

**SUMMARY
TEST DATA**

ON

1.4 TO 1.6 GHz

(OTHER FREQUENCY RANGES ALSO AVAILABLE)

**SUCCESSIVE
DETECTION**

**LOG
VIDEO AMPLIFIER
(SDLVA)**

**PMI MODEL NO:
◆ SDLVA-0120-70 OPTION 105F ◆
(SERIAL NUMBERS: *PM110444*)**

**DESIGNED
BY
DR. ASHOK K. GORWARA**

**TESTED
BY
BRENT BAKER**

**TEST REPORT
BY
EMILY KING**

MARCH 29, 2002

PLANAR MONOLITHICS INDUSTRIES, INC.

7311G-2 GROVE ROAD, FREDERICK, MD 21704 • USA •

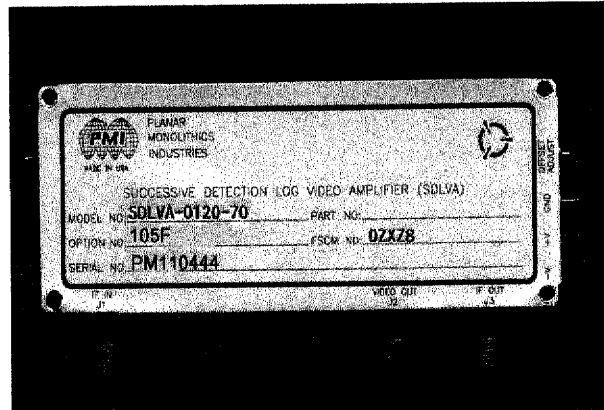
TEL: 301-631-1579 • FAX: 301-662-2029

WEBSITE: www.planarmonolithicsindustries.com, E-MAIL: sales@planarmonolithics.com

MODEL NO: SDLVA-0120-70 OPTION 105F
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)



- ◆ **FREQUENCY: 1.4 TO 1.6 GHz**
- ◆ **DYNAMIC RANGE**
- ◆ **TSS**
- ◆ **PROVIDES STUNNING PERFORMANCE & RELIABILITY IN A COMPACT PACKAGE**



● **SPECIFICATIONS:**

◆	DYNAMIC RANGE	:	>65 dB
◆	LOG LINEARITY	:	±1.2 dB max., (-60 dBm to 0 dBm), ±0.8 dB typical ±1.5 dB max., (-65 dBm to +5 dBm), ±1.2 dB typical
◆	MINIMUM LOGGING RANGE	:	-60 dBm (-65 dBm typical)
◆	MAXIMUM LOGGING RANGE	:	+5 dBm (+8 dBm typical)
◆	TANGENTIAL SENSITIVITY	:	-65 dBm minimum (-70 dBm typical)
◆	VSWR INPUT	:	1.8:1 maximum (1.5:1 typical)
◆	LIMITED IF OUTPUT	:	-16 dBm
◆	MAXIMUM RF INPUT POWER	:	+10 dBm
◆	DC POWER SUPPLY	:	+7 TO +18 VOLTS @ 100 mA (120 mA for extended dynamic range) -7 TO -18 VOLTS @ 190 mA
◆	SIZE	:	3.75" x 1.50" x 0.50"

● **ENVIRONMENTAL RATINGS:**

◆	TEMPERATURE	:	-54°C TO +85°C (OPERATING) -65°C TO +100°C (STORAGE)
◆	HUMIDITY	:	MIL-STD-202F, METHOD 103B, COND. B.
◆	SHOCK	:	MIL-STD-202F, METHOD 213B, COND. B.
◆	VIBRATION	:	MIL-STD-202F, METHOD 204D, COND. B.
◆	ALTITUDE	:	MIL-STD-202F, METHOD 105C, COND. B.
◆	TEMPERATURE CYCLE	:	MIL-STD-202F, METHOD 107D, COND. A.

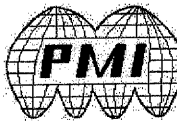
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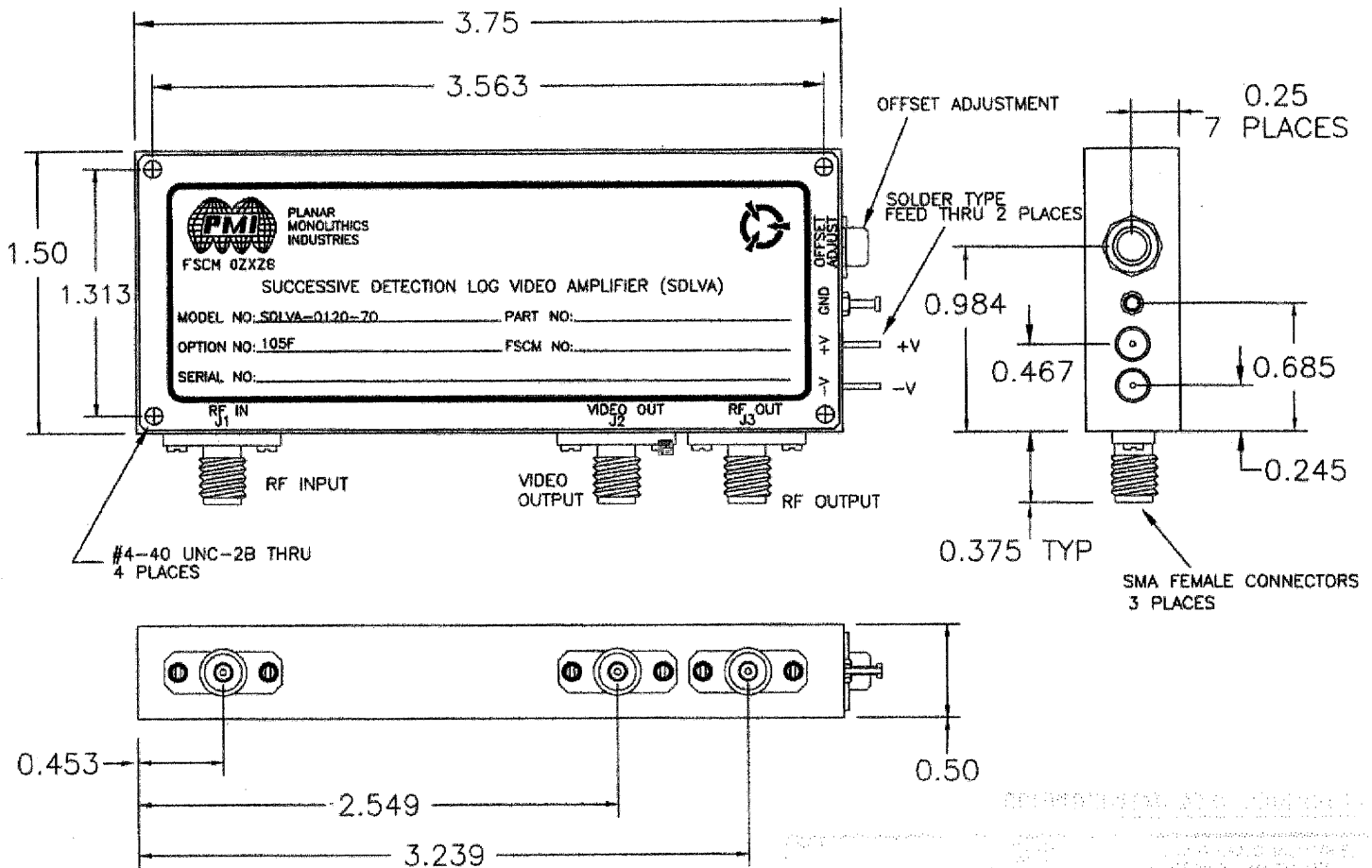
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● **MECHANICAL OUTLINE**



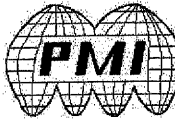
DIMENSIONS ARE IN INCHES. TOLERANCES: X.XX, ± 0.020 & X.XXX, ± 0.010

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MODEL NO: SDLVA-0120-70 OPTION 105F SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)

DESCRIPTION

THE MODEL SOLVA-0120-70 OPTION 105F SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SOLVA) OPERATES OVER THE 1.4 TO 1.6 GHz RANGE THESE UNITS HAVE A DYNAMIC RANGE OF 65 TO 70 dB, A TSS OF -67 dBm AND A NOMINAL VIDEO BANDWIDTH OF 20 MHz. FURTHERMORE, THESE UNITS ARE DESIGNED USING CUTTING EDGE GaAs TECHNOLOGY WHICH PROVIDES STUNNING PERFORMANCE AND RELIABILITY IN A COMPACT PACKAGE MAKING IT AN OPTIMUM SOLUTION FOR HIGH SPEED CHANNELIZED RECEIVER APPLICATIONS. THESE UNITS OFFER TYPICAL FAST RISE TIME ≤ 20 ns, RAPID FALL TIME ≤ 25 ns AS WELL AS SUPERIOR DELAY TIME OF 8 nsec.

THE LOG SLOPE IS 25mV/dB AND THE ACCURACY IS LESS THAN ± 1.0 dB OVER THE -60 TO 0 dBm POWER INPUT RANGE. DYNAMIC RANGE CAN BE EXTENDED TO -65/+5 WITH LOG ERROR OF ± 1.5 dB. OPTIONS ARE AVAILABLE WITH ADJUSTABLE LOGGING SLOPE AND DC OFFSETS.

GUARANTEED RISE TIMES ARE LESS THAN 25 ns AND MAXIMUM RECOVERY TIMES ARE LESS THAN 30 ns. RECOVERY TIMES AT LOWER POWER ARE FASTER.

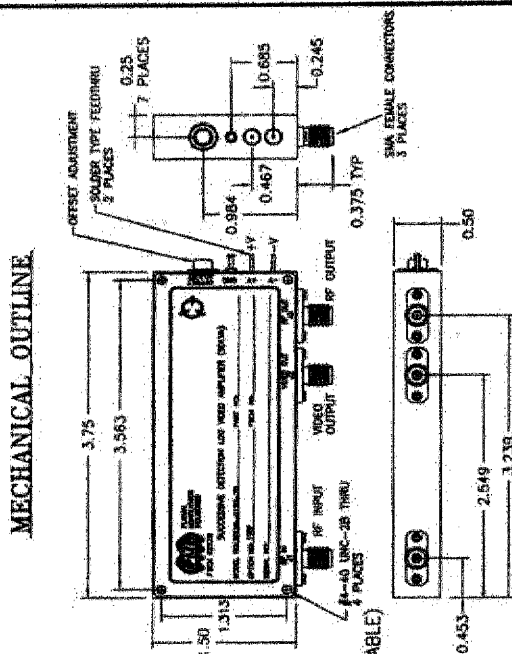
THE SOLVA-0120-70 SOLVA IS COMMERCIALY SCREENED AND CHARACTERIZED FROM -55°C TO +85°C. SIZES AVAILABLE ARE 3.75" x 1.50" x 0.50" OR TO ANY OTHER CUSTOMIZED CONFIGURATION DESIRED.

SPECIFICATIONS

FREQUENCY RANGE	1.4 TO 1.6 GHz (OTHER FREQUENCY RANGES AVAILABLE)
DYNAMIC RANGE	> 65 dB
LOG LINEARITY	± 1.2 dB MAX (-60 dBm TO 0 dBm), ± 0.8 dB TYPICAL ± 1.5 dB MAX (-65 dBm TO +5 dBm), ± 1.2 dB TYPICAL
MINIMUM LOGGING RANGE	-60 dBm
MAXIMUM LOGGING RANGE	+5 dBm (+8 dBm TYPICAL)
VSWR INPUT	1.8:1 MAXIMUM (1.5:1 TYPICAL)
TANGENTIAL SENSITIVITY	-65 dBm MINIMUM (-70 dBm TYPICAL)
LIMITED IF OUTPUT	-16 dBm
MAXIMUM RF INPUT POWER	+10 dBm
LOG VIDEO OUTPUT:	
OUTPUT COUPLING	DC
MAXIMUM OUTPUT VOLTAGE	2.7 VOLTS
RISE TIME	25 ns MAXIMUM
FALL TIME	30 ns MAXIMUM
SETTLING TIME	40 ns MAXIMUM
DC OFFSET	0.1 V NOMINAL (ADJUSTABLE)
SLOPE	25 mV/dB NOMINAL (ADJUSTABLE TO 30mV/dB)
LOG SLOPE VARIATION WITH FREQUENCY	± 0.5 mV/dB (OVER 80 MHz RF BANDWIDTH)
LOG SLOPE VARIATION WITH TEMPERATURE	± 1 mV MAXIMUM
PROPAGATION DELAY	10 ns MAXIMUM, 7 ns TYPICAL
VIDEO LOAD	100 Ω $\pm 10\%$
DC POWER SUPPLY	
+V	+7 TO +18 VOLTS @ 100mA (120 mA FOR EXTENDED DYNAMIC RANGE)
-V	-7 TO -18 VOLTS @ 190mA
SIZE	3.75" x 1.50" x 0.50"

ENVIRONMENTAL RATINGS

TEMPERATURE	-55°C TO +85°C (OPERATING) -65°C TO +100°C (STORAGE)
HUMIDITY	MIL-STD-202F, METHOD 103B COND. B
SHOCK	MIL-STD-202F, METHOD 213B COND. B
VIBRATION	MIL-STD-202F, METHOD 204D COND. B
ALTITUDE	MIL-STD-202F, METHOD 105C COND. B
TEMPERATURE CYCLE	MIL-STD-202F, METHOD 107D COND. A



- NOTES:
- 1) DIMENSIONS ARE IN INCHES
 - 2) TOLERANCES: X.XX ± 0.020
X.XXX ± 0.010
 - 3) WEIGHT: 2.75 OZ

CONFIDENTIAL AND PROPRIETARY

PART NO.		DATE	
APPROVALS	DATE	DATE	
DESIGN	9/24/02	DATE	
CHECKED	11/5/02	DATE	
TESTED		DATE	
PLANAR MONOLITHICS INDUSTRIES FREDERICK, MARYLAND		PRODUCT FEATURE SDLVA-0120-70 OPTION: 105F	
SIZE (INCHES)	3.75 x 1.50 x 0.50	SIZE (MM)	95.25 x 38.1 x 12.7
WEIGHT (OZ)	2.75	WEIGHT (G)	77.11
SCALE: N.S.		SHEET 1 of 3	

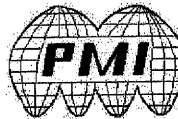
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SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)



JOB NO: P110027

SUMMARY TEST DATA
ON
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER--SDLVA

CUSTOMER: CARLTON UNIVERSITY
 JOB NO: P110027
 MODEL NO: SDLVA-0120-70 OPTION 105F
 SERIAL NO: PM110444

TESTED BY: B. B.
 TEMPERATURE: 0°C TO 60°C
 DATE: 12/05/01

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	REMARKS QA/QC
1	FREQUENCY RANGE	1.5 GHz $\pm$ 100 MHz	PASS	See ✓
2	INPUT VSWR @ -23 dBm	2.5:1 (TYPICAL)	1.22:1	✓
3	LOGGING RANGE	-60 TO 0 dBm (MIN) PLOTS ATTACHED	PASS	See Plot ✓
4	TSS (TYPICAL)	-60 dBm (TYPICAL)	-64 dBm	✓
5	LOG SLOPE ($\pm 10\%$)	25 mV/dB PLOTS ATTACHED	24.6 TO 25.9 mV/dB	✓
6	LOG LINEARITY @ -60 TO 0 dBm	± 2.0 dB (MAX) PLOTS ATTACHED	± 0.54 dB	✓
7	RISE TIME (10% to 90% POINTS)	30 nsec (MAX)	14 nSEC	✓
8	FALL TIME (90% TO 10% POINTS)	30 nsec (MAX)	18 nSEC	✓
9	LIMITED IF OUTPUT	-16 dBm (TYPICAL)	-16.5 dBm	✓
10	DC POWER @ +15V NO LOAD	100 mA (MAX)	41 mA	✓
11	DC POWER @ -15V NO LOAD	190 mA (MAX)	152 mA	✓

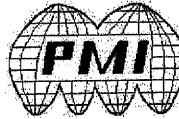
PRODUCTION MANAGER APPROVAL: Raymond Paulley DATED: 12/7/01
 QA/QC APPROVAL: INSP. BY Q1 DATED: 12/7/01

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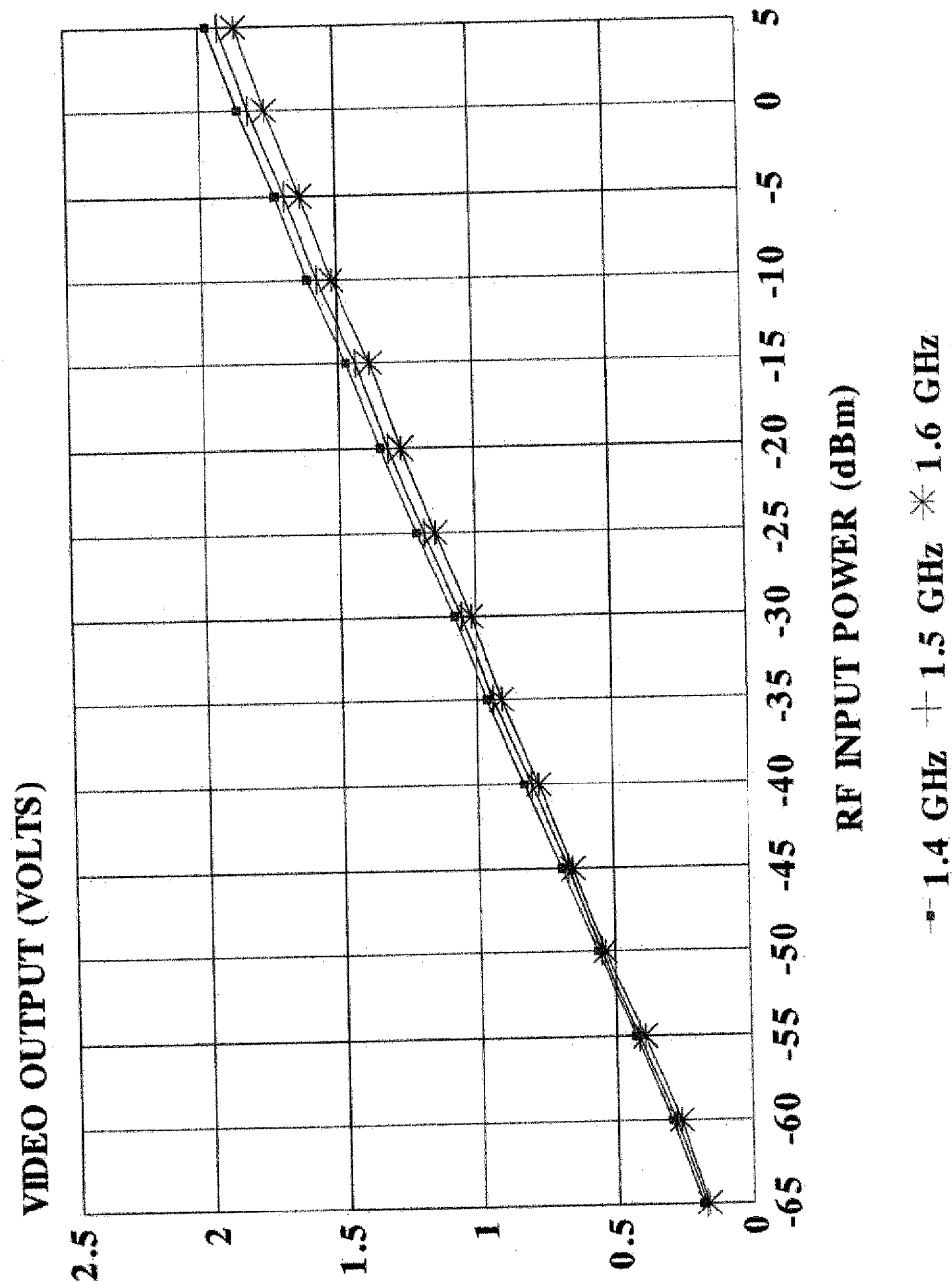
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MODEL NO: SDLVA-0120-70 OPTION 105F
SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA)

SDLVA-0120-70: SIN PM110444
LOG TRANSFER WITH FREQUENCY



+25 C, 12/05/01

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