

SERIAL # PL22447

TEST DATA SHEET

DATE 4-10-18

REF.	NOMENCLATURE	VALUE	TOL	UNITS	+25 ^o C
SCOPE	ESS DATA	N/A	N/A	N/A	SEE ATTACHED DATA
4.1	Dimensions	N/A	N/A	N/A	PASS / FAIL
4.2	Marking	N/A	N/A	N/A	PASS / FAIL
4.3	DC Power @+/-15VDC	+500	MAX	mA	+420
		-200		mA	-70
4.4	Input VSWR	2.0:1	MAX	1.277:1	GRAPH 1
4.4	Output VSWR	2.0:1	MAX	1.176:1	GRAPH 2
4.5	Log linearity	N/A	+/-1.5	-0.73 / +0.58 dB	Graph 3
4.5	Log slope	55.5	+/-5 %	54.6-55.6 mV/dB	Graph 3
4.5	Absolute Log Video Output Voltage @-55dBm	0.0	+/-0.075	V	-0.034 / +0.001
4.5	Average Log Video Output Voltage @ -55dBm	0.0	+/-0.05	V	-0.012
4.5	Average Log Video Output Voltage @ -10dBm	2.5	+/-0.05	V	2.465
4.5	Flatness from -55 to -45dBm	4.0	p-p	dB	1.2
4.5	Flatness from -45 to -10dBm	6.0	p-p	dB	1.2
4.6	No Signal Output Voltage	-100 to -300	N/A	mV	-145
4.7	Log Video Output Rise Time	20	MAX	ns	16.6



SIZE
A

CAGE CODE
71A34

DWG. NO.
28033900

REVISION A 1

SCALE

SHEET 16 OF 18

4.8	Pulse Overshoot @ -10dBm	138.7	MAX	mV	100
4.8	Pulse Overshoot @ -35dBm	55.5	MAX	mV	45
4.9	Pulse Fall Time and Recovery Time	50	MAX	ns	20.8
4.10	Log Video Output Pulse Delay	35	MAX	ns	26
4.11	RF Saturated Output Power	+15	MAX	dBm	11.5

TESTED BY JM

QA *[Signature]*
4/12/18



SIZE
A

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71A34

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REVISION A 1

SHEET 17 OF 18

Stimulus

Stop 4.900000000 GHz

Start

Stop

Center

Span

S11
1.000U/
1.00U SWR

S22
1.000U/
1.00U SWR

11.00

10.00

9.00

8.00

7.00

6.00

5.00

4.00

3.00

2.00

1.00

U S22

PL 22447

1:

3.088000 GHz

1.2777

> 1:

2.500000 GHz

1.1768

GRAPH 1 & 2

>Ch1: Start 2.50000 GHz

Stop 4.90000 GHz

Cont.

CH 1: S22

C 2-Port

LCL

LOG TRANSFER WITH FREQUENCY
 MODEL: SDLVA-2D5G4D9G-60-50MV
 TESTED BY: JOHNM
 DATE: 3-10-18
 SERIAL NO: #PL22447
 Test Temp: +25C

GRAPH # 3

VOS= -145MV



PLANAR MONOLITHICS INDUSTRIES
 4921 Robert J. Mathews Parkway, Suite 1
 El Dorado Hills, CA 95762
 Phone: 916-542-1401 Fax: 301-662-1731
 Email: sales@pmi-rf.com | www.pmi-

Frequency

Frequency	INTERCEPT (mV)	SLOPE (mV/dB)	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	RF Input Power (dBm)	Measured Value (mV)	Error (mV)	LINEARITY ERROR (dB)
2.5 GHz	3030	54.6	-6	277	586	877	1149	1388	1683	1955	2171	2472				
			-32	-22	14	31	30	-4	18	17	-40	-12				
			-0.59	-0.41	0.25	0.58	0.56	-0.07	0.33	0.31	-0.73	-0.22				
2.9 GHz	3026	54.7	-5	278	570	862	1139	1381	1676	1951	2172	2467				
			-24	-15	4	23	27	-5	17	19	-34	-12				
			-0.44	-0.27	0.08	0.42	0.49	-0.09	0.31	0.34	-0.62	-0.22				
3.3 GHz	3028	55.6	-34	208	523	824	1105	1364	1660	1930	2161	2458				
			-2	-38	-1	21	24	5	23	15	-33	-14				
			-0.04	-0.69	-0.03	0.38	0.43	0.09	0.41	0.26	-0.59	-0.25				
3.7 GHz	3048	55.6	-20	246	545	841	1126	1389	1677	1946	2182	2484				
			-11	-23	-2	16	23	8	18	9	-32	-8				
			-0.19	-0.41	-0.03	0.29	0.42	0.15	0.33	0.17	-0.58	-0.15				
4.1 GHz	3011	55	-17	238	525	821	1101	1373	1662	1921	2155	2450				
			-2	-22	-10	11	16	13	26	10	-31	-11				
			-0.03	-0.40	-0.18	0.20	0.28	0.23	0.48	0.19	-0.56	-0.20				
4.5 GHz	3025	54.7	0	273	556	847	1130	1401	1681	1938	2170	2465				
			-15	-15	-6	11	21	18	24	8	-34	-12				
			-0.27	-0.28	-0.11	0.21	0.38	0.33	0.45	0.14	-0.62	-0.23				
4.9 GHz	3016	54.6	1	271	552	843	1125	1400	1678	1930	2160	2460				
			-13	-16	-8	10	19	22	27	6	-37	-10				
			-0.24	-0.29	-0.14	0.19	0.36	0.40	0.49	0.11	-0.68	-0.18				
Flatness +/-dB			0.3	0.6	0.6	0.5	0.4	0.3	0.2	0.3	0.2	0.3				

Slope Avg(mv/dB)	55.0
Slope Min(mv/dB)	54.6
Slope Max(mv/dB)	55.6

V Out Min @ -55dBm	-0.034
V Out Max @ -55dBm	0.001
V Avg @ -55dBm	-0.012
V Avg @ -10dBm	2.465

Max Delta -55 to -45dBm	1.27	dB
Max Delta -45 to -10dBm	1.15	dB



CERTIFICATE OF CONFORMANCE

Martin Testing Laboratories
 Sacramento Division
 North Highlands, Ca. 95660
 Tel: 916-920-4110
 Fax: 916-920-4390

Customer Name:		Planar Monolithics Industries, Inc.		MTL MJO No.:		3769-19.1	
Address:		4921 Robert J. Mathews Pkwy, Ste. 1		MTL Company Inspection:		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
City, State, Zip:		El Dorado Hills, CA 95762		Customer P.O. No.:		PO18-0436	
Attention:		John Merriner		Source Inspection:		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Date Test Started:		04/04/18		Government Contract No.		N/A	
Date Test Completed:		04/04/18		Government Inspection:		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Cert. Authorized by:		Perry Martin, Technical Director					
Qty.	Part Name and Part Number	Serial Number	Specification Number	Para. No.	Test Title	Anomalies	
						Yes	No
3	Test Unit 8410075-1	PL22445, PL22446, PL22447	Fig 4		Random Vibration Test		X
Remarks:							

CERTIFICATE OF CONFORMANCE: We hereby certify that the above parts/materials were processed in full compliance with all the drawing specification and/or technical provisions described in the Purchase Order.

Certificate No.: 3769-19.1

Signed
MTL
 QA

 Quality Assurance Department

Issue Date: 04/04/18

This certificate shall not be reproduced except in full, without written approval of the laboratory.
 Certificate of Conformance CO-1.0 Rev 1 (6/16/2013)

SACRAMENTO DIVISION
P.O. BOX 2019
N. HIGHLANDS, CALIFORNIA 95660
TEL: 916-920-4110
FAX: 916-920-4390

GENERAL TEST DATA LOG

Customer:		Planar Monolithics Industries, Inc.		MJO:	3769-19.1
Test Specimen:		Test Unit		Date:	04/04/18
Part No.:		8410075-1	Serial No.	PL22445 – PL22447	
Test Spec.:		Fig. 4	Rev.:	Para.:	
Test Title:		Random Vibration			
DATE	TIME	LOG ENTRIES			
04/04/18	10:05	Set up vibration equipment with test units secured firmly on fixture.			
	10:25	Apply random vibration at a range of 20 – 2000 Hz, 6.071 Grms. on the Z axis for 15 min.			
	10:45	Testing completed.			

Performed by:	Perry Martin Jr	Operator(s) Initials	PJ
Test Engineer:	Perry Martin	GOV'T Q.A.R.:	N/A

MARTIN
TESTING
LABORATORIES

SACRAMENTO DIVISION
P.O. BOX 2019
N. HIGHLANDS, CA 95660
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FAX: 916-920-4390

TEST EQUIPMENT
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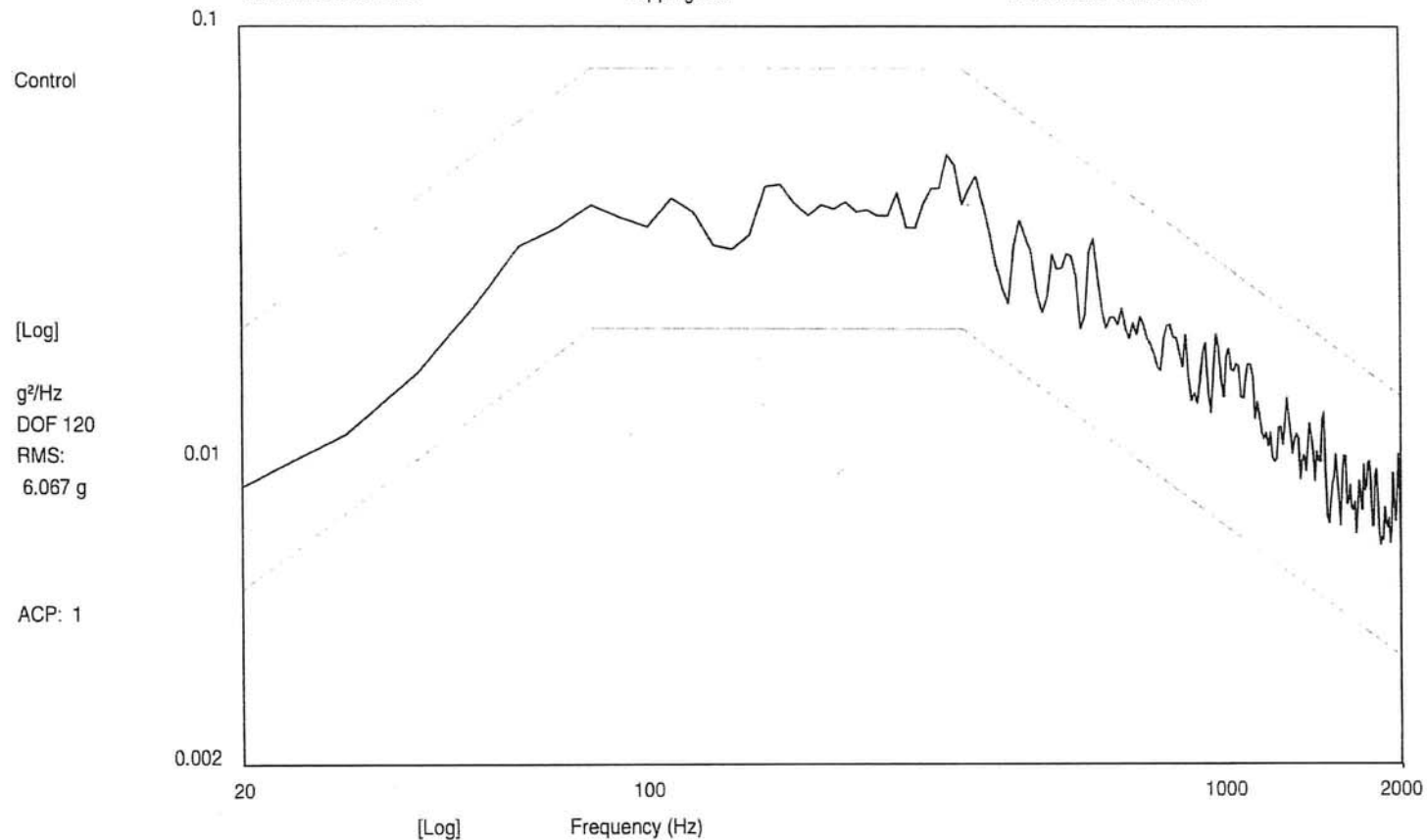
Customer:		Planar Monolithics Industries, Inc.			MJO:	3769-19.1
Test Specimen:		Test Unit			Date:	04/04/18
Part No.:		8410075-1	Serial No.	PL22445 – PL22447		
Test Spec.:		Fig. 4	Rev.:	Para.:		
Test Title:		Random Vibration Test				
In Use	Equipment	Manufacturer/ Model		MTL I.D.#	Cal. Date ¹	Cal. Due Date
X	Vibration Exciter S/N:494	Unholtz Dickie/ T-1000 32w		D3034M	Maintenance only	
X	Power Amplifier S/N:2596	Unholtz Dickie / 2XSA60		D3033M	Maintenance only	
X	Control System	Spectral Dynamics/2560		1549	10/09/17	04/09/18
X	Graphics Printer	HP Laser Jet 4		D3036M	Maintenance only	
	Accelerometer Power Supply	Unholtz Dickie / CVA-8		D3000M		
	Accelerometer Power Supply	Endevco / 2775A		D3027M		
	Accelerometer Power Supply	Endevco / 2775A		D3028M		
	Accelerometer Power Supply	Endevco / 2775A		D3029M		
	Accelerometer Power Supply	Endevco / 2775A		D3030M		
	Accelerometer Power Supply	Endevco / 2775A		D3031M		
	Accelerometer	Unholtz Dickie / 10B10T		D3021M		
	Accelerometer	Unholtz Dickie / 10B10T		D3017M		
	Accelerometer	Unholtz Dickie / 10B10T		D3019M		
X	Accelerometer	Piezotronics/PCB353B33		LW173625	08/15/17	08/15/18
	Accelerometer	Piezotronics/PCB353B15				
	Accelerometer	Endevco /2222C				
	Accelerometer	Endevco /				
	Variable Analog Filter					
	Temperature Conditioner				Maintenance only	
	Digital Thermometer					
	Torque Wrench					
	Test Fixture	MTL Sac.			Maintenance only	
	Test Fixture				Maintenance only	
	Oscilloscope				Indication only	
Accel. Label	Accel. Sens. (mV/m/s ²)	Accel. S/N	Mfr/Model	Accel. Label	Accel. Sens. (pC/g)	Accel. S/N
Control	10.29	LW173625	Piezotronics PCB353B33			
channel 2						

¹ In-service date of accelerometers

Test Level: 0.000 dB
Test Time: 000:15:00

Reference RMS: 6.071
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 10.000 Hz



10:39:25
04-Apr-2018

PMI Random 4.6.2
6 Units Z-Axis
Test Name: PMIESS.tmp