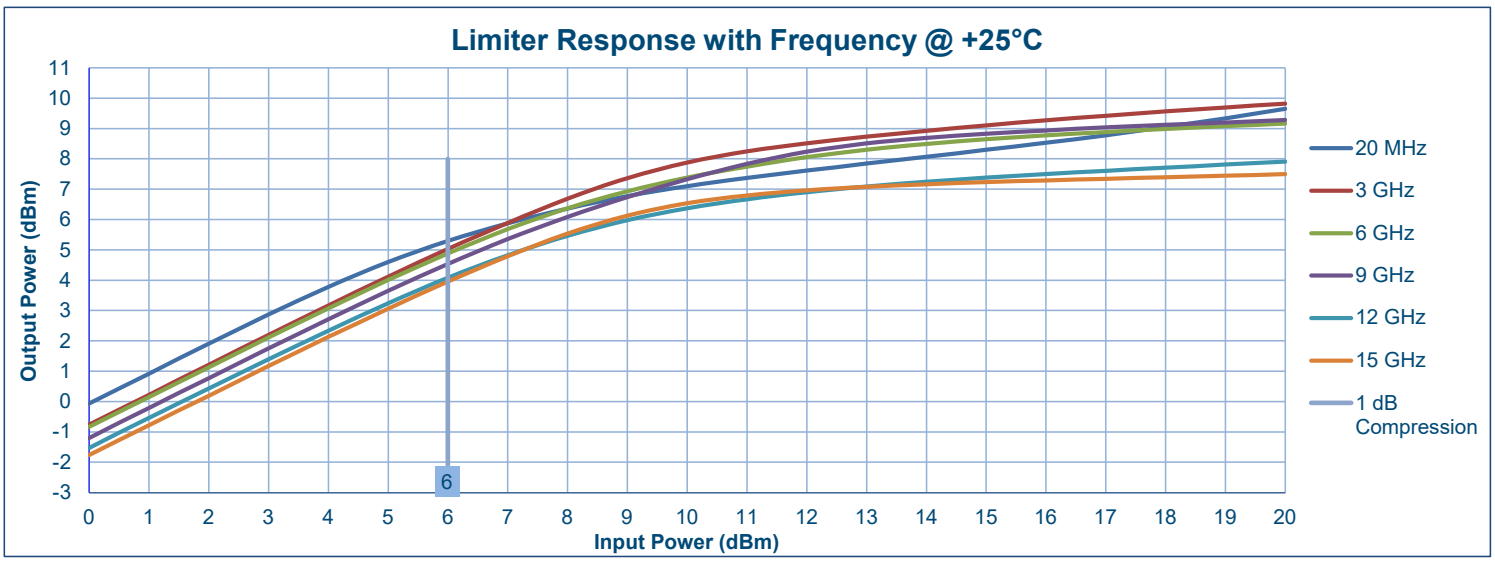

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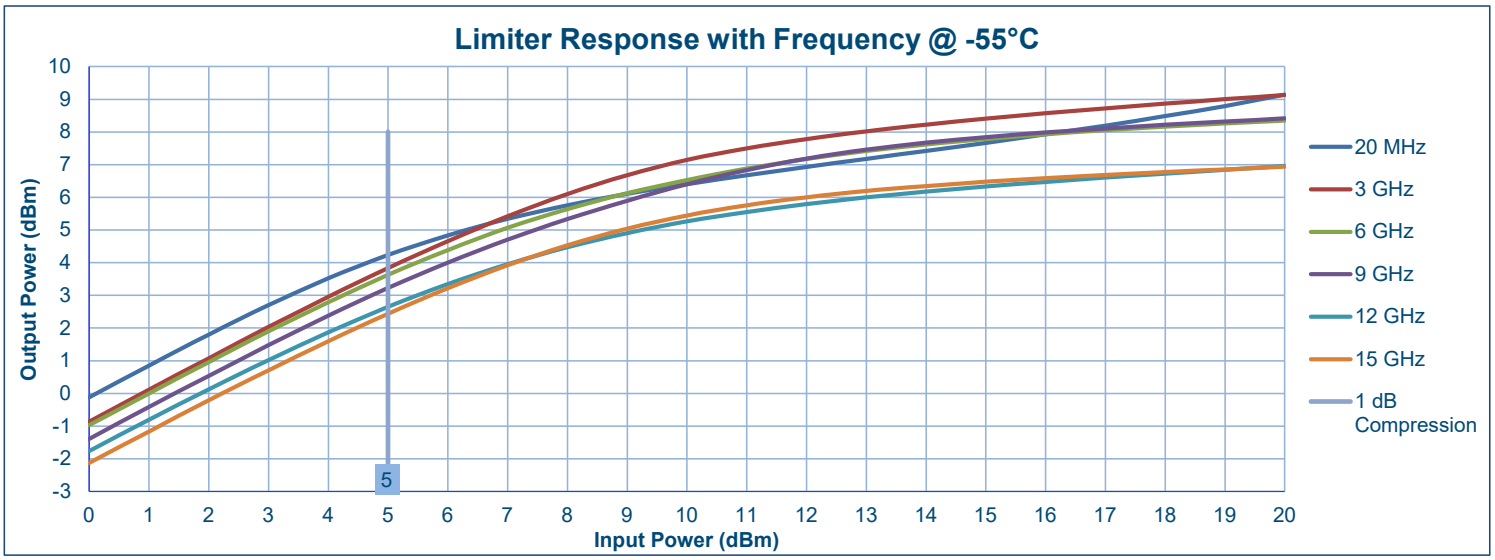

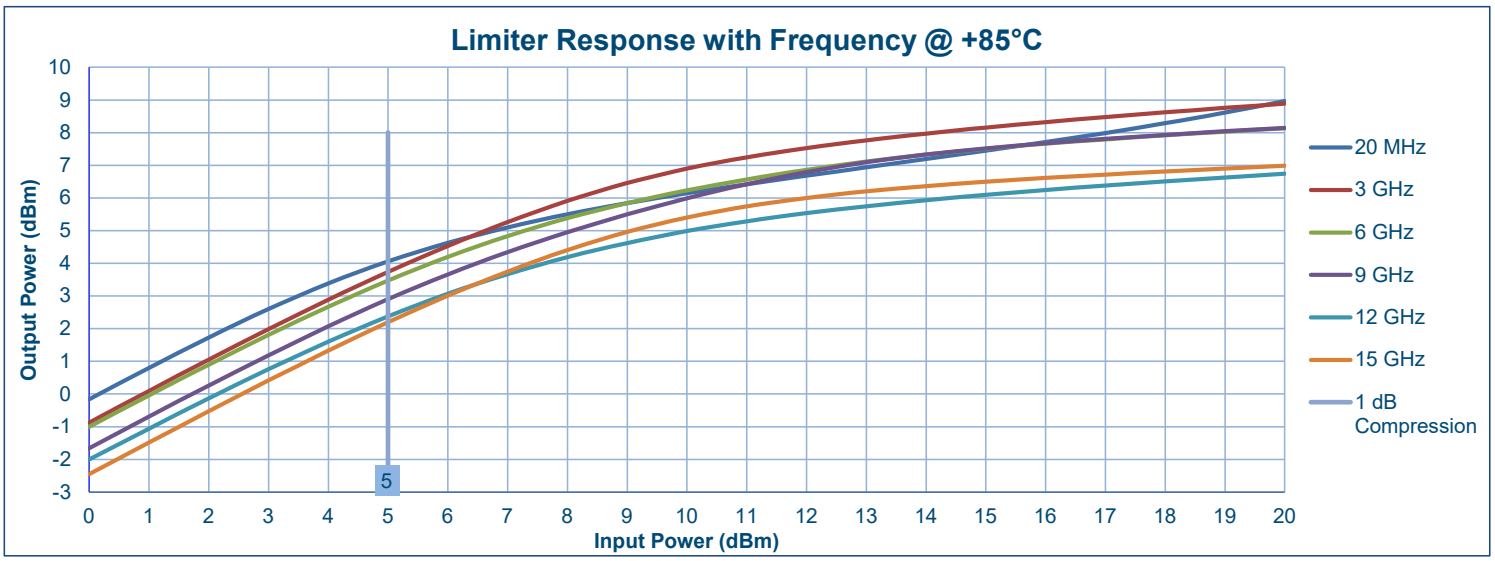

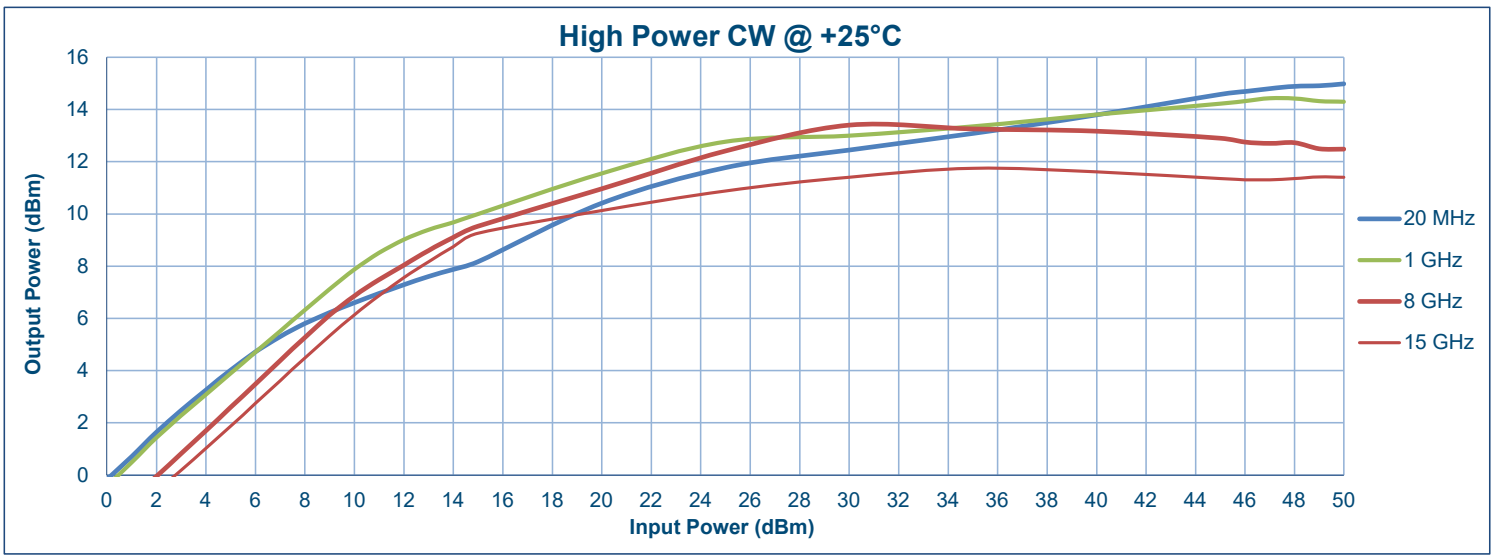

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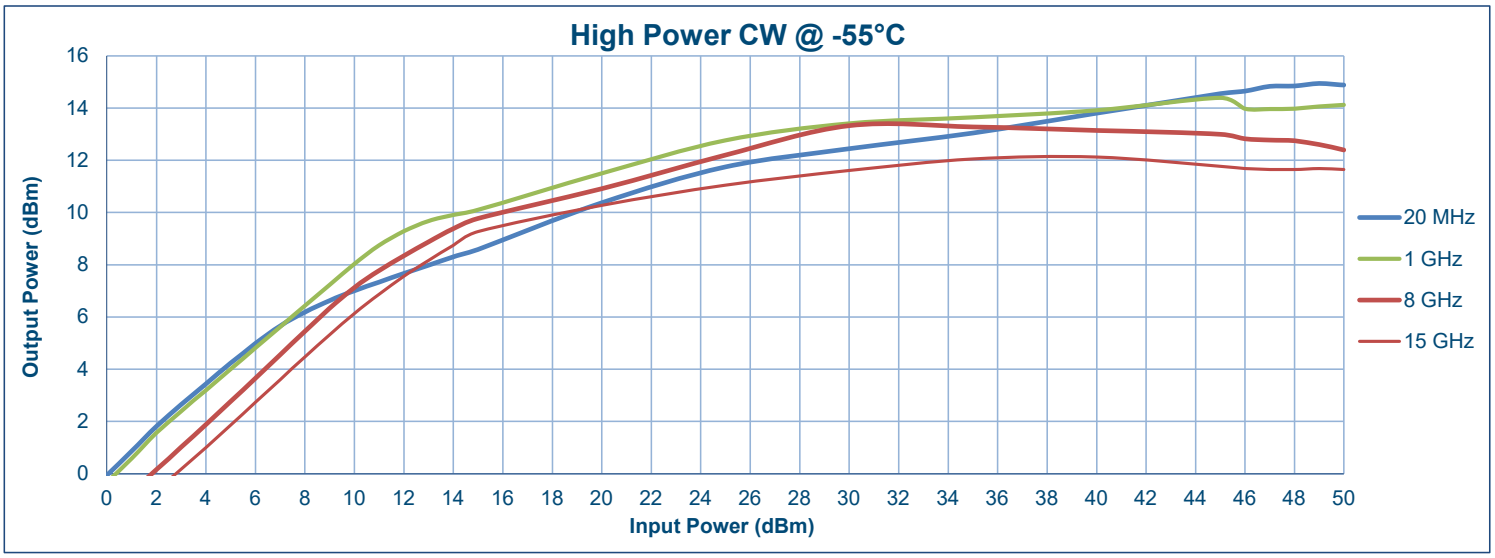

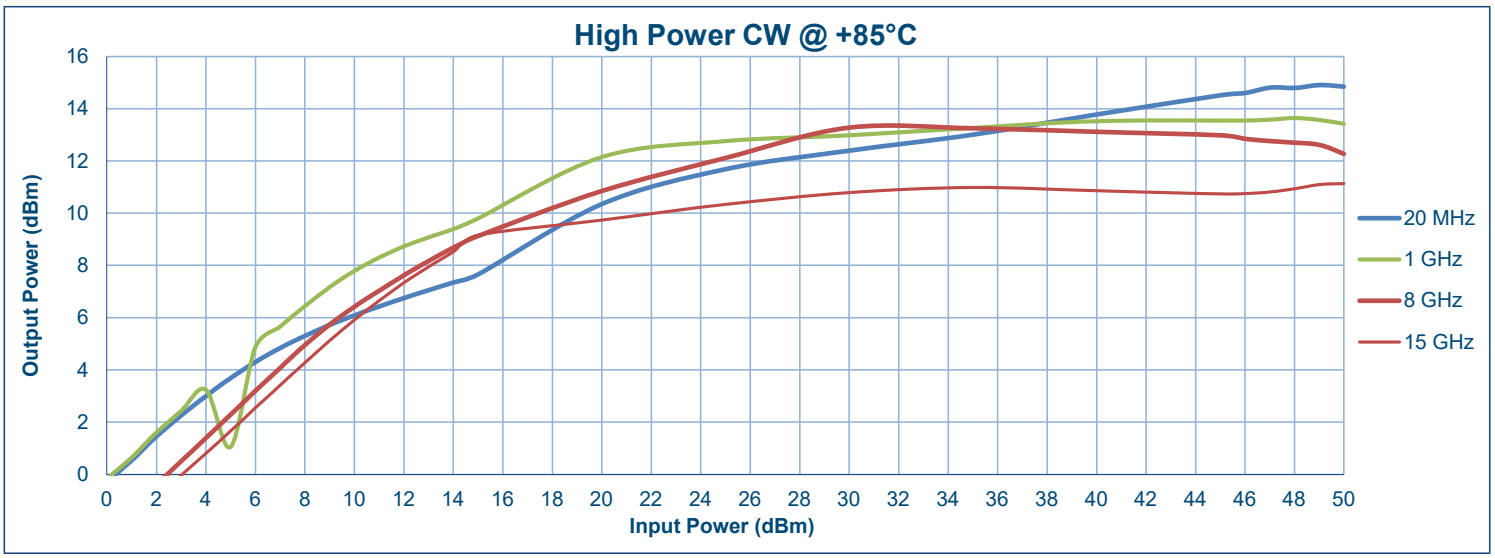

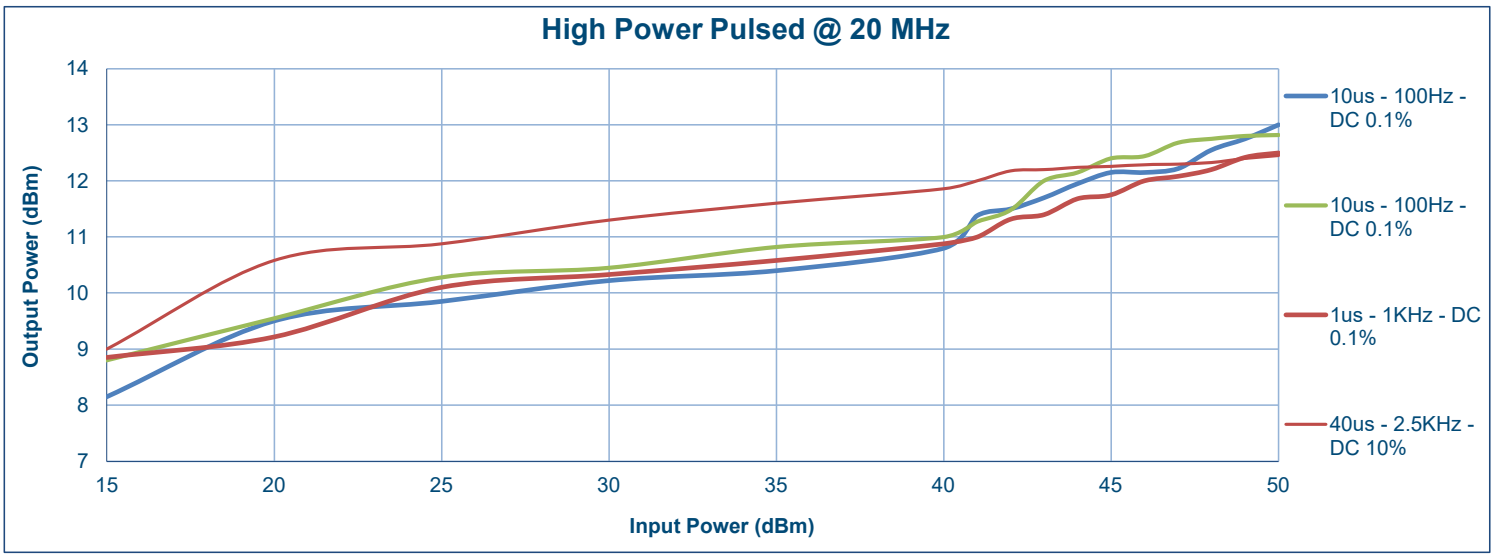

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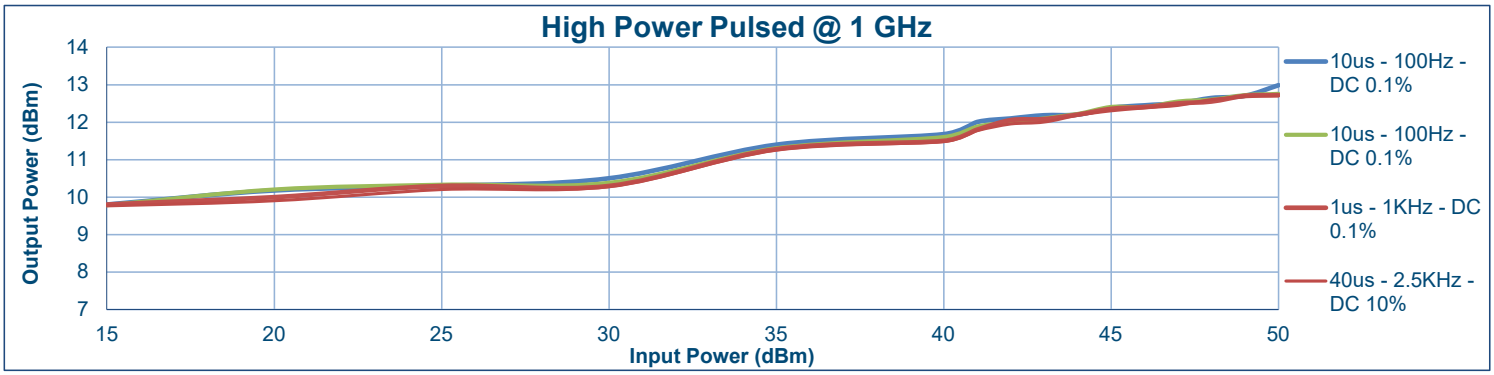
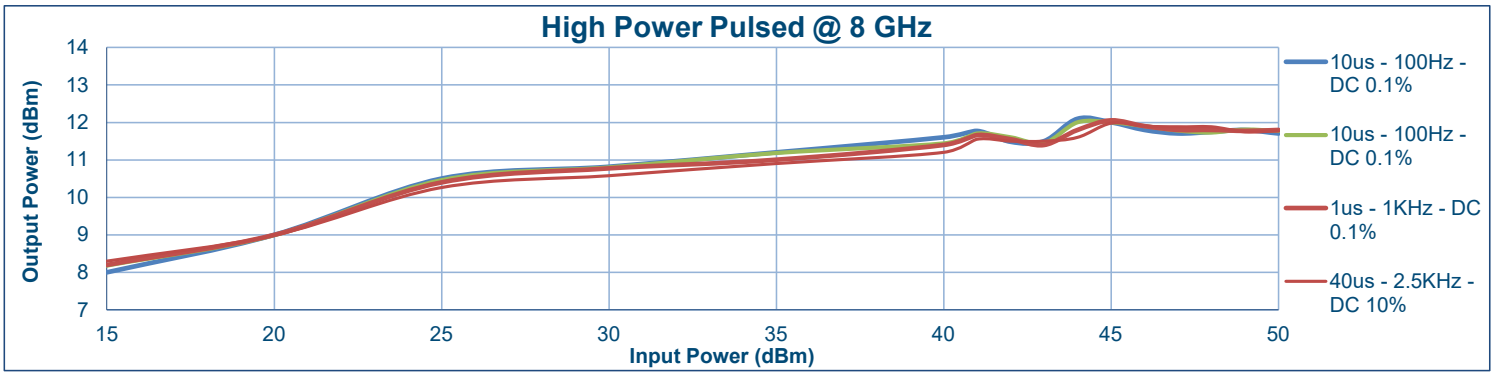
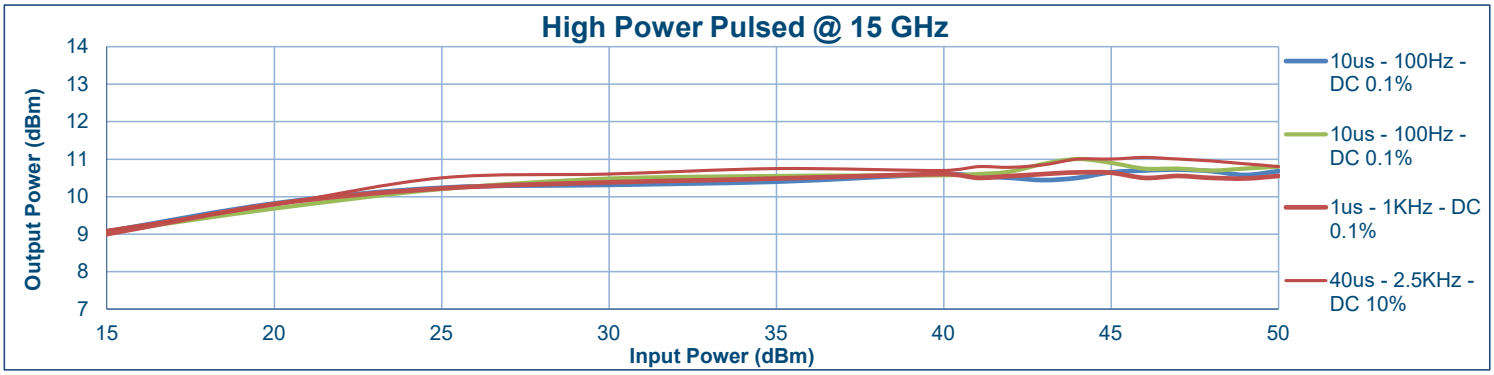


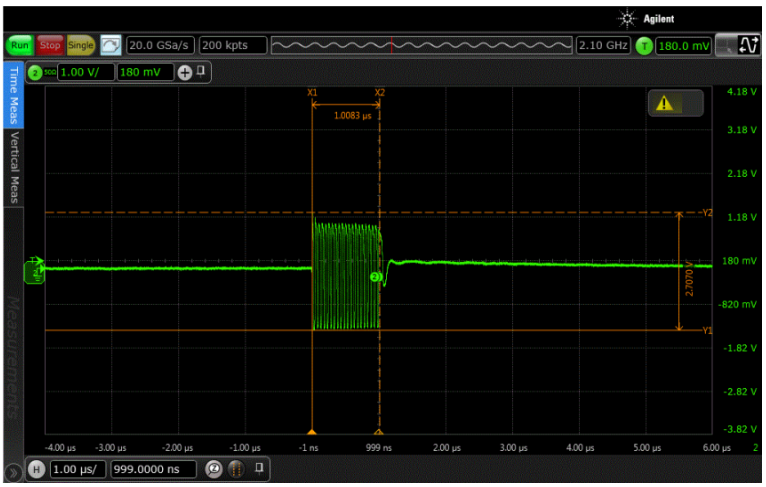




Full Pulse (20 MHz)

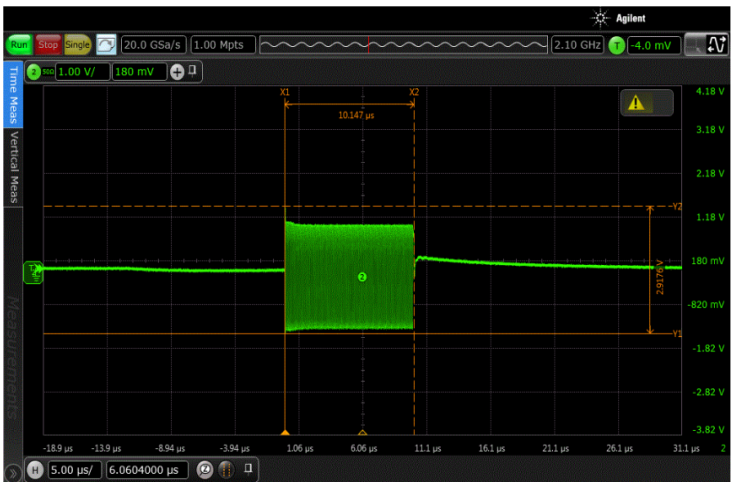
Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%

1 us Per Div.



Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%

5 us Per Div.



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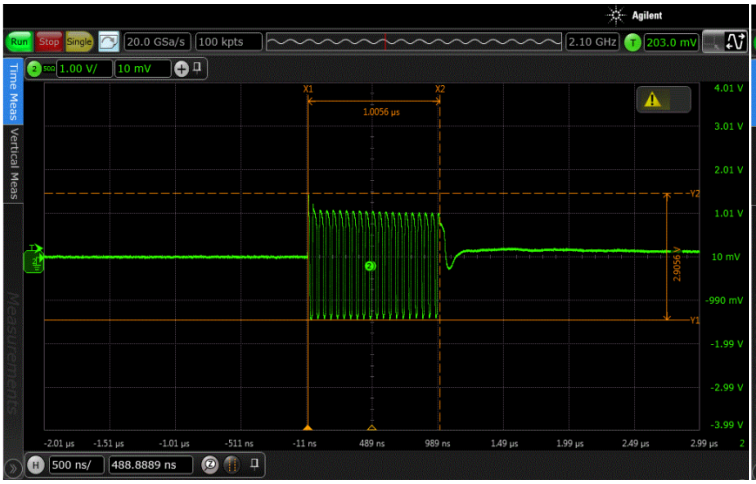
TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

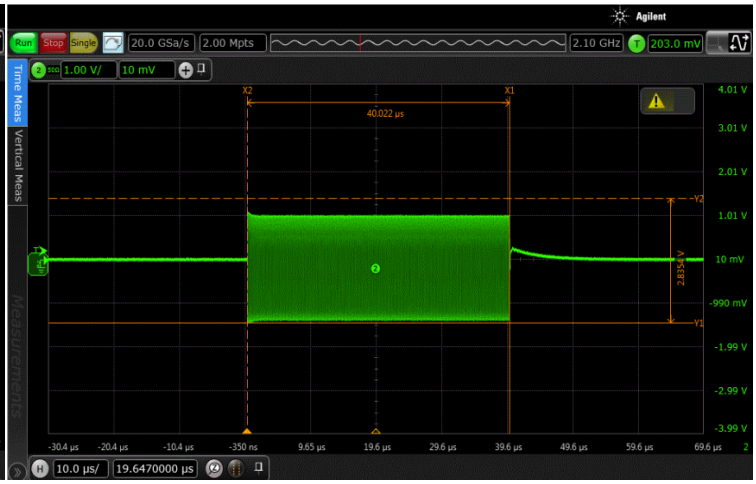
Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%

500 ns Per Div.



Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%

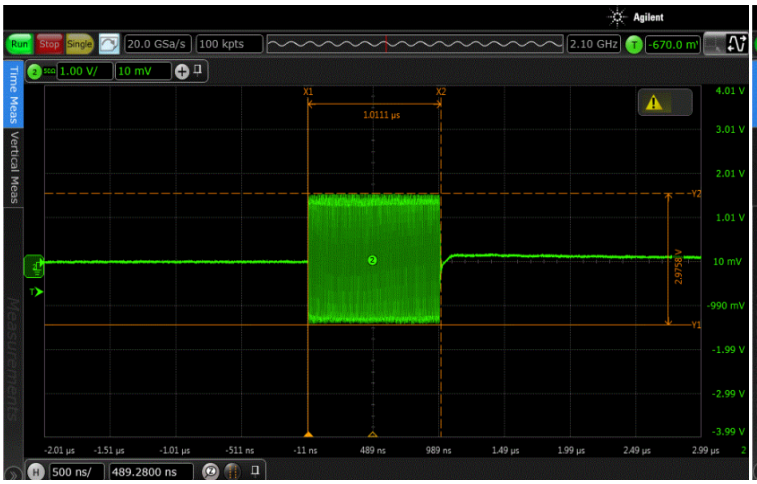
10 us Per Div.



Full Pulse (500 MHz)

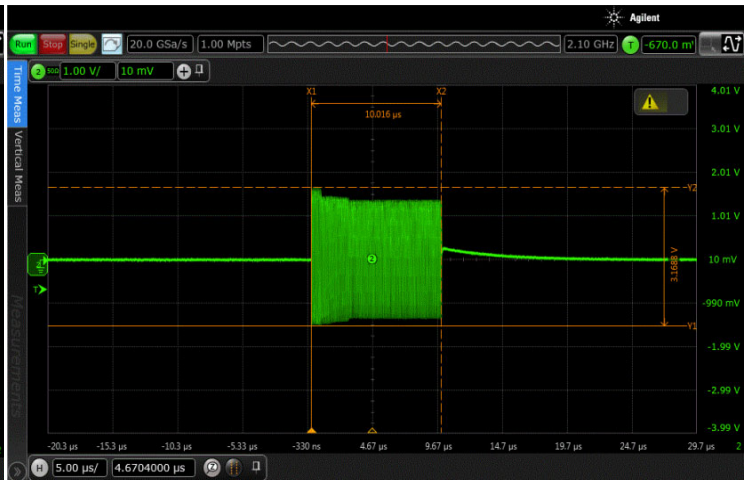
Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%

500 ns Per Div.



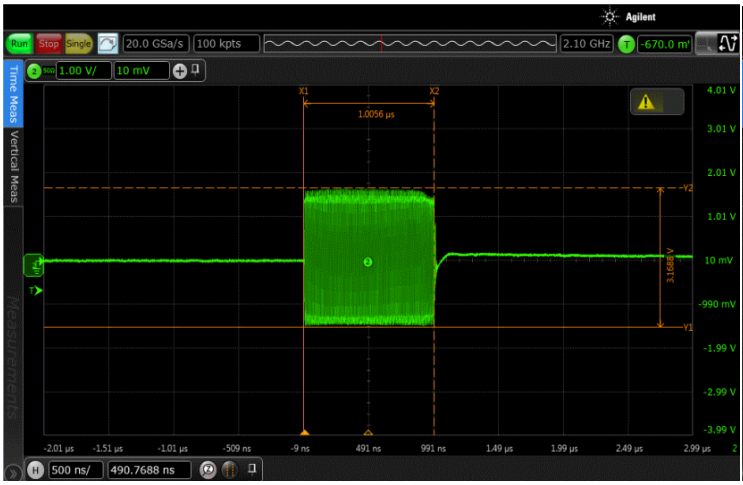
Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%

5 us Per Div.



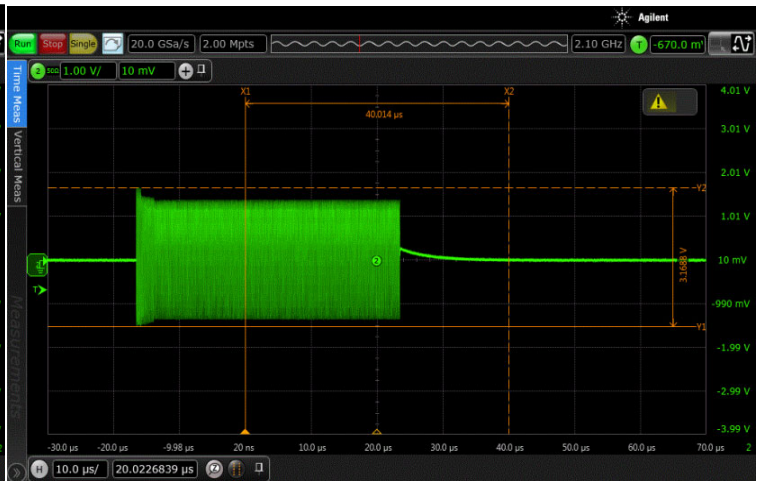
Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%

500 ns Per Div.



Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%

10 us Per Div.



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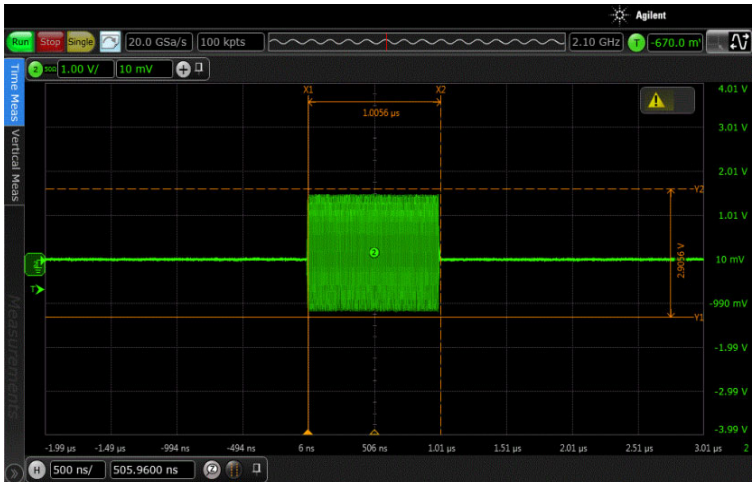
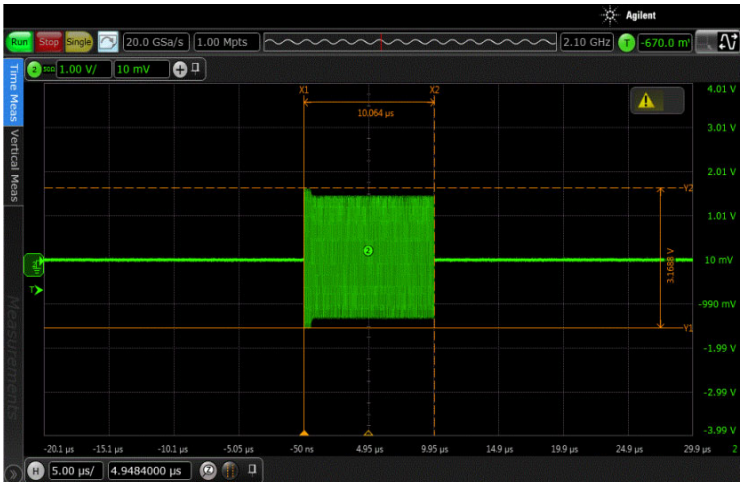
TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

Full Pulse (1 GHz)

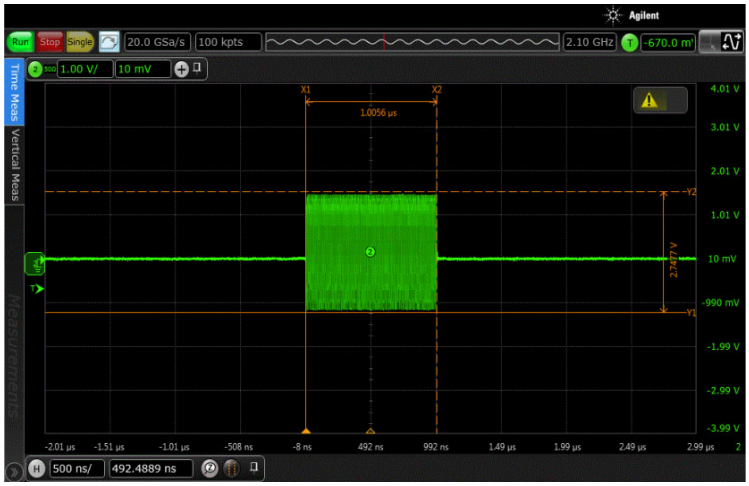
Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%
500 ns Per Div.



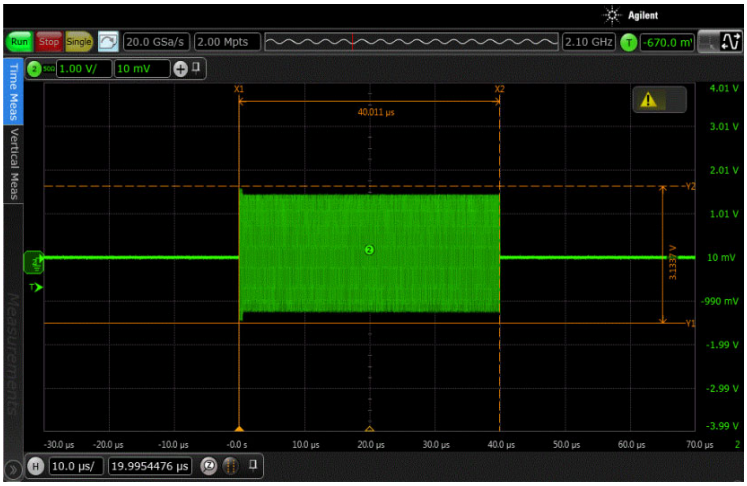
Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%
5 us Per Div.



Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%
500 ns Per Div.

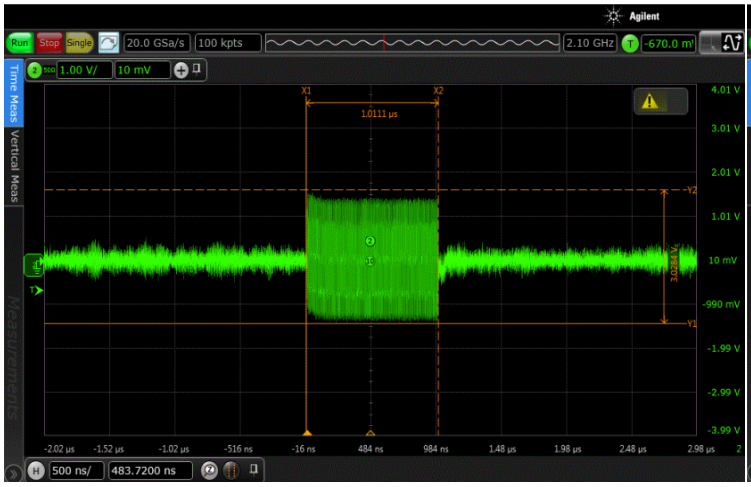


Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%
10 us Per Div.

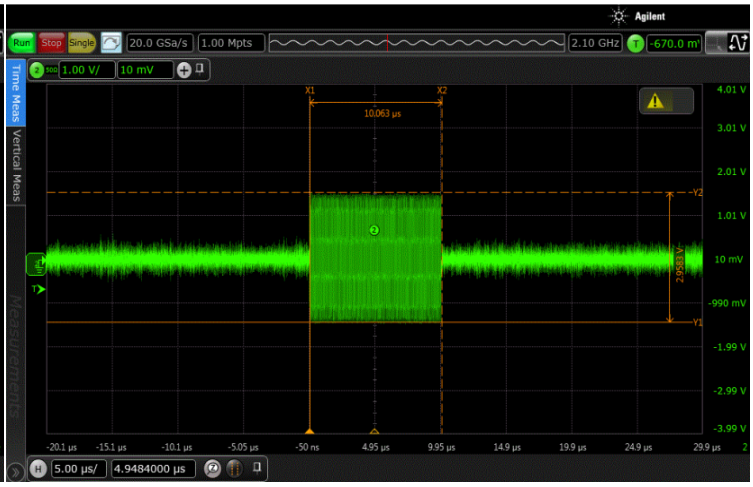


Full Pulse (2 GHz)

Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%
500 ns Per Div.



Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%
5 us Per Div.



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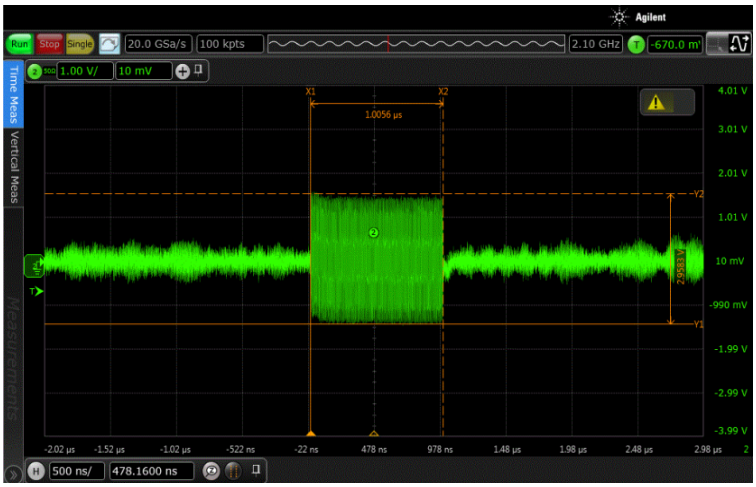
TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

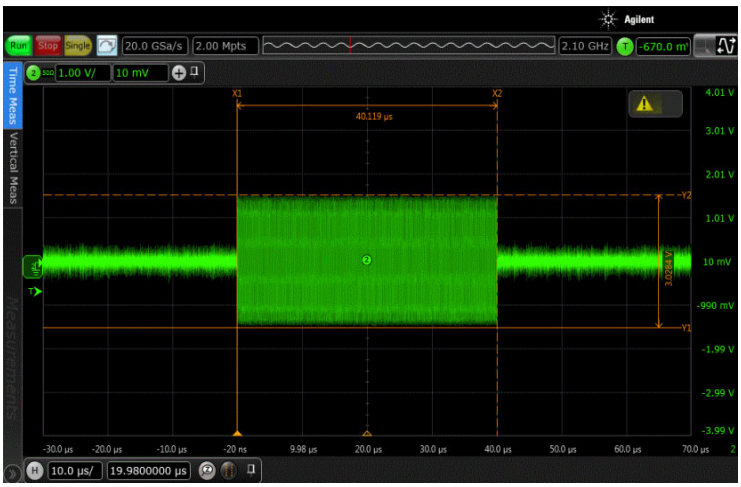
Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%

500 ns Per Div.



Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%

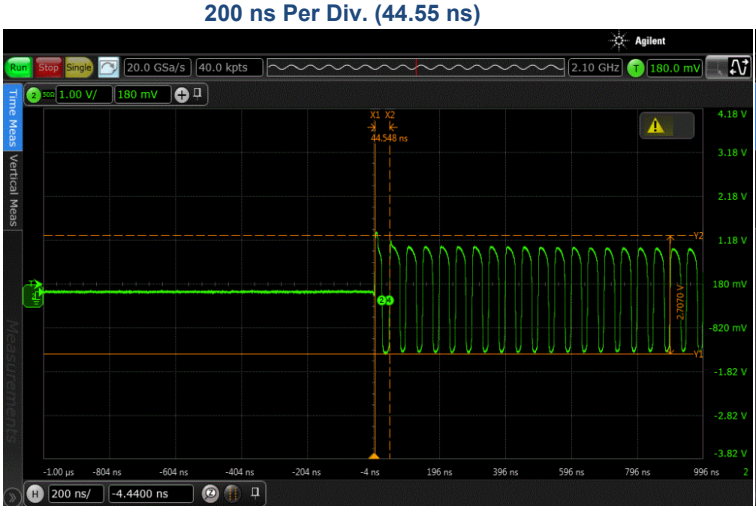
10 us Per Div.



Rise Time (20 MHz)

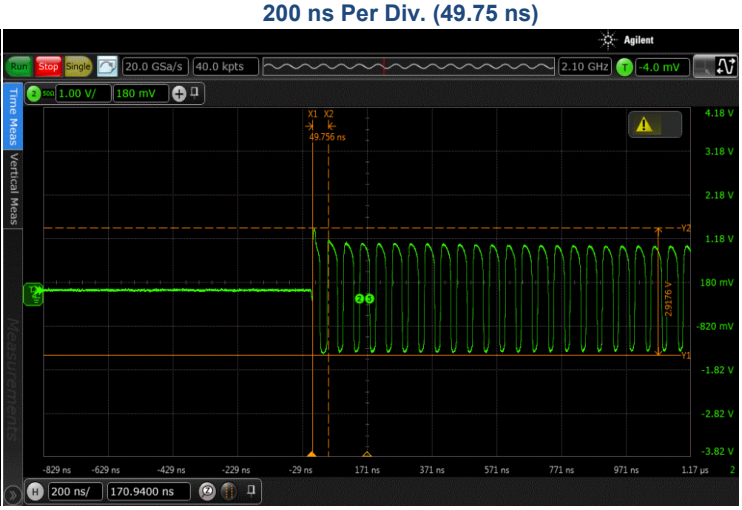
Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%

200 ns Per Div. (44.55 ns)



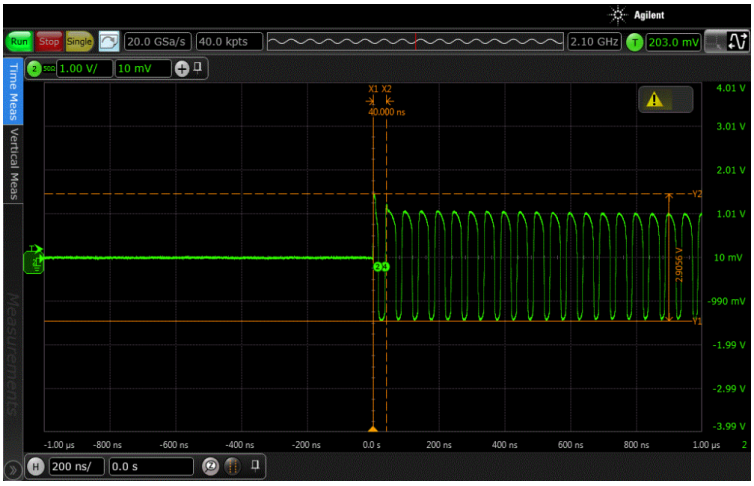
Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%

200 ns Per Div. (49.75 ns)



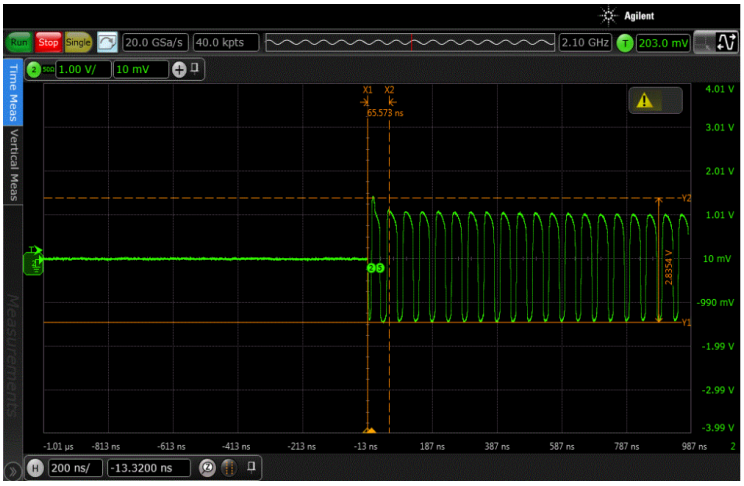
Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%

200 ns Per Div. (40.00 ns)



Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%

200 ns Per Div. (65.57 ns)



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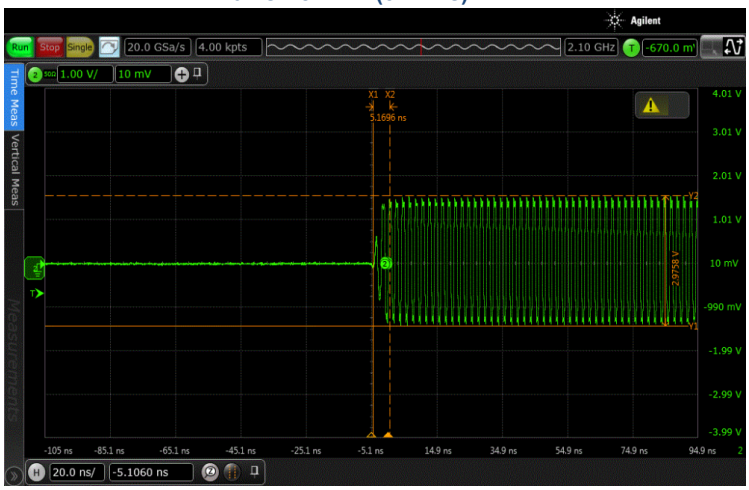
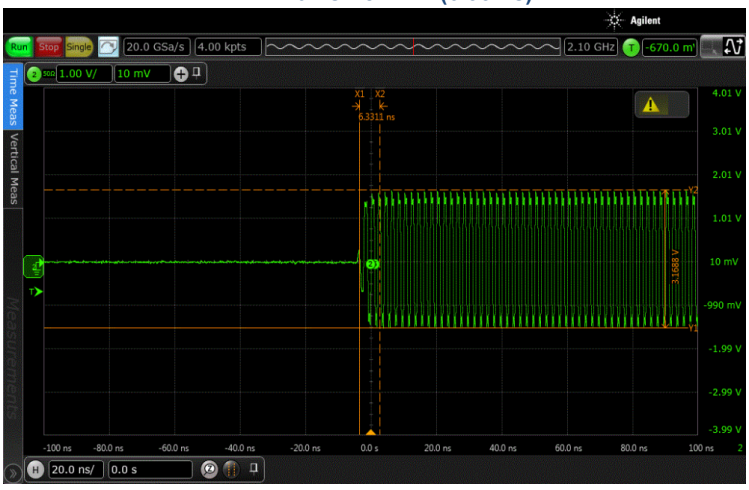
TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

Rise Time (500 MHz)

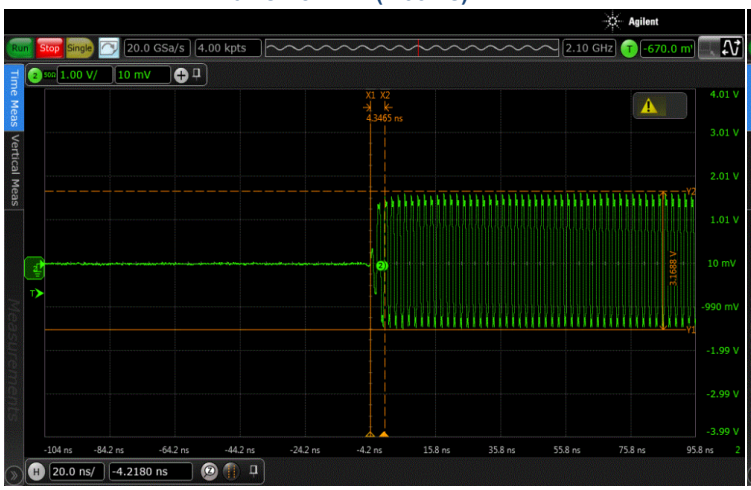
Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%
20 ns Per Div. (5.17 ns)



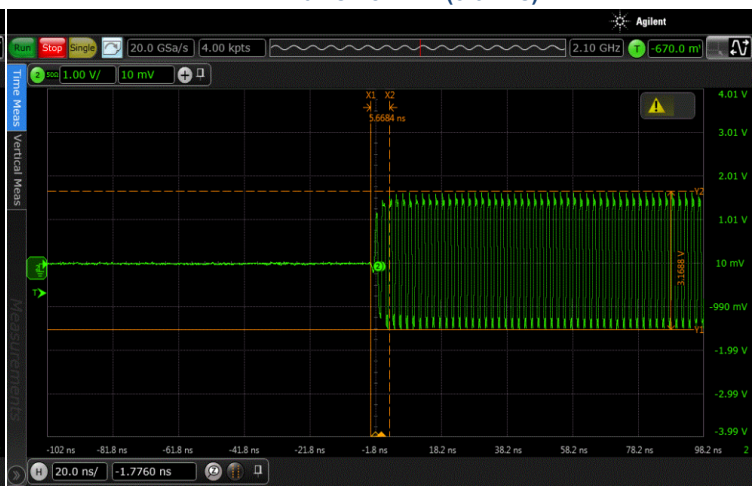
Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%
20 ns Per Div. (6.33 ns)



Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%
20 ns Per Div. (4.35 ns)

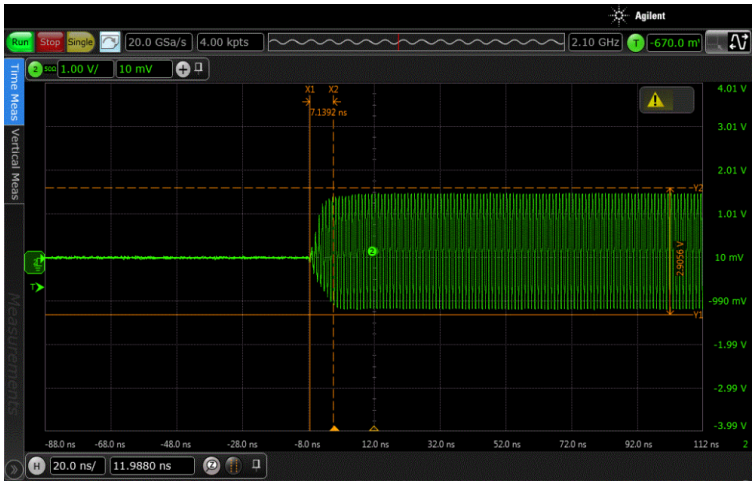


Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%
20 ns Per Div. (5.67 ns)

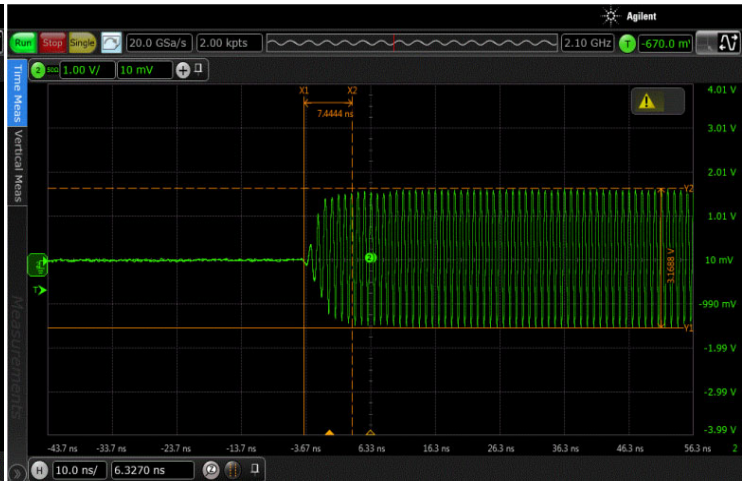


Rise Time (1 GHz)

Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%
20 ns Per Div. (7.14 ns)



Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%
10 ns Per Div. (7.44 ns)



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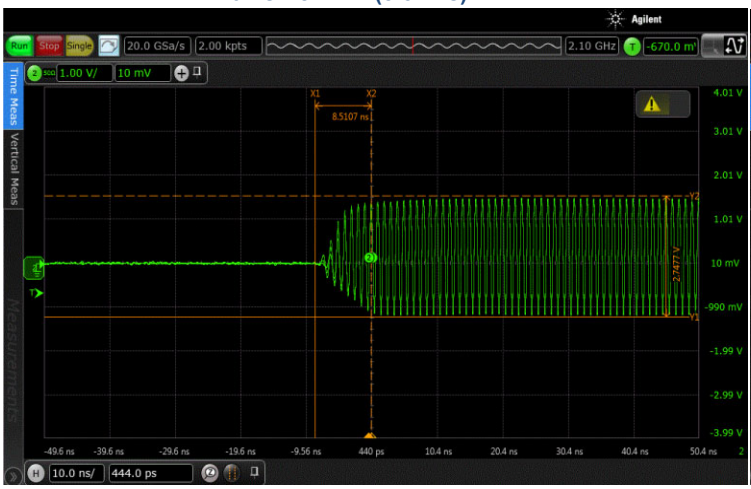
TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

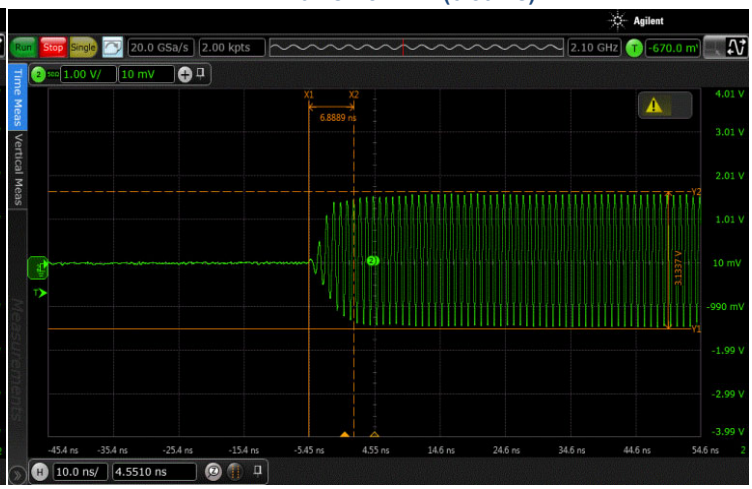
Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%

10 ns Per Div. (8.51 ns)



Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%

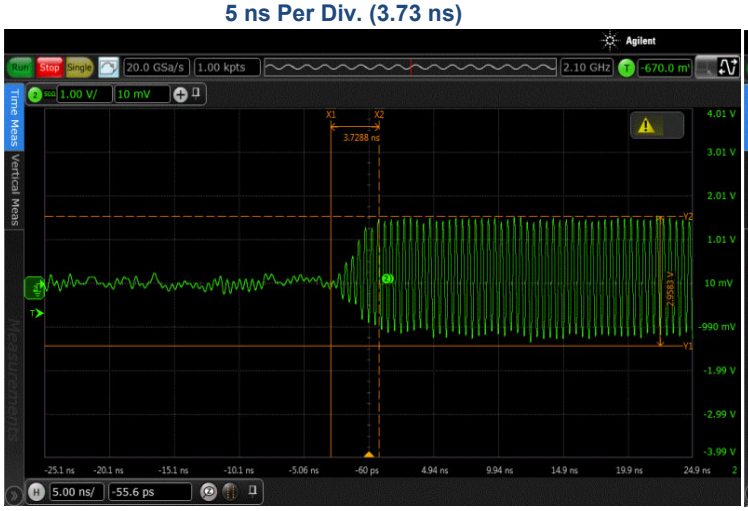
10 ns Per Div. (6.89 ns)



Rise Time (2 GHz)

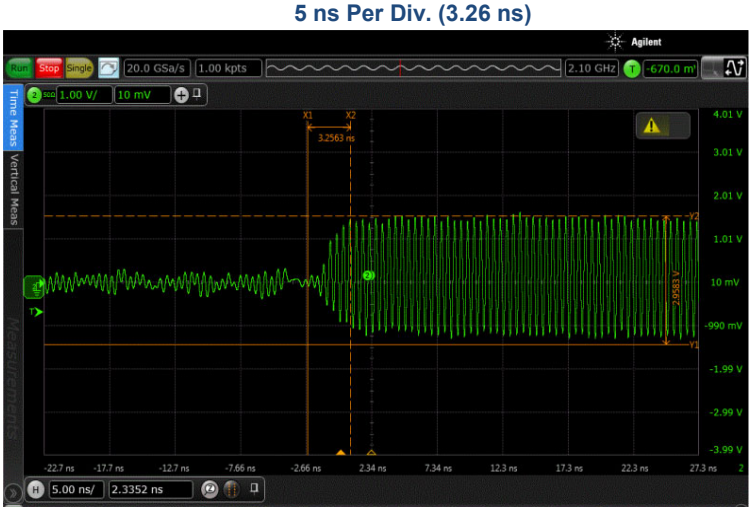
Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%

5 ns Per Div. (3.73 ns)



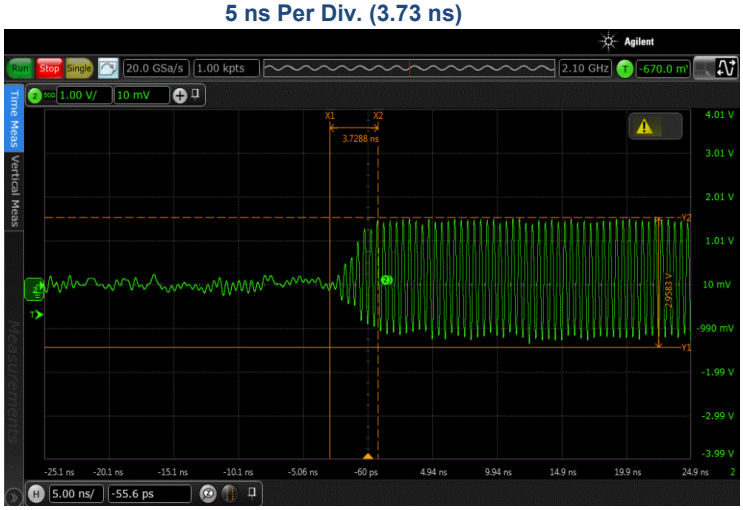
Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%

5 ns Per Div. (3.26 ns)



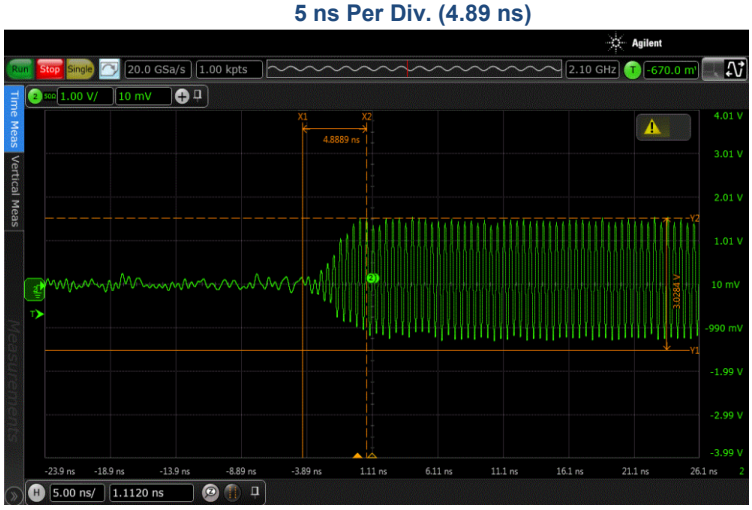
Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%

5 ns Per Div. (3.73 ns)



Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%

5 ns Per Div. (4.89 ns)



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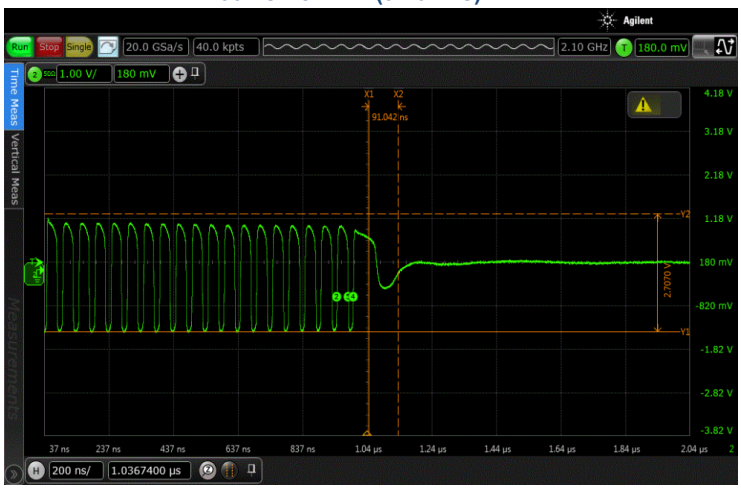
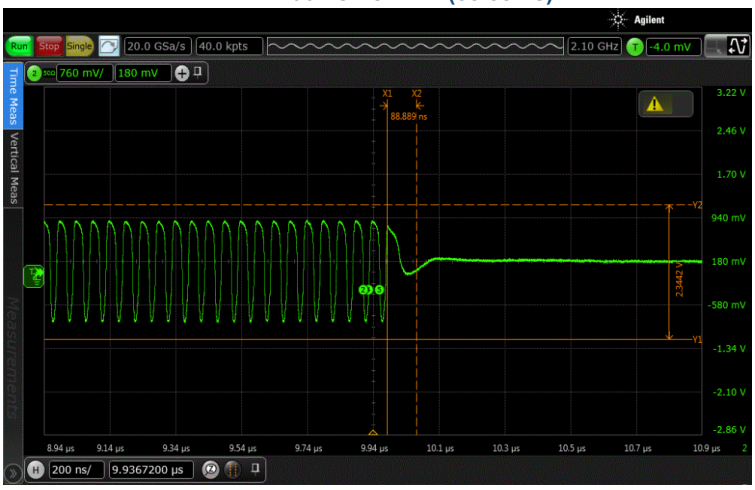
TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

Recovery (20 MHz)

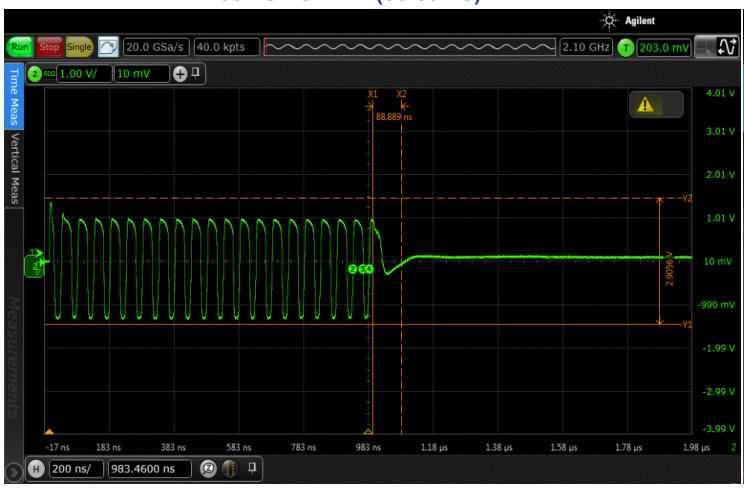
Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%
200 ns Per Div. (91.04 ns)



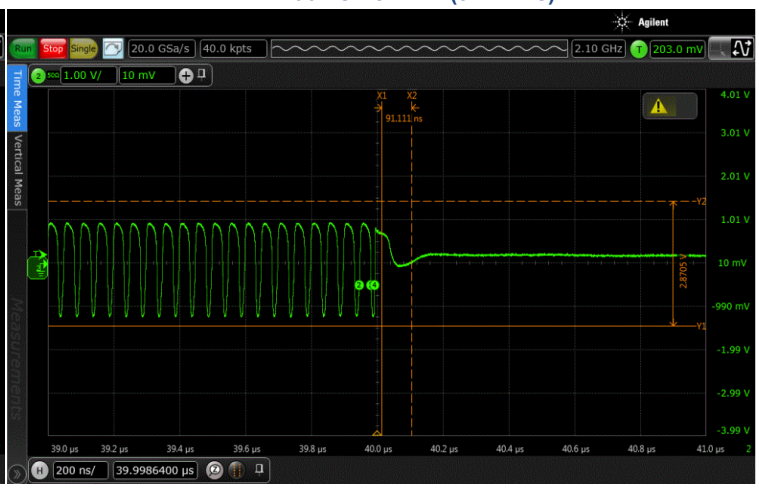
Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%
200 ns Per Div. (88.88 ns)



Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%
200 ns Per Div. (88.89 ns)

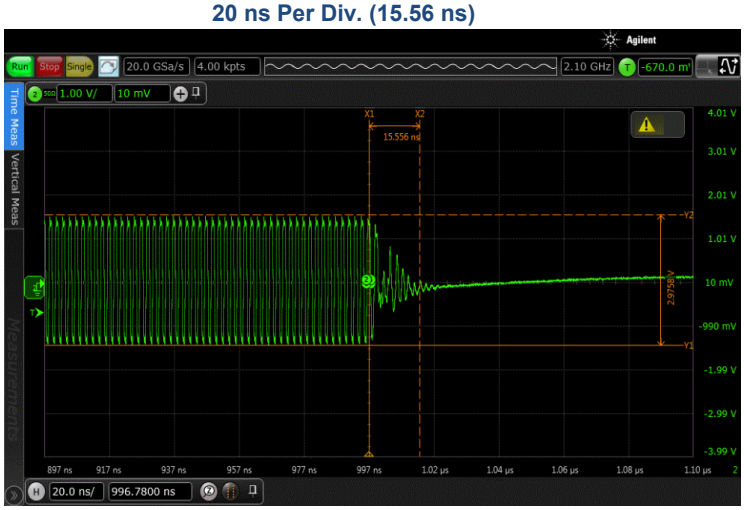


Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%
200 ns Per Div. (91.11 ns)

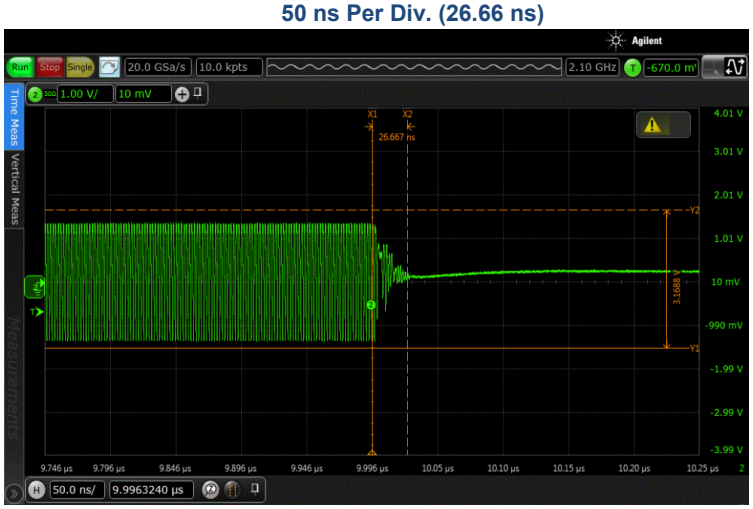


Recovery (500 MHz)

Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%
20 ns Per Div. (15.56 ns)



Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%
50 ns Per Div. (26.66 ns)



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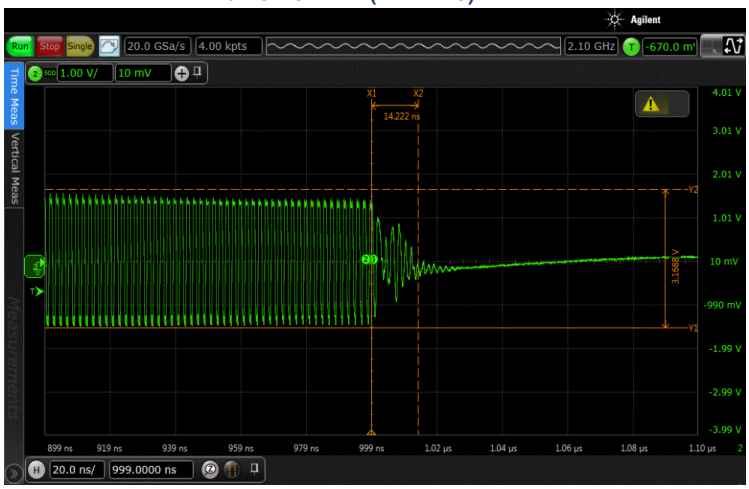
TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

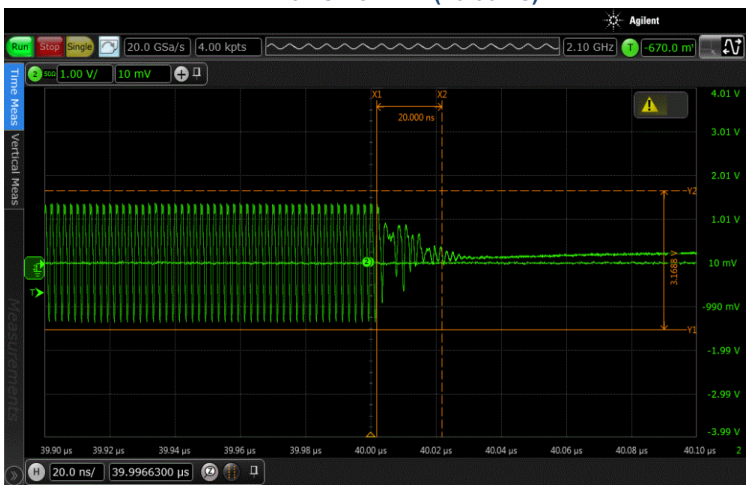
Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%

20 ns Per Div. (14.22 ns)



Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%

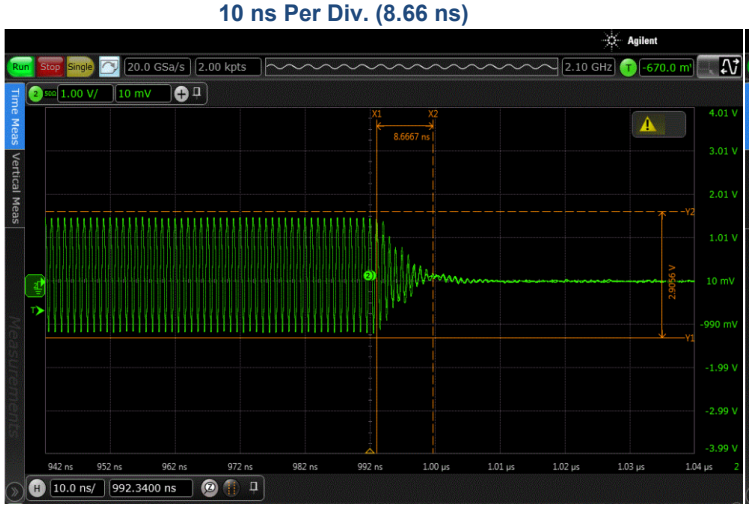
20 ns Per Div. (20.00 ns)



Recovery (1 GHz)

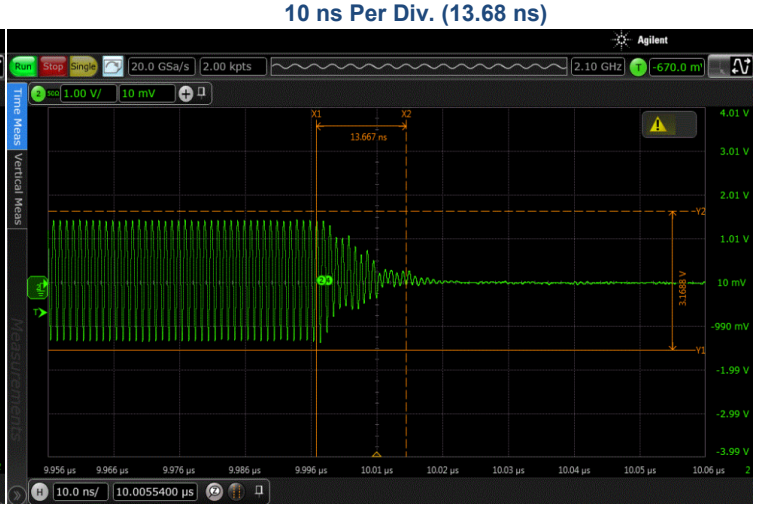
Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%

10 ns Per Div. (8.66 ns)



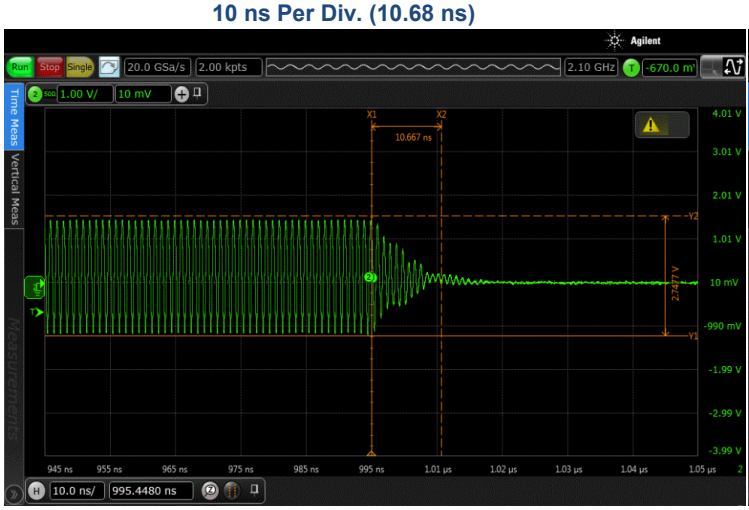
Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%

10 ns Per Div. (13.68 ns)



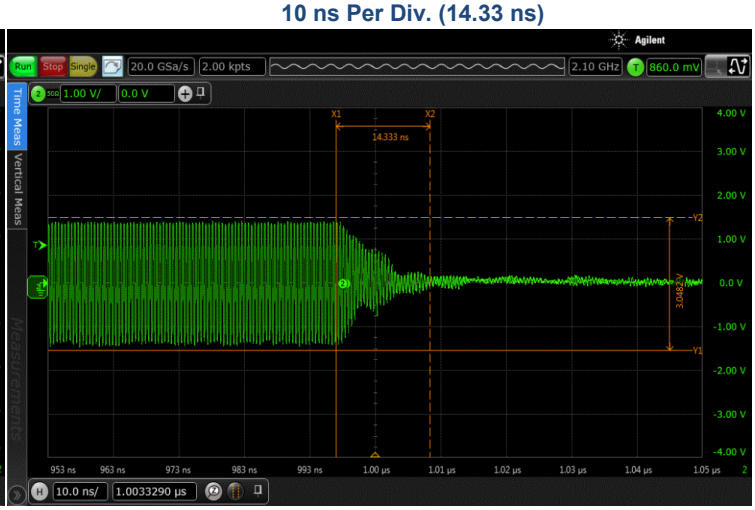
Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%

10 ns Per Div. (10.68 ns)



Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%

10 ns Per Div. (14.33 ns)



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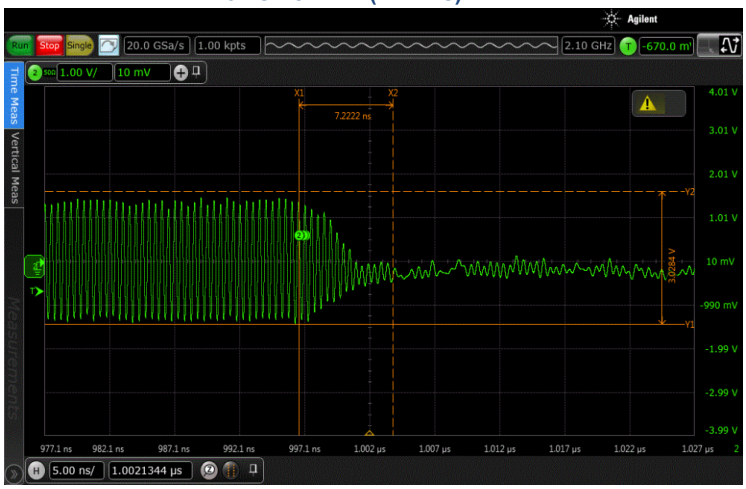
TYPICAL CHARACTERISTICS ON LM-20M15G-100W-15DBM-ROHS

Recovery (2 GHz)

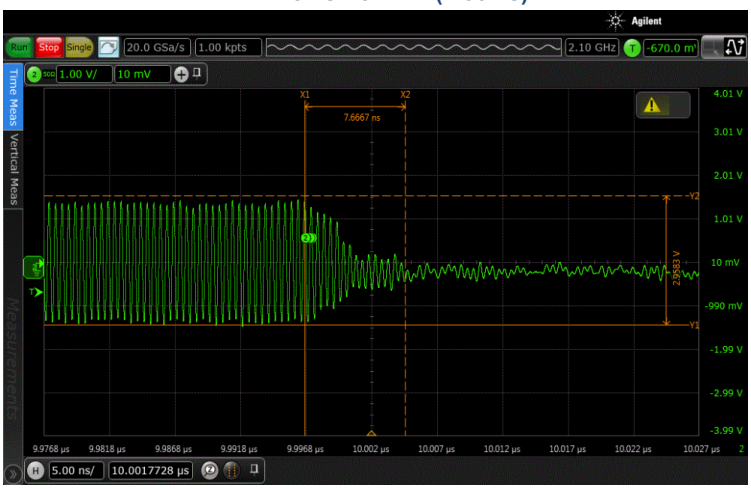
Pulsed RF Input 10W PW 1us - PRF 10 KHz - DC 1%

5 ns Per Div. (7.22 ns)



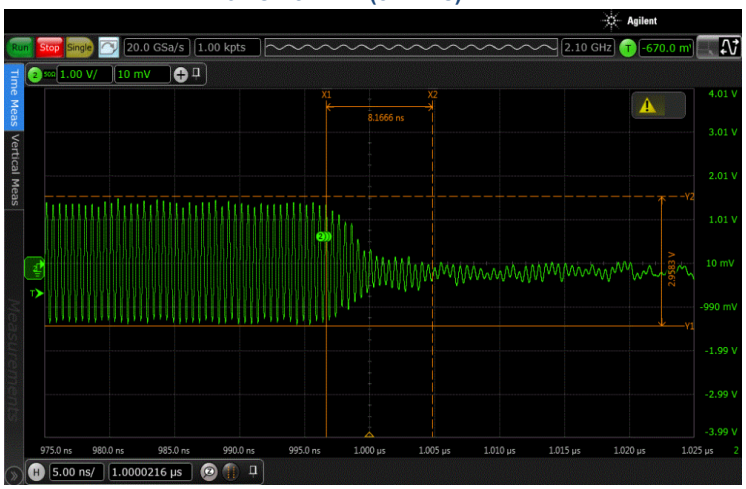
Pulsed RF Input 100W PW 10us - PRF 100 Hz - DC 0.1%

5 ns Per Div. (7.66 ns)



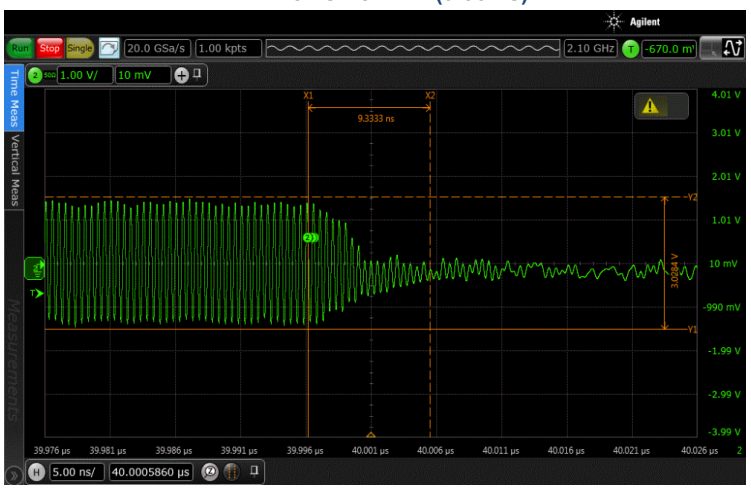
Pulsed RF Input 100W PW 1us - PRF 1 KHz - DC 0.1%

5 ns Per Div. (8.17 ns)



Pulsed RF Input 100W PW 40us - PRF 2.5 KHz - DC 10%

5 ns Per Div. (9.33 ns)



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