

TEST REPORT

PMI MODEL No: SDLVA-61F-80

February 15, 2004



PT-52-SDLVA-PW-0204

ENVIRONMENTAL TESTING

SAND AND DUST

SALT SPRAY

EXPLOSIVE ATMOSPHERE

**TEST REPORT PREPARED BY
BAE SYSTEMS, LANSDALE, PA**

Planar Monolithics Industries, Inc. 7311-G Grove Road, Frederick, MD 21704

Tel: 301-631-1579 Fax: 301-662-2-29

Email: sales@planarmonolithics.com Web: www.planarmonolithics.com

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BAE SYSTEMS

December 23, 2003

American Microwave Corp.
7310 Grove Road, Suite 206
Frederick, MD 21704

Attention: Mr. Dave Bruder

Test Report No. 03-267-3136

Reference: American Microwave Corp. Purchase Order No. 31100536

Gentlemen:

This report certifies the performance of Sand and Dust, Explosion, and Salt Spray testing on one SDLVA, Model SDLVA-61F-80, Serial Number PM311203, submitted by American Microwave Corp.

The testing was conducted in accordance with:

SAND & DUST: MIL-DTL-28875A, Paragraph 4.8.34 and MIL-STD-202G, Method 110A.

SALT SPRAY: MIL-DTL-28875A, Paragraph 4.8.33 and MIL-STD-202G, Method 101E.

EXPLOSION: MIL-DTL-28875A, Paragraph 4.8.35 and MIL-STD-202G, Method 109C.

TEST RESULTS: Most of the paint peeled off during the Salt Spray exposure. There was no other apparent external physical damage to the unit as a result of the tests. None of the operations caused ignition of the explosive atmosphere inside the explosion test chamber. The explosiveness of the chamber atmosphere was verified after each operation. The unit was returned to American Microwave Corp. for further evaluation.

A copy of the Test Logs and an Equipment List, are included in this report.

The testing was conducted at the BAE SYSTEMS Advanced Systems Product Testing Laboratory, Richardson Road, Lansdale, PA 19446, and completed on December 23, 2003.

Very truly yours,

BAE SYSTEMS Advanced Systems


J. F. Seltz, Test Engineer
Product Testing Laboratory

JFS:pc

Enc

Advanced Systems 305 Richardson Road Lansdale, PA 19446-1466
Telephone (215) 996-2000 Fax (215) 996-2088

978(12-28)5

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PRODUCT TESTING LABORATORY TEST LOG

JOB NO. Q3 ETC - 1000 CUSTOMER American Microware Corp PART NO. 31K0536
 TEST ENGINEER JFS TEST TECH. RR GSI/WITNESS _____
 PRODUCT DESCRIPTION (Model No., Type, Ser. No., Quantity, Etc.) 1-SDLVA
Model # 5DLVA-61F-80 9/11 PA311 203
 TEST DESCRIPTION (Vib., Shock, Etc.) Dust
 TEST PROC. MIL-DTL-28875A para 4.8.34 & 4.8.35 SH-2026 Method 110

DATE	TIME	EVENT DESCRIPTION
<u>12/19/03</u>		<u>Mating connector on unit and power output connector</u>
		<u>Place unit in chamber</u>
	<u>1000</u>	<u>start chamber, set Temp for 73°F, air</u>
		<u>Velocity 1750 FPM. Start dust Temp. 19% RH</u>
	<u>1600</u>	<u>stop dust feed, reduce air velocity to</u>
		<u>300 FPM, set Temp for 145°F</u>
<u>12/20/03</u>	<u>0800</u>	<u>chamber at 145°F 3% RH, increase air velocity</u>
		<u>to 200 FPM to 1750 FPM, start dust feed</u>
	<u>1400</u>	<u>stop chamber</u>
	<u>1430</u>	<u>Remove unit from chamber, clean unit</u>
		<u>off. No apparent deterioration of unit</u>

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PRODUCT TESTING LABORATORY TEST LOG		
JOB NO. <u>03ET6-1000</u> CUSTOMER <u>American Precision</u> P.O. NO. <u>31100026</u>		
TEST ENGINEER <u>JFS</u> TEST TECH. <u>AR</u> GSI/WITNESS _____		
PRODUCT DESCRIPTION (Model No., Type, Ser. No., Quantity, Etc.) <u>1-SDLVA</u> <u>Model #301VA-61F-80 S/N PM311 203</u>		
TEST DESCRIPTION (Vib., Shock, Etc.) <u>Salt spray</u>		
TEST PROC. <u>Mil-ITL-28875A Para 4.8.3.3 & Mil-std-202G Med 101.6a-d</u>		
DATE	TIME	EVENT/DESCRIPTION
<u>2/20/03</u>		<u>Mix up a 5% solution of sodium chloride specific gravity 1.032 pH 7.0 Heat chamber to 35°C Plating connector on unit and caps on output connector Place unit in salt chamber hung by facing cords.</u>
	<u>1500</u>	<u>start salt spray</u>
<u>2/21/03</u>	<u>1500</u>	<u>LA collectors 26 ML S.G. 1.032 pH 6.7</u>
<u>2/22/03</u>	<u>1500</u>	<u>Remove unit from chamber and wash out off with water. TA collectors 28 ML S.G. 1.035 pH 6.8 Inspection unit, most of the paint is coming off or is already off unit</u>

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PRODUCT TESTING LABORATORY TEST LOG

JOB NO. 03 ETE-1000 CUSTOMER American Microwave P.O. NO. 31100536
 TEST ENGINEER JFS TEST TECH. LR GSI/WITNESS _____
 PRODUCT DESCRIPTION (Model No., Type, Ser. No., Quantity, Etc.) 1-SDLVA
Model SDLVA-61F-80 9/11 PM311203
 TEST DESCRIPTION (Vib., Shock, Etc.) Explosion
 TEST PROC. MIL-DTL-28875A para 4.3.5.2 4/1. 2026 Mod 109

DATE	TIME	EVENT DESCRIPTION
12/21/03		Wire cut for operation, place unit in chamber and put TC on unit top. This is a sealed unit, no covers removed 2 TC's on chamber wall. Fuel will be n-hexane seal chamber up.
	1615	start chamber, set for 71°C
12/22/03	0740	unit at 70°C, chamber wall 71°C start test for 5,000ft
	0742	Inject fuel
	0745	Ran test explosion, test satisfactory. Power out up, start altitude drift
	0815	End of test for 5,000ft, Ran test explosion, test satisfactory, Power out down
	0818	start test for 20,000ft
	0822	Inject fuel
	0825	Ran test explosion, test satisfactory. Power out up and start altitude drift.
	0855	End of test for 20,000ft, Test explosion satisfactory. Power out down
	0858	start test for 40,000ft
	0912	Inject fuel
	0915	Ran test explosion, test satisfactory, Power out up, start altitude drift.
	0945	End of test for 40,000ft, Test explosion satisfactory, Unit did not cause chamber to explode. Remove unit from chamber

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EQUIPMENT LIST

<u>EQUIPMENT</u>	<u>MANUFACTURER</u>	<u>MODEL</u>	<u>BAE NO.</u>	<u>CAL. DUE</u>
SAND & DUST TEST				
Sand & Dust Chamber	Itemco	----	8943	Each Use
Dust Density Meter	Photomation	DSM-1PB	17544	04 JUN 04
Temp. and Humidity Indicator	Rotronic	HP101A-K	21160	12 SEP 04
Temp. Indicator	Doric	400	12393	02 APR 04
Air Velocity Meter	Hastings	AAB-27	19637	16 OCT 04
SALT SPRAY TEST				
Salt Spray Chamber	Singleton	24-17347	16239	Each Use
Temp. Indicator	Doric	400	21410	01 JUL 04
Hydrometer	A.H. Thomas	6025-M10	13613	09 MAY 04
Hydrometer	A.H. Thomas	6025-R10	18570	12 SEP 04
pH Meter	Fisher	800	14284	21 MAR 04
Temp. Indicator	Doric	400	99990	17 JAN 04
EXPLOSION TEST				
Explosion Chamber	Associated	EX40-ABC	8771	09 MAR 04
Temp. Indicator	Doric	400	21410	01 JUL 04
Multimeter	Fluke	75 III	21394	03 JUN 04

The above equipment was calibrated by standards which are regularly calibrated and whose accuracies are traceable to the National Institute of Standards and Technology (NIST). The calibration system and procedure maintained by BAE SYSTEMS Advanced Systems are in compliance with the requirements of ANSI/NCSL Z540-1, ISO 9002, ISO 10012-1, and MIL-STD-45662A.

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