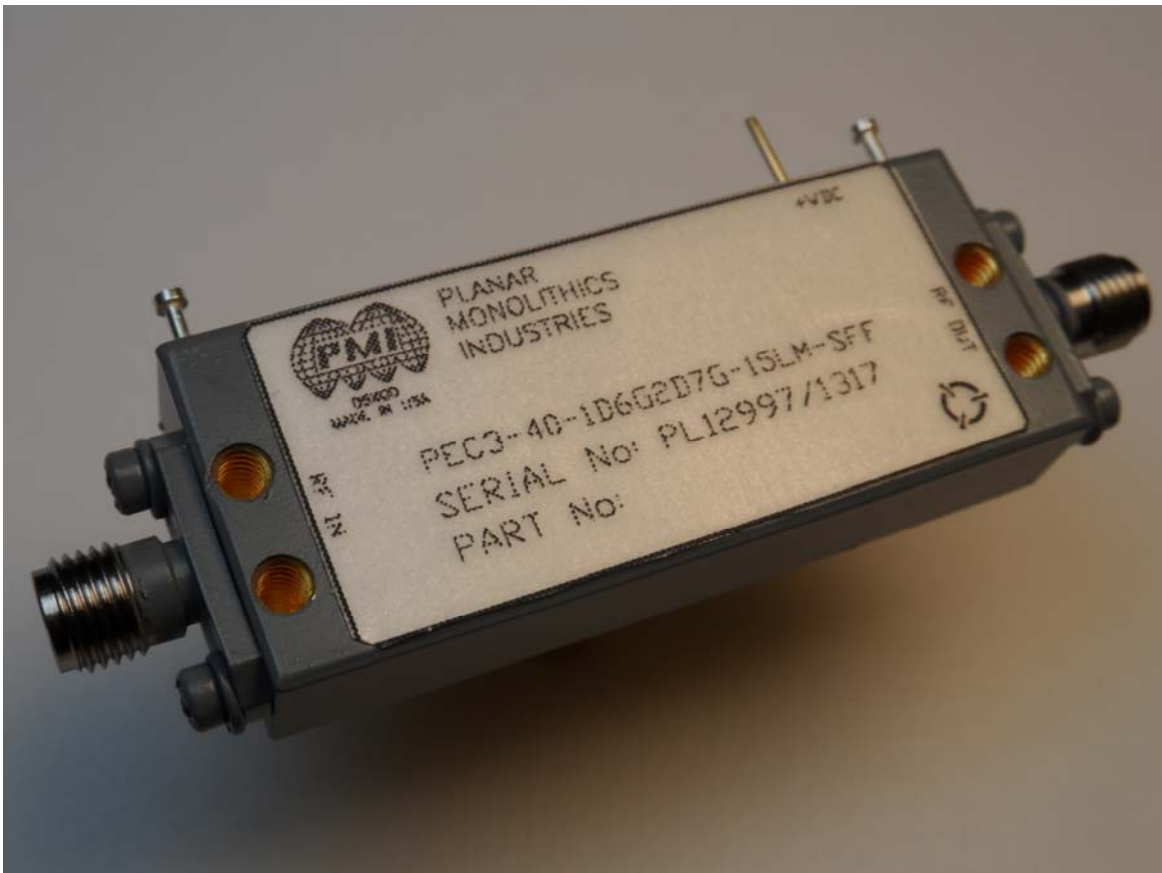




Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

PL12997/1317

Model Number PEC3-40-1D6G2D7G-15LM-SFF is a 1.6 to 2.7 GHz limiting amplifier. This model operates with an input power range of -25 to +5dBm and maintains a limited output of +15dBm (± 2 dB).



April 24, 2013
Designed By: Kevin Mason
Reported & Tested By
Hugo Gonzales / Sebastian Palacio



Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

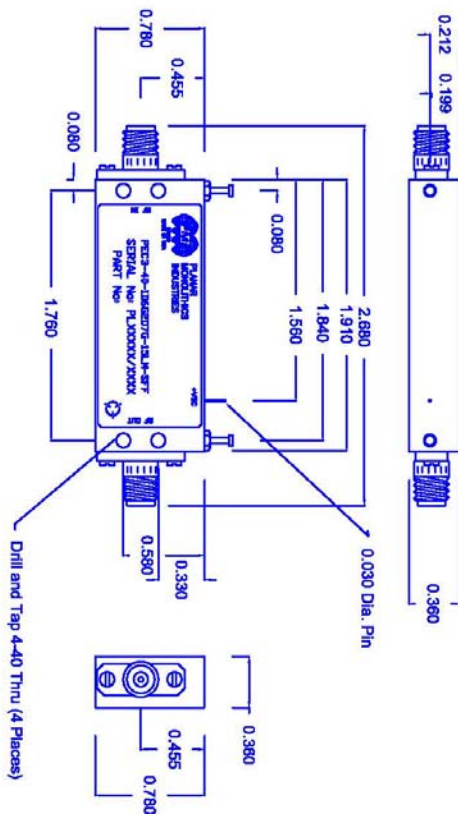
PL12997/1317

Description:
Model Number PEC3-40-1D6G2D7G-15LM-SFF is a 1.6 to 2.7 GHz limiting amplifier. This model operates with an input power range of -25 to +5dBm and maintains a limited output of +15dBm (± 2 dB).

Specifications:
 Frequency Range: 1.6 to 2.7 GHz
 Noise Figure: 5.5dB Max. @ +25C
 Gain: 35 dB Min.
 Gain Flatness: ± 2.0 dB Max. (over any 1GHz)
 VSWR: 2.0:1 Max.
 Saturated Power Output: +15dBm (± 2 dB)
 Input Power Range: -25 to +5dBm (Minimum Range)
 -30 to +5dBm (Goal)
 Harmonic Content: ± 1.5 dB Max.
 -15dBm (Minimum)
 -18dBm (Goal)
 Reverse Isolation: 50dB Min.
 Pulse Response:^(*)
 Overshoot: 0.4dB Max.
 Settling Time: 15ns Max.
 Recovery Time: 50ns Max.
 Maximum Input (No Damage): +25dBm CW
 DC Voltage: +12 to +15V
 DC Current: 400mA Max.
 RF Connectors: SMA - Female
 Size: 1.91" (L) X 0.78" (W) X 0.36" (H)
 Finish: Non-Hermetic
 Mil-Spec Epoxy Paint - Gray / Mounting surface free of paint (Gold Plated)
 Mounting Plate Gold Plated

Environmental Ratings:
 Temperature: -55°C to +85°C (Operating)
 -65°C to +125°C (Storage)
 Humidity: MIL-STD-202F, METHOD 103B COND B.
 Shock: MIL-STD-202F, METHOD 213B COND B.
 Altitude: MIL-STD-202F, METHOD 105C COND B.
 Temperature Cycle: MIL-STD-202F, METHOD 107D COND A

Note: The above specifications are subject to change or revision.



ALL DIMENSIONS ARE IN INCHES
 TOLERANCES UNLESS OTHERWISE SPECIFIED
 X.000 - 0.010
 X.000 - 0.005

REV.		DESCRIPTION	DATE	APPROVED
A.1		ORIGINAL RELEASE	09/28/19	

PLANAR MONOLITHICS INDUSTRIES, INC.
 7311-F GROVE ROAD
 FREDERICK, MARYLAND 21704 USA
 TEL: 301-662-5019 FAX: 301-662-1731
 WEBSITE: www.pmi-rf.com
 E-MAIL: sales@pmi-rf.com
 ISO 9001:2008 CERTIFIED

PMI

PMI CONFIDENTIAL AND PROPRIETARY

SYMBOL	DATE	TITLE
ALV	09/28/19	PRODUCT FEATURE
SIZE	FACE NO.	REV.
A	05X00	27015341
SCALE	N/S	SHEET 1 OF 1



Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

PL12997/1317

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range:	1.6 GHz – 2.7 GHz	1.6 GHz – 2.7 GHz Pass	
2	Noise Figure:	5.5dB Max @ +25°C	4.29dB Pass See Plot	
3	Gain:	35dB Min	42.37dB Pass See Plot	
4	Gain Flatness:	±2.0dB Max (Over any 1GHz)	Pass - See Plot (Over any 1GHz)	
5	VSWR:	2.0:1 Max	Input 1.22:1 Output 1.28:1 Pass See Plot	
6	Saturated Power Output:	+15dBm (±2 dB)	Pass See Graph	
7	Input Power Range:*	-25 to +5 dBm (Min) -30 to +5 dBm (Goal)	Pass See Graph	
8	Saturated Power Flatness:	±1.5dB Max	±0.80dB Pass See Graph	
9	Harmonic Content:	-15dBm (Min) -18dBm (Goal)	Pass See Plots	
10	Reverse Isolation:	50dB Min.	81.15dB Pass See Plot	
11	Pulse Response:** (Overshoot)	0.4dB Max	<0.4dB – See Plot	
12	Pulse Response: ** (Settling Time)	15ns Max	<15ns – See Plot	
13	Pulse Response: ** (Recovery Time)	50ns Max	<30ns – See Plot	
14	Maximum Input: (No Damage)	+25dBm CW	Pass	
15	DC Supply:	400mA Max. @ +12VDC to +15VDC	245mA @ +12VDC to +15VDC	

(*) – For Limiting At +15dBm Output

(**) – For PW > 50 nSec



Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

PL12997/1317

OIP3 & HARMONIC CONTENT SUMMARY

OIP3*	
FREQUENCY	MEASURED VALUE
1.6GHz	+19.13dBm
2.7GHz	+17.91dBm

*See measured data below

HARMONIC CONTENT			
FUNDAMENTAL TONE (1ST HARMONIC)	2ND HARMONIC	3RD HARMONIC	4TH HARMONIC
1.6GHz	-26.81dBc	-29.33dBc	-41.28dBc
2.7GHz	-23.31dBc	-28.61dBc	-36.65dBc

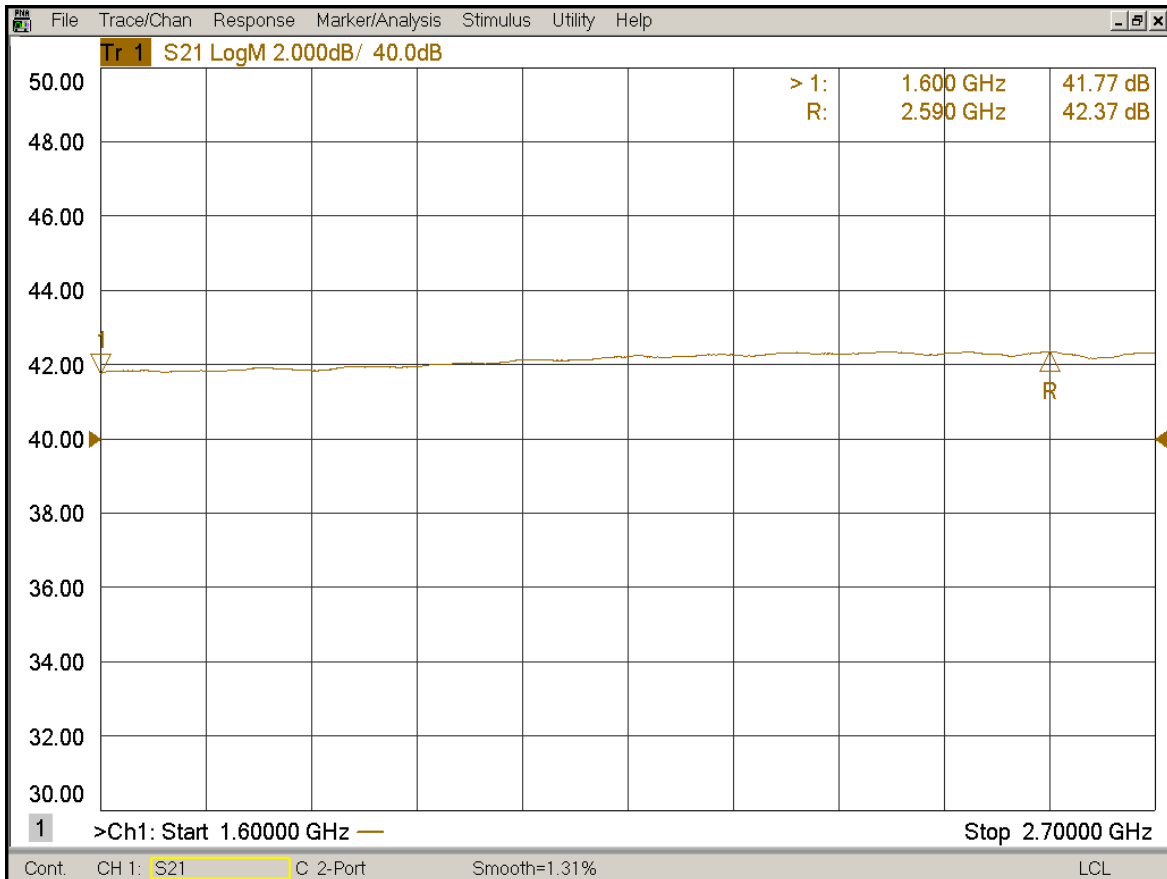
*See measured data below



Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

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Gain





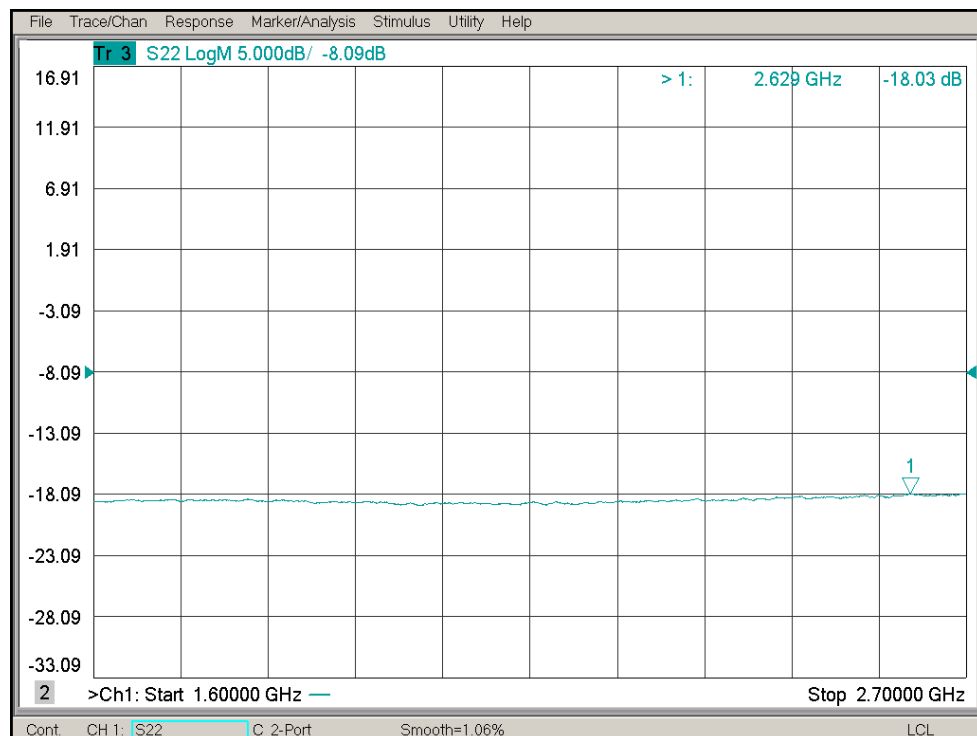
Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

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Input VSWR



Output VSWR



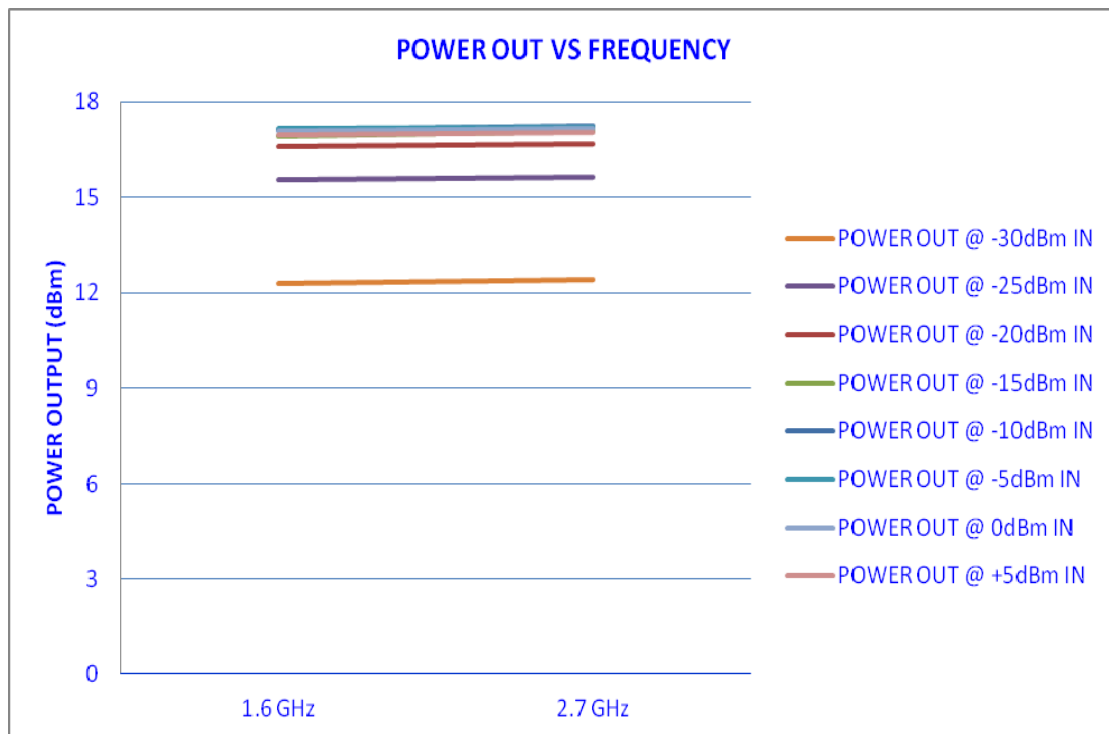


Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

PL12997/1317

Power Output vs. Frequency-30 to+5dBm CW

	1.6 GHz	2.7 GHz
-30	12.3	12.43
-25	15.57	15.64
-20	16.62	16.69
-15	16.92	17.07
-10	17.06	17.09
-5	17.07	17.09
0	17.08	17.05
5	16.95	17.03

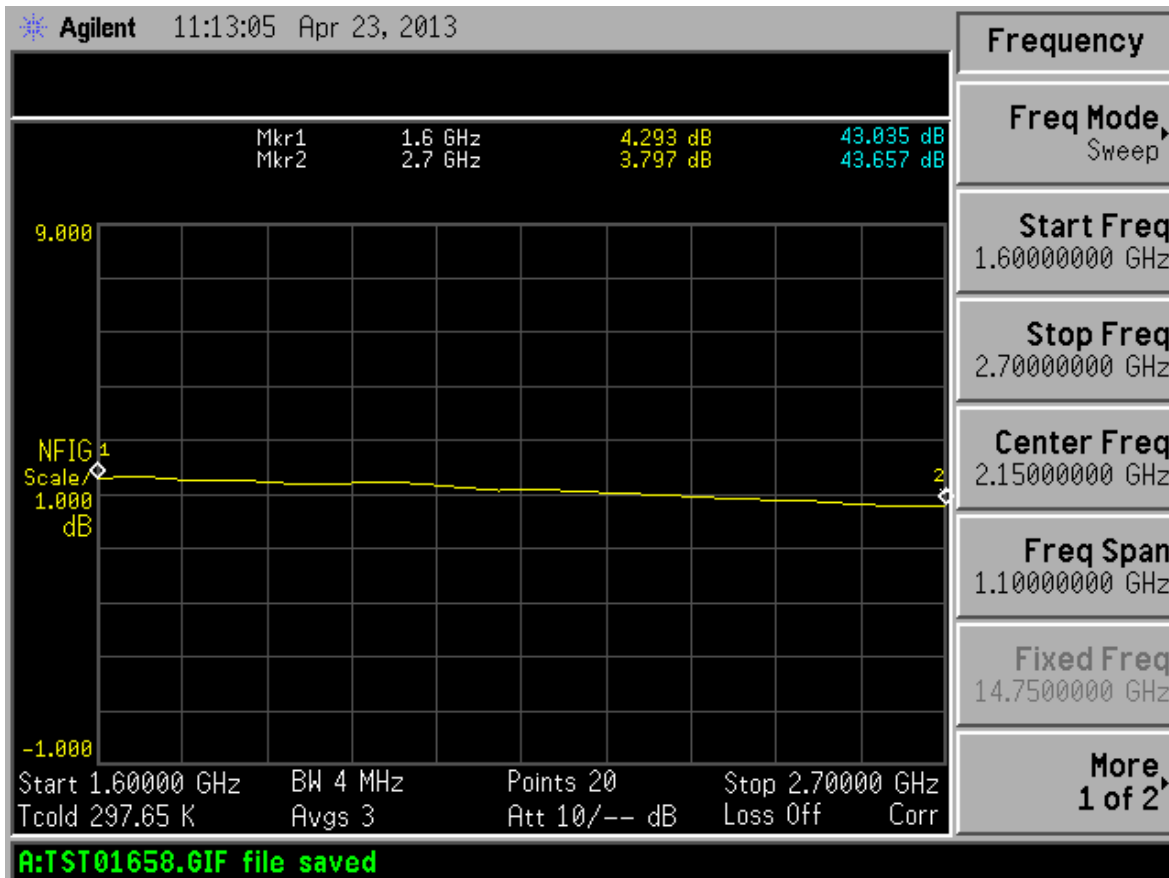




Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

PL12997/1317

Noise Figure Plot (+25°C)

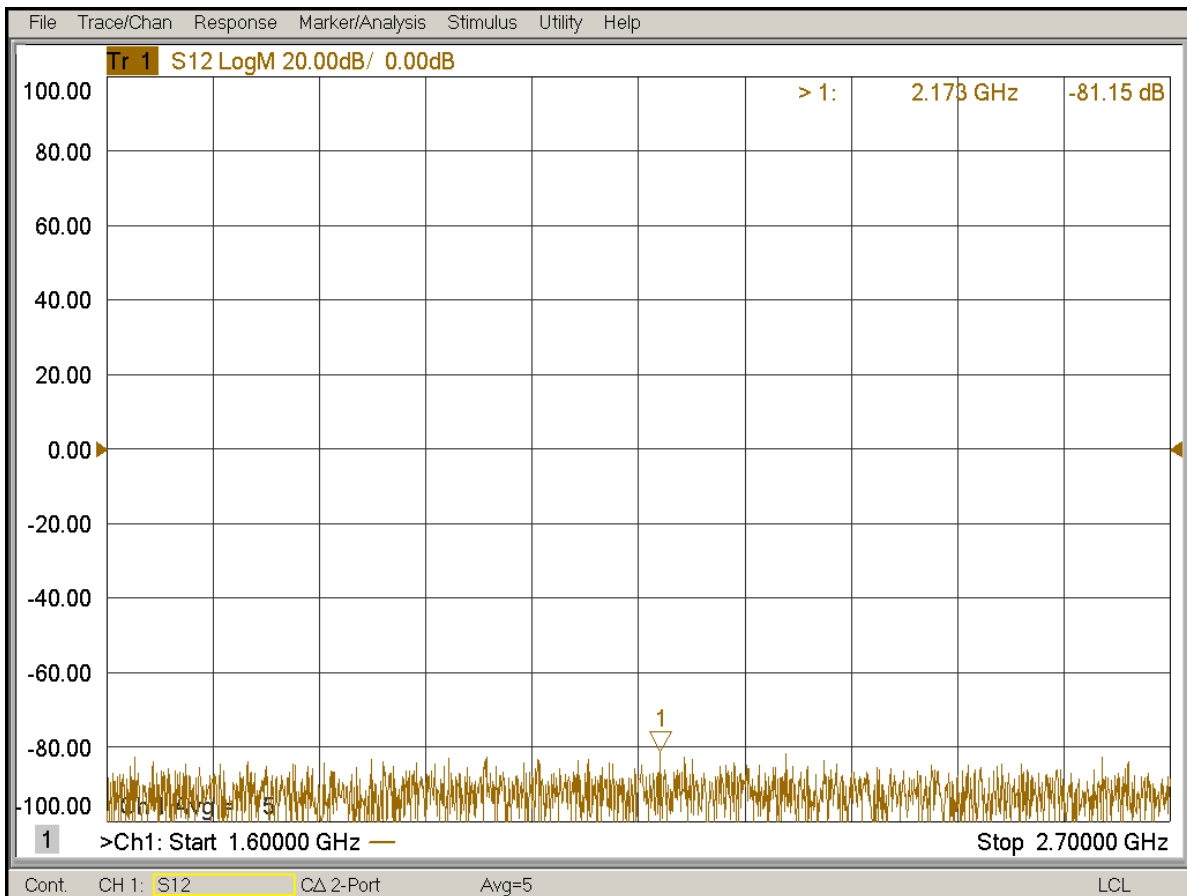




Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

PL12997/1317

Reverse Isolation

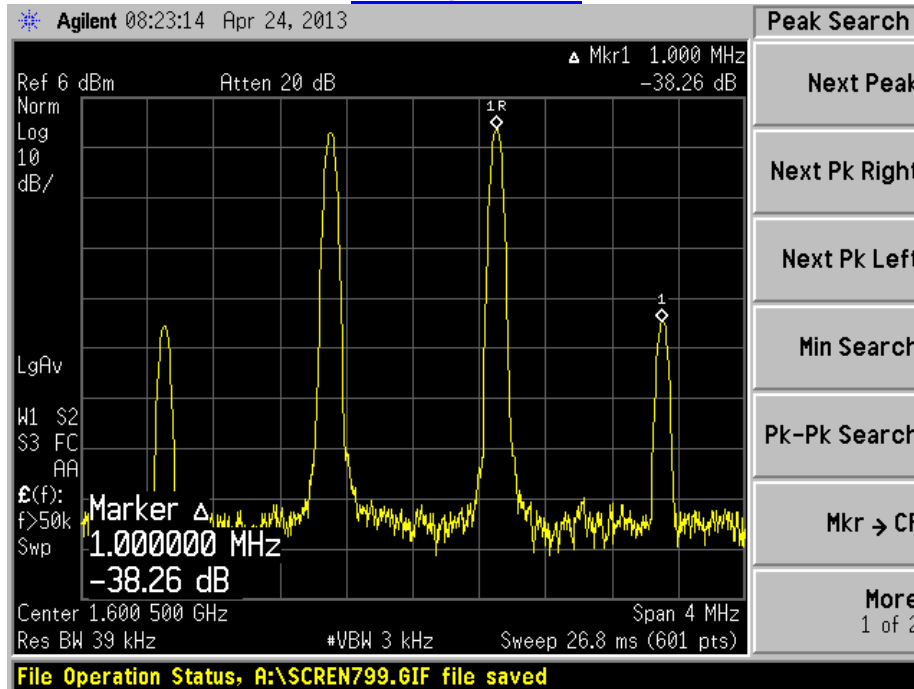




Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

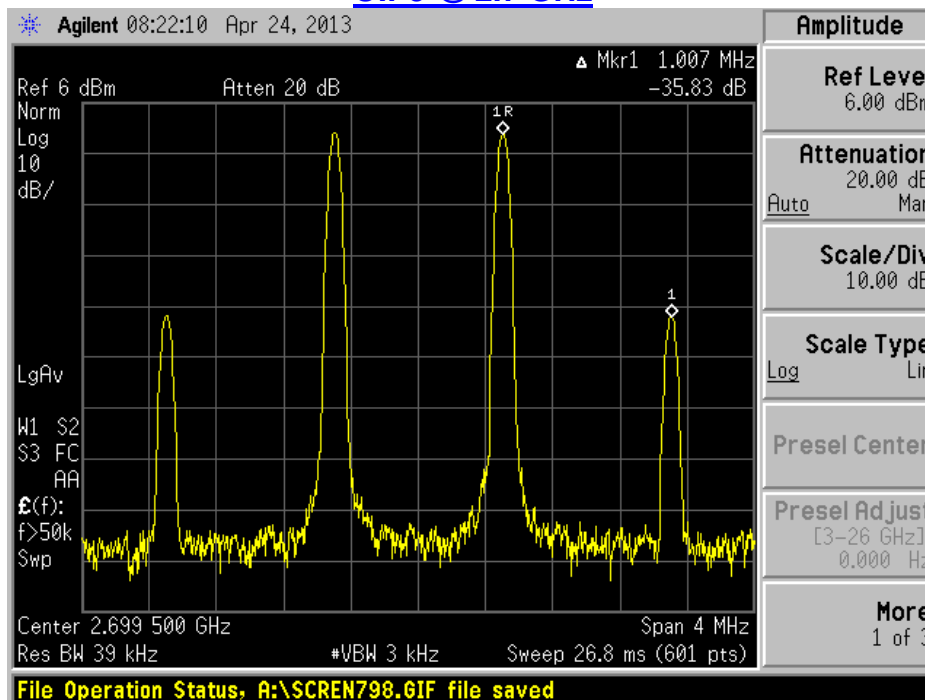
PL12997/1317

OIP3 @ 1.6GHz



$$\text{OIP3} = \text{Pout} + \text{dBc}/2 + 19.13\text{dBm} = 0 + (38.26/2)$$

OIP3 @ 2.7 GHz



$$\text{OIP3} = \text{Pout} + \text{dBc}/2 + 17.91\text{dBm} = 0 + (35.83/2)$$

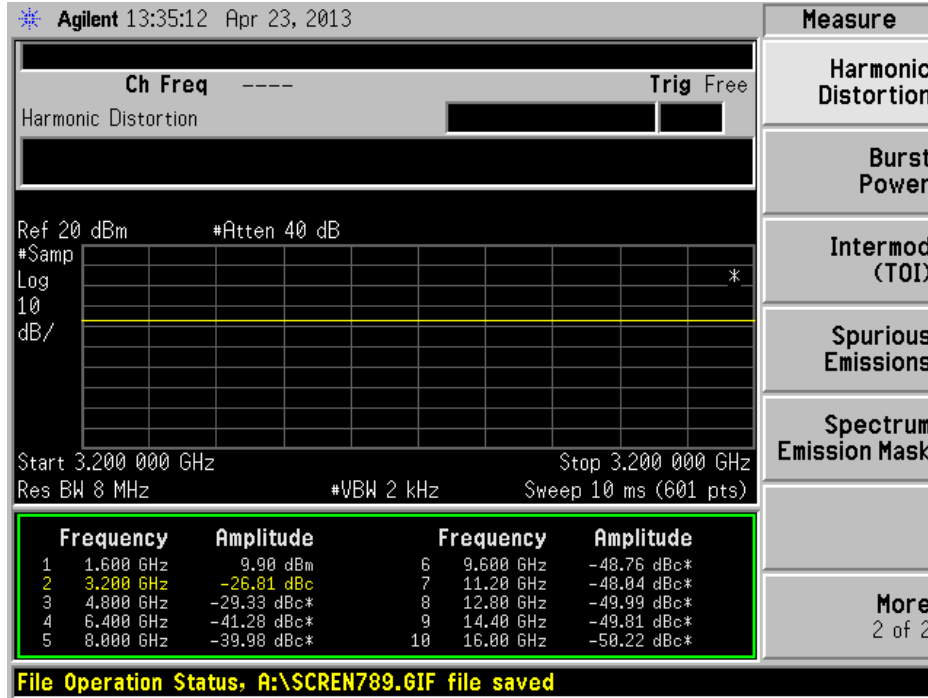


Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

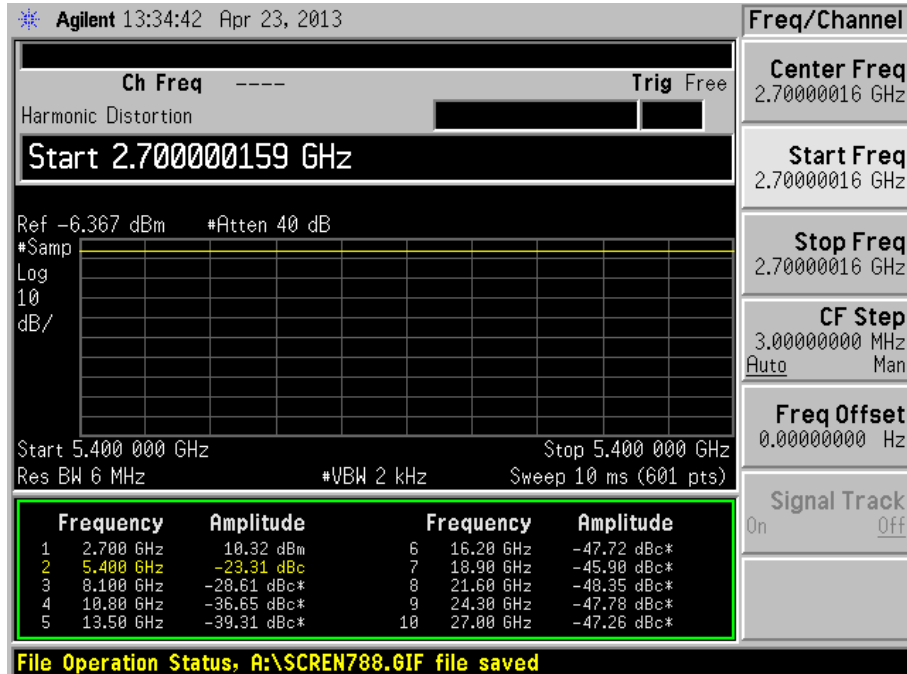
PL12997/1317

Harmonic Content

Fundamental Tone @ 1.6GHz



Fundamental Tone @ 2.7GHz



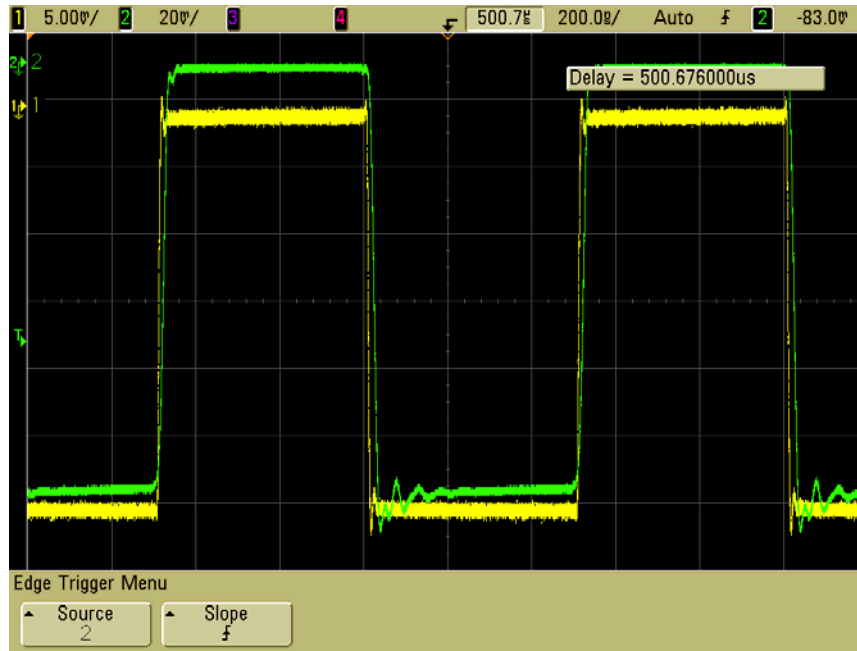


Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

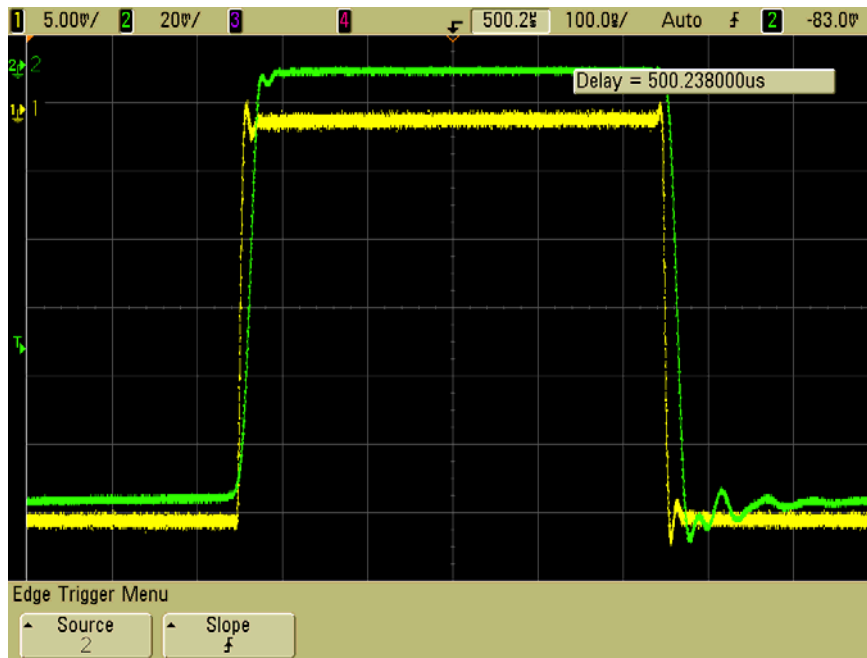
PL12997/1317

Pulse Response

Full Pulse @ 200ns per Div.



Pulse @ 100ns per Div.



Green Trace: Amplifier Output (Thru a Crystal Detector, Negative output)

Yellow Trace: CW Pulse (Thru a Diode Detector, Negative output)

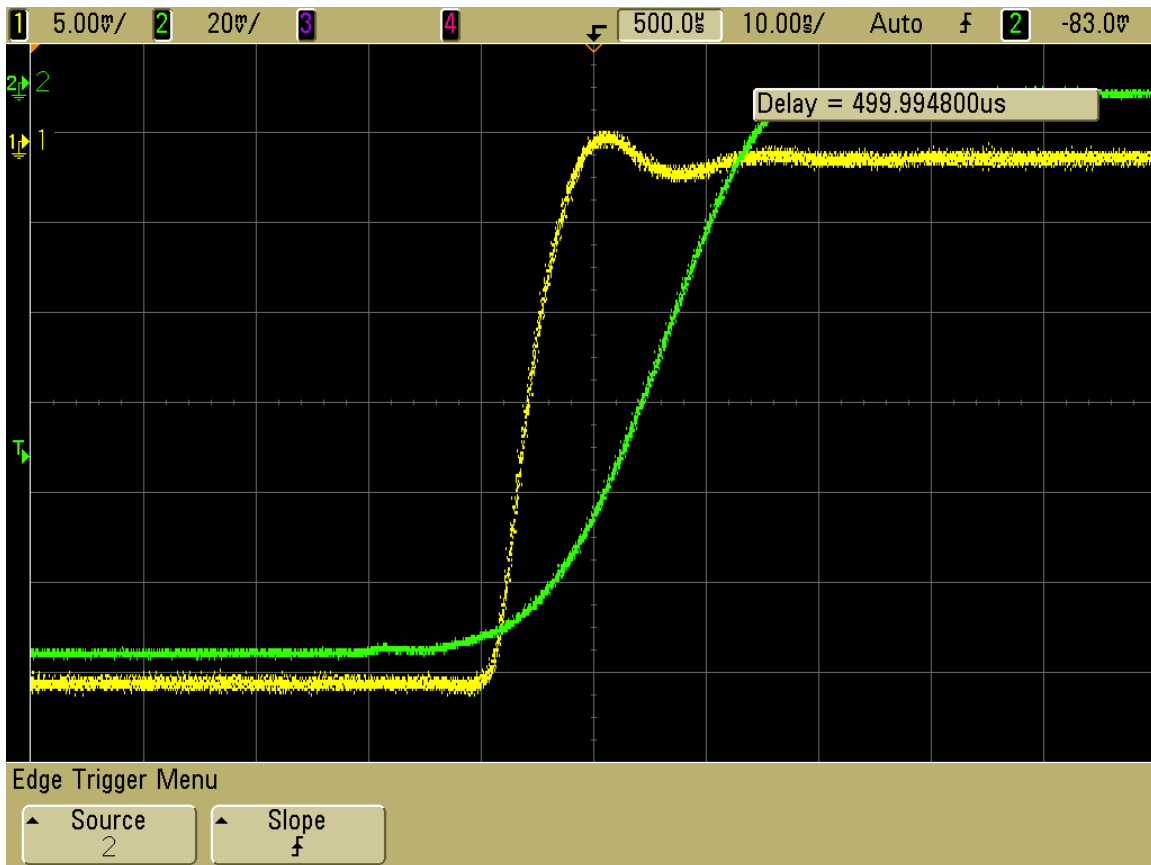


Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

PL12997/1317

Pulse Response

OFF Delay 10 ns per Div.



Green Trace: Amplifier Output (Thru a Crystal Detector, Negative output)

Yellow Trace: CW Pulse (Thru a Diode Detector, Negative output)

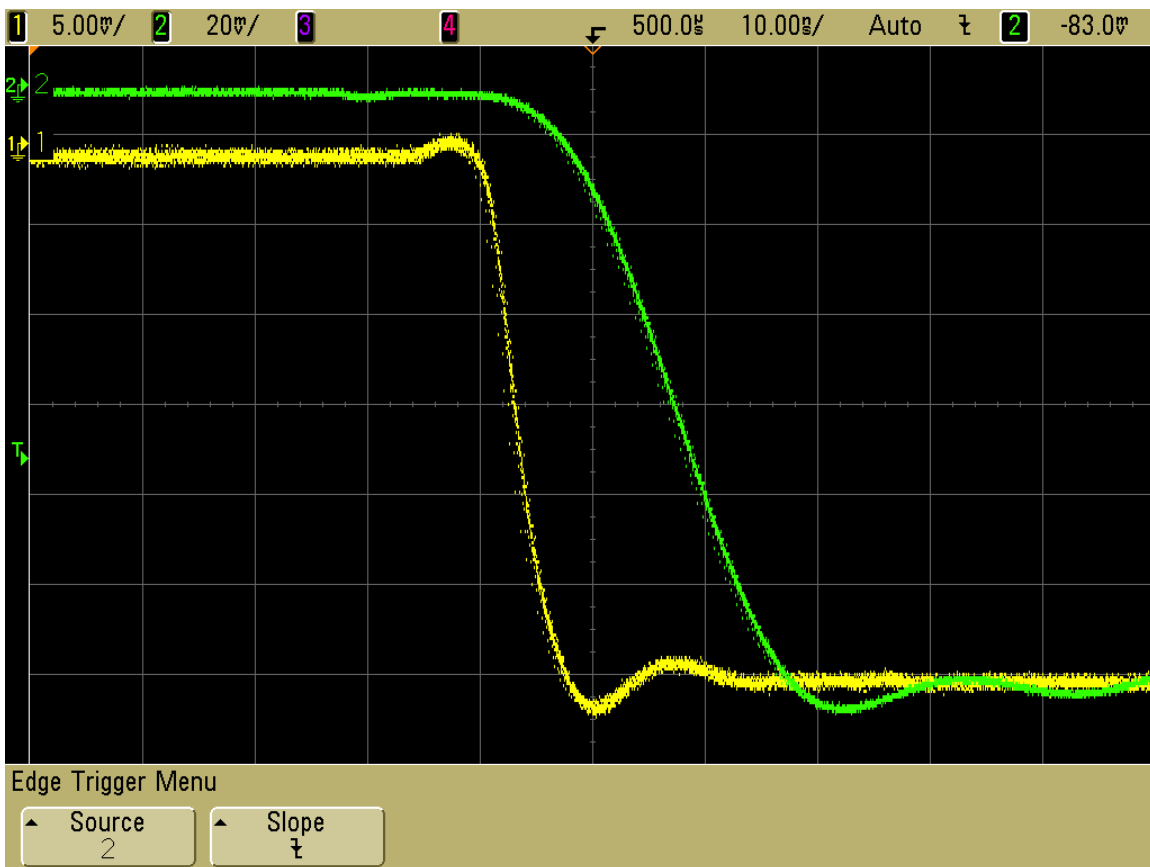


Typical Characteristics on PEC3-40-1D6G2D7G-15LM-SFF

PL12997/1317

Pulse Response

ON Delay 10 ns per Div.



Green Trace: Amplifier Output (Thru a Crystal Detector, Negative output)

Yellow Trace: CW Pulse (Thru a Diode Detector, Negative output)