REVISION RECORD		
REV	DESCRIPTION	DATE
0	INITIAL RELEASE	06/24/03
A	• PAGE 3, CHANGED INITIAL RATE OF RADS TO 240 RADS/SEC.	03/15/05
B	• PAGE 4, CHANGED IN BOTH PARAGRAPHS 4.2, 4.3 IN CONJUNCTION TO 3.3 CHANGED TO 3.4 AND PARAGRAPH 4.3 CHANGED 3.1.1 TO 3.1 AND 3.2.1 TO 3.1.1. CHANGED POST-IRRADIATION, VS=5V, 3V, 50Krad, IB FROM 809 TO 800 nA, PAGE 14.	01/09/08
C	• PAGE 3, PARAGRAPH 3.11.1 CHANGED VERBIAGE.	05/05/08
D	• PAGE 11, PRE-IRRADIATION DATA SHEET CHANGE TO INPUT BIAS CURRENT MATCH (CHANNEL TO CHANNEL) LIMITS FROM 120 nA to 200 nA. • PAGE 13, PRE-IRRADIATION DATA SHEET CHANGE TO INPUT BIAS CURRENT MATCH (CHANNEL TO CHANNEL) LIMITS FROM 100 nA to 180 nA.	02/10/09
E	• PAGE 13, TABLE II, ELECTRICAL CHARACTERISTICS, (PRE-IRRADIATION) V_S= 3V, 5V, DELETED 3V. PARAMETER **A_{VOL}**, DELETED V_S = 3V, V_O = 75mV TO 2.8V, R_1 = 10k. PARAMETER **CMRR**, COMMON MODE REJECTION RATIO - DELETED V_S = 3V, V_{CM} = V^+ TO V^-; DELETED V_S = 3V, V_{CM} = 0.5V TO 2.5V. PARAMETER **CMRR**, MATCH (CHANNEL-TO-CHANNEL) - DELETED V_S = 3V, V_{CM} = V^+ TO V^-; DELETED V_S = 3V, V_{CM} = 0.5V TO 2.5V. PARAMETER **I_{SC}**, DELETED V_S = 3V. • PAGE 14, TABLE IIA, ELECTRICAL CHARACTERISTICS, (PRE-IRRADIATION) V_S= 3V, 5V, DELETED 3V.	02/25/10
F **G**	Removed & replace figure 1 package drawing on pg 6 **To change Linear to Analog and remove Source**	12/13/16 **3/23/21**

CAUTION: ELECTROSTATIC DISCHARGE SENSITIVE PART

REVISION	PAGE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
INDEX	REVISION	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**		
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	ORIG		
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	ENGR		
	MFG		
	CM		
	QA		
	PROG		
APPLICATION	FUNCT	SIGNOFFS	DATE

ANALOG DEVICES INC.

TITLE: **MICROCIRCUIT, LINEAR, RH1499M 10MHz, 6V / µs, QUAD RAIL-TO-RAIL INPUT AND OUTPUT PRECISION C-LOAD OP AMP**

SIZE	CAGE CODE	DRAWING NUMBER	REV
	64155	**05-08-5199**	**G**

CONTRACT:

FOR OFFICIAL USE ONLY

1.0 SCOPE:

1.1 This specification defines the performance and test requirements for a microcircuit processed to a space level manufacturing flow.

2.0 APPLICABLE DOCUMENTS:

2.1 Government Specifications and Standards: the following documents listed in the Department of Defense Index of Specifications and Standards, of the issue in effect on the date of solicitation, form a part of this specification to the extent specified herein.

SPECIFICATIONS:

MIL-PRF-38535 Integrated Circuits (Microcircuits) Manufacturing, General Specification for

MIL-STD-883 Test Method and Procedures for Microcircuits

MIL-STD-1835 Microcircuits Case Outlines

2.2 Order of Precedence: In the event of a conflict between the documents referenced herein and the contents of this specification, the order of precedence shall be this specification, MIL-PRF-38535 and other referenced specifications.

3.0 REQUIREMENTS:

3.1 General Description: This specification details the requirements for the RH1499M, 10MHz, 6V / µs, Quad Rail-to-Rail Input and Output Precision C-Load Op Amp processed to space level manufacturing flow.

3.2 Part Number: **RH1499MW (Glass Sealed Ceramic Flatpak, 14 LEAD)**

3.3 Part Marking Includes:

a. LTC Logo

b. LTC Part Number (See Paragraph 3.2)

c. Date Code

d. Serial Number

e. ESD Identifier per MIL-PRF-38535, Appendix A

3.4 The Absolute Maximum Ratings: Note 1/

Total Supply Voltage (V^+ to V^-)	36V
Input Current	±10mA
Output Short-Circuit Duration (Note 2)	Continuous
Operating Temperature Range	−55°C to 125°C
Specified Temperature Range	−55°C to 125°C
Junction Temperature	150°C
Storage Temperature Range	−65°C to 150°C
Lead Temperature (Soldering, 10 sec)	300°C

Note 1/: Absolute Maximum Rating are those values beyond which the life of a device may be impaired.

3.5 Electrostatic discharge sensitivity, ESDS, shall be Class 2.

3.6 Electrical Performance Characteristics: The electrical performance characteristics shall be as specified in Table I (Pre-Irradiation), Table IA (Post-Irradiation), Table II (Pre-Irradiation), and Table IIA (Post-Irradiation).

3.7 Electrical Test Requirements: Screening requirements shall be in accordance with 4.1 herein, MIL-STD-883, Method 5004, and as specified in Table IV herein.

3.8 Burn-In Requirement: Static Burn-In, Figure 4; Dynamic Burn-In, Figure 5.

3.9 Delta Limit Requirement: Delta limit parameters are specified in Table III herein, are calculated after each burn-in, and the delta rejects are included in the PDA calculation.

3.10 Design, Construction, and Physical Dimensions: Detail design, construction, physical dimensions, and electrical requirements shall be specified herein.

3.10.1 Mechanical / Packaging Requirements: Case outlines and dimensions are in accordance with Figure 1.

3.10.2 Terminal Connections: The terminal connections shall be as specified in Figure 2.

3.10.3 Lead Material and Finish: The lead material and finish for Device shall be Alloy 42 and the lead finish is hot solder dip (Finish letter A) in accordance with MIL-PRF-38535.

3.11 Radiation Hardness Assurance (RHA):

3.11.1 The manufacturer shall perform a lot sample test as an internal process monitor for total dose radiation tolerance. The sample test is performed with MIL-STD-883 TM1019 Condition A as a guideline.

3.11.2 For guaranteed radiation performance to MIL-STD-883, Method 1019, total dose irradiation, the manufacturer will provide certified RAD testing and report through an independent test laboratory when required as a customer purchase order line item.

3.11.3 Total dose bias circuit is specified in Figure 3.

3.12 Wafer Lot Acceptance: Wafer lot acceptance shall be in accordance with MIL-PRF-38535, Appendix A, except for the following: Topside glassivation thickness shall be a minimum of 4KÅ.

3.13 Wafer Lot Acceptance Report: SEM is performed per MIL-STD-883, Method 2018 and copies of SEM photographs shall be supplied with the Wafer Lot Acceptance Report as part of a Space Data Pack when specified as a customer purchase order line item.

4.0 VERIFICATION (QUALITY ASSURANCE PROVISIONS)

4.1 Quality Assurance Provisions: Quality Assurance provisions shall be in accordance with MIL-PRF-38535. Analog Devices is a QML certified company and all Rad Hard candidates are assembled on qualified Class S manufacturing lines.

4.2 Sampling and Inspection: Sampling and Inspection shall be in accordance with MIL-STD-883, Method 5005 with QML allowed and TRB approved deviations in conjunction with paragraphs 3.1.1, 3.2.1, and 3.4 of the test method.

4.3 Screening: Screening requirements shall be in accordance with MIL-STD-883, Method 5004 with QML allowed and TRB approved deviations in conjunction with paragraphs 3.1, 3.1.1, and 3.4 of the test method. Electrical testing shall be as specified in Table IV herein.

4.3.1 Analysis of catastrophic (open/short) failures from burn-in will be conducted only when a lot fails the burn-in or re-burn-in PDA requirements.

4.4 Quality Conformance Inspection: Quality conformance inspection shall be in accordance with 4.2 and 4.3 herein and as follows:

4.4.1 Group A Inspection: Group A inspection shall be performed in accordance with 4.1 herein, per MIL-STD-883, Method 5005, and specified in Table IV herein.

4.4.2 Group B Inspection: When purchased, a full Group B is performed on an inspection lot. As a minimum, Subgroup B2 (Resistance to Solvents / Mark Permanency) and Subgroup B3 (Solderability) are performed prior to the first shipment from any inspection lot and Attributes provided when a Full Space Data Pack is ordered. Subgroup B5 (Operating Life) is performed on each wafer lot. This subgroup may or may not be from devices built in the same package style as the current inspection lot. Attributes and variables data for this subgroup will be provided upon request at no charge.

4.4.2.1

Group B, Subgroup 2c = 10%	Group B, Subgroup 5 = *5% (*per wafer or inspection lot whichever is the larger quantity)
Group B, Subgroup 3 = 10%	
Group B, Subgroup 4 = 5%	Group B, subgroup 6 = 15%

4.4.2.2 All footnotes pertaining to Table IIa in MIL-STD-883, Method 5005 apply. The quantity (accept number) of all other subgroups are per MIL-STD-883, Method 5005, Table IIa.

4.4.3 Group D Inspection: When purchased, a full Group D is performed on an inspection lot. As a minimum, periodic full Group D sampling is performed on each package family for each assembly location every 26 weeks. A generic Group D Summary is provided when a full Space Data Pack is ordered.

4.4.3.1 Group D, Subgroups 3, 4 and 5 = 15% each (Sample Size Series).

4.4.3.2 All footnotes pertaining to Table IV in MIL-STD-883, Method 5005 apply. The quantity (accept number) or sample number and accept number of all other subgroups are per MIL-STD-883, Method 5005, Table IV.

:

4.5 Deliverable Data: Deliverable data that will ship with devices when a Space Data Pack is ordered:

4.5.1 Lot Serial Number Sheets identifying all devices accepted through final inspection by serial number.

4.5.2 100% attributes (completed lot specific traveler; includes Group A Summary)

4.5.3 Burn-In Variables Data and Deltas (if applicable)

4.5.4 Group B2, B3, and B5 Attributes (Variables data, if performed on lot shipping)

4.5.5 Generic Group D data (4.4.3 herein)

4.5.6 SEM photographs (3.13 herein)

4.5.7 Wafer Lot Acceptance Report (3.13 herein)

4.5.8 X-Ray Negatives and Radiographic Report

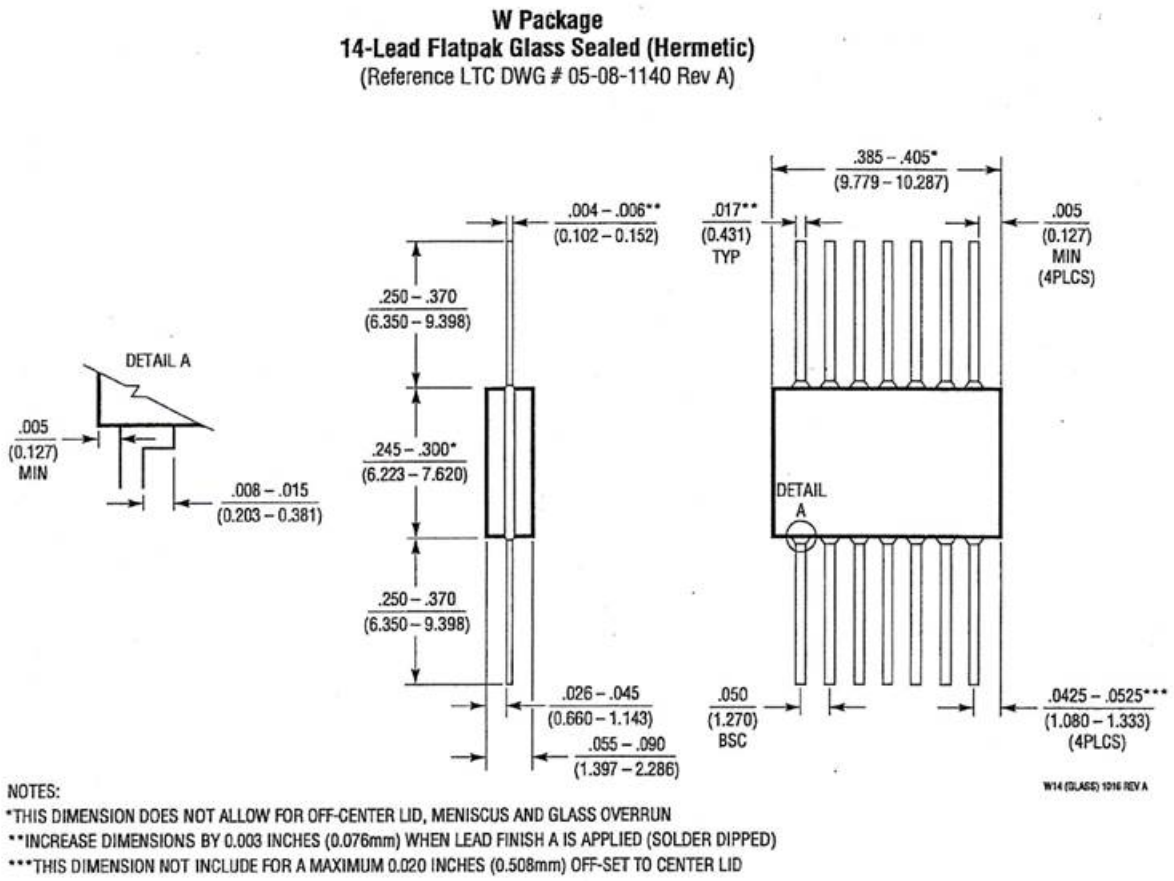
4.5.9 A copy of outside test laboratory radiation report if ordered

4.5.10 Certificate of Conformance certifying that the devices meet all the requirements of this specification and have successfully completed the mandatory tests and inspections herein.

Note: Items 4.5.1 and 4.5.10 will be delivered as a minimum, with each shipment. This is noted on the Purchase Order Review Form as “No Charge Data”.

5.0 Packaging Requirements: Packaging shall be in accordance with Appendix A of MIL-PRF-38535. All devices shall be packaged in conductive material or packaged in anti-static material with an external conductive field shielding barrier.

(W) Glass Sealed Flatpak / 14 LEADS CASE OUTLINE



NOTES:
*THIS DIMENSION DOES NOT ALLOW FOR OFF-CENTER LID, MENISCUS AND GLASS OVERRUN
**INCREASE DIMENSIONS BY 0.003 INCHES (0.076mm) WHEN LEAD FINISH A IS APPLIED (SOLDER DIPPED)
***THIS DIMENSION NOT INCLUDE FOR A MAXIMUM 0.020 INCHES (0.508mm) OFF-SET TO CENTER LID

FIGURE 1

TERMINAL CONNECTIONS

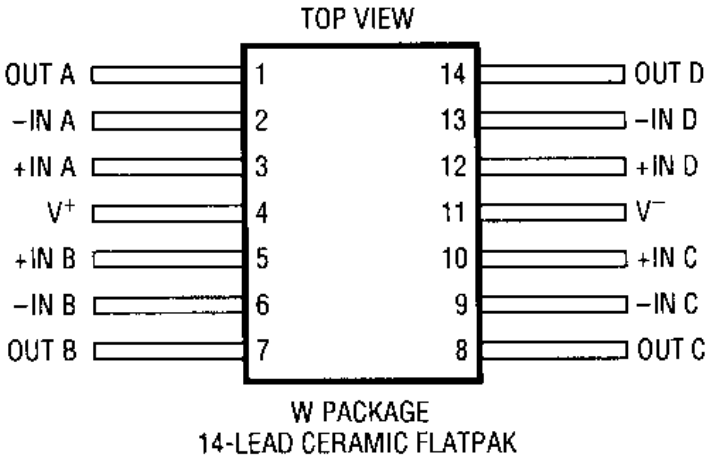


FIGURE 2

TOTAL DOSE BIAS CIRCUIT

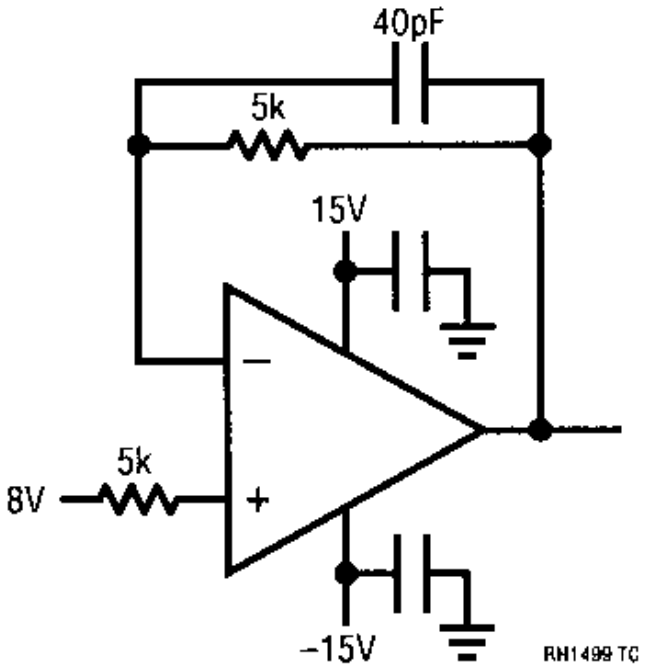
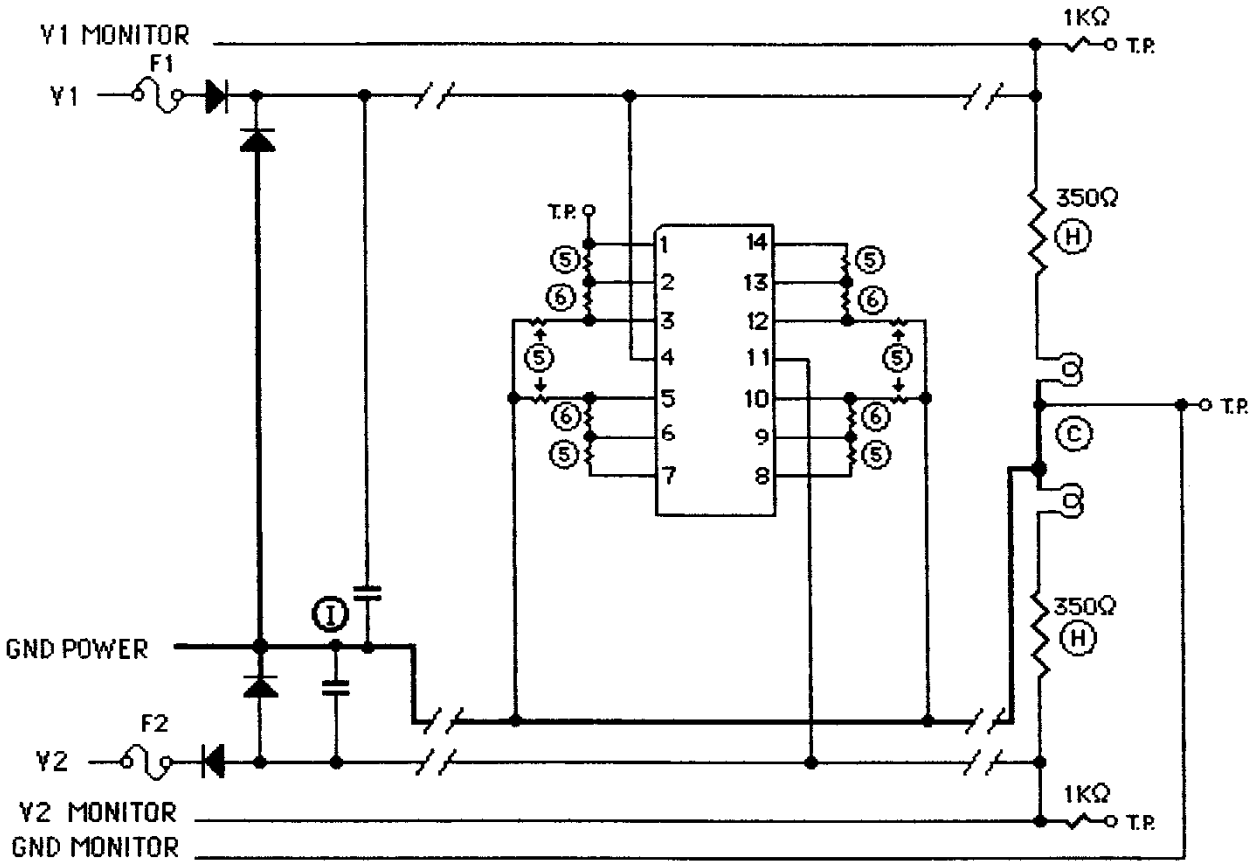
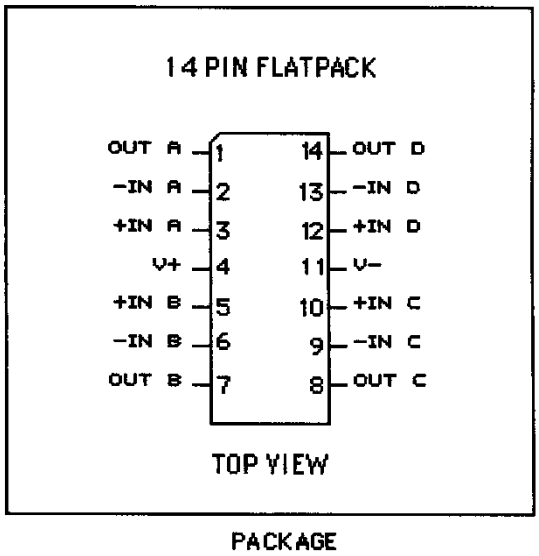


FIGURE 3

STATIC BURN-IN CIRCUIT
Glass Sealed Flatpak / 14 LEADS



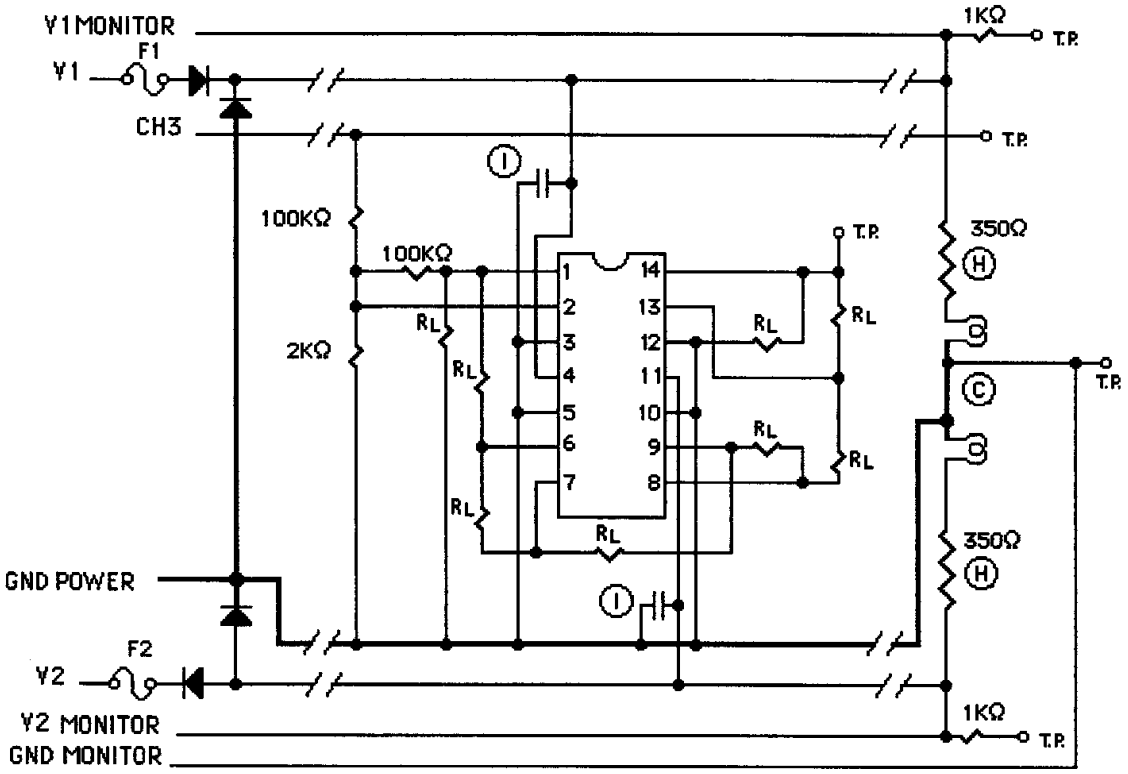
NOTES:
1. Unless otherwise specified, component tolerances shall be per military specification.
2. Tj = +169 ° C maximum.
3. Ta = +100 ° C .
4. Burn-in Voltages: V1 = +16V to +17V
   V2 = -16V to -17V
5. Current used per device:
   V+ = 10mA plus 50mA per board for lamp.
   V- = 10mA plus 50mA per board for lamps.
   Gnd = 7mA plus 100mA per board for lamps.
6. USE ALL OTHER INFORMATION ON # 04-06-0353



PACKAGE

FIGURE 4

DYNAMIC BURN-IN CIRCUIT
Glass Sealed Flatpak / 14 LEADS



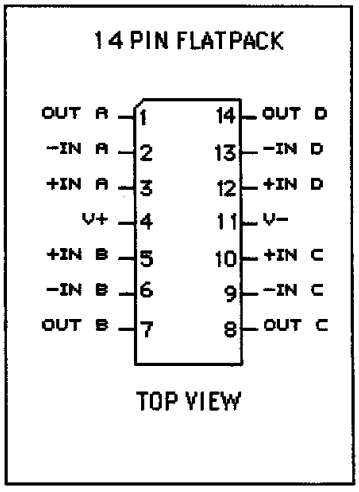
NOTES:

1. Unless otherwise specified, component tolerances shall be per military specification.
2. Tj = 169°C maximum.
3. Ta = 100 °C.
4. Burn-in voltages: V1 = +16V to +17V
   V2 = -16V to -17V

CH. 3 = Square wave, +1.0V to +1.1V
Gnd.
-1.0V to -1.1V

Frequency, 4.5hz(222ms) to 5.5hz(182ms)

5. RL = 715Ω



PACKAGE

FIGURE 5

TABLE I: ELECTRICAL CHARACTERISTICS (PRE-IRRADIATION)

(Preirradiation) V_S = ±15V, V_{CM} = V_{OUT} = 0V, unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	NOTES	T_A = 25°C MIN	T_A = 25°C TYP	T_A = 25°C MAX	SUB-GROUP	−55°C ≤ T_A ≤ 125°C MIN	−55°C ≤ T_A ≤ 125°C TYP	−55°C ≤ T_A ≤ 125°C MAX	SUB-GROUP	UNITS
V_{OS}	Input Offset Voltage	V_{CM} = V^+, V^-			200	800						µV
		V_{CM} = 14.5V, −14.5V					1		350	1100	2, 3	µV
	Input Offset Voltage Match (Channel-to-Channel) (Note 3)	V_{CM} = V^+ to V^-	3		250	1400						µV
		V_{CM} = 14.5V to −14.5V							450	1800		µV
I_B	Input Bias Current	V_{CM} = V^+		0	250	715						nA
		V_{CM} = 14.5V					1		500	1200	2, 3	nA
		V_{CM} = V^-		−715	−250	0						nA
		V_{CM} = −14.5V						−1200	−500	0		nA
	Input Bias Current Match (Channel-to-Channel) (Note 3)	V_{CM} = V^+, V^-	3	0	12	200						nA
		V_{CM} = 14.5V, −14.5V							50	400		nA
I_{OS}	Input Offset Current	V_{CM} = V^+, V^-			6	70						nA
		V_{CM} = 14.5V, −14.5V					1		40	300	2, 3	nA
	Input Voltage Range			−15		15		−14.5		14.5		V
	Input Noise Voltage	0.1Hz to 10Hz			400							nV_{P-P}
e_n	Input Noise Voltage Density	f = 1kHz			12							$nV/\sqrt{Hz}$
i_n	Input Noise Current Density	f = 1kHz			0.3							$pA/\sqrt{Hz}$
A_{VOL}	Large-Signal Voltage Gain	V_O = −14.5V to 14.5V, R_L = 10k		1000	5200		4	60	400		5, 6	V/mV
		V_O = −10V to 10V, R_L = 2k		500	2300			25	100			V/mV
CMRR	Common Mode Rejection Ratio	V_{CM} = V^+ to V^-		90	102		1				2, 3	dB
		V_{CM} = 14.5V to −14.5V						86	102			dB
	CMRR Match (Channel-to-Channel) (Note 3)	V_{CM} = V^+ to V^-	3	84	103							dB
		V_{CM} = 14.5V to −14.5V						80	100			dB
PSRR	Power Supply Rejection Ratio	V_S = ±2V to ±16V		90	110		1	88	100		2, 3	dB
	PSRR Match (Channel-to-Channel) (Note 3)	V_S = ±2V to ±16V	3	83	110			82	100			dB
V_{OL}	Output Voltage Swing (Low) (Note 4)	No Load			18	30			25	75		mV
		I_{SINK} = 1mA	4		50	100	4		70	150	5, 6	mV
		I_{SINK} = 10mA			230	500						mV
		I_{SINK} = 5mA							180	500		mV
V_{OH}	Output Voltage Swing (High) (Note 4)	No Load			2.5	10			5	25		mV
		I_{SINK} = 1mA	4		75	150	4		100	250	5, 6	mV
		I_{SINK} = 10mA			420	800						mV
		I_{SINK} = 5mA							300	800		mV
I_{SC}	Short-Circuit Current			±15	±30		1	±7.5	±12		2, 3	mA
I_S	Supply Current per Amp				1.8	2.5	1		2.2	3	2, 3	mA
GBW	Gain-Bandwidth Product	f = 100kHz		6.8	10.5			5.8	8.5			MHz
SR	Slew Rate	A_V = −1, R_L = 2k, V_O = ±10V, Measure at V_O = ±5V		3.5	6		4	2.2	4		5, 6	V/µs

NOTES FOR THIS TABLE ARE ON PAGE 14.

TABLE IA: ELECTRICAL CHARACTERISTICS (POST-IRRADIATION)

(Post-Irradiation) V_S = ±15V, V_{CM} = 0V, T_A = 25°C, unless otherwise noted

SYMBOL	PARAMETER	CONDITIONS	NOTES	10Krad(Si) MIN	10Krad(Si) MAX	20Krad(Si) MIN	20Krad(Si) MAX	50Krad(Si) MIN	50Krad(Si) MAX	100Krad(Si) MIN	100Krad(Si) MAX	200Krad(Si) MIN	200Krad(Si) MAX	UNITS
V_{OS}	Input Offset Voltage	V_{CM} = V^+, V^-			950		950		950		950		950	µV
I_B	Input Bias Current	V_{CM} = V^+, V^-			765		815		865		915		965	nA
I_{OS}	Input Offset Current	V_{CM} = V^+, V^-			100		100		100		100		100	nA
	Input Voltage Range			V^-	V^+	V^-	V^+	V^-	V^+	V^-	V^+	V^-	V^+	V
A_{VOL}	Large-Signal Voltage Gain	V_O = −14.5V to 14.5V, R1 = 10k		500		500		500		500		500		V/mV
		V_O = −10V to 10V, R1 = 2k		250		250		250		250		250		V/mV
CMRR	Common Mode Rejection Ratio	V_{CM} = V^+ to V^-		86		86		86		86		86		dB
	CMRR Match (Channel-to-Channel)	V_{CM} = V^+ to V^-	3	83		83		83		83		83		dB
PSRR	Power Supply Rejection Ratio	V_S = ±2V to ±16V		90		90		90		90		90		dB
	PSRR Match (Channel-to-Channel)	V_S = ±2V to ±16V	3	83		83		83		83		83		dB
V_{OUT}	Output Voltage Swing Low	No Load			60		60		60		60		60	mV
		I_{SINK} = 1mA	4		100		100		100		100		100	mV
		I_{SINK} = 10mA			500		500		500		500		500	mV
	Output Voltage Swing High	No Load			20		20		20		20		20	mV
		I_{SINK} = 1mA	4		150		150		150		150		150	mV
		I_{SINK} = 10mA			800		800		800		800		800	mV
I_{SC}	Short-Circuit Current			±10		±10		±10		±10		±10		mA
I_S	Supply Current				2.5		2.5		2.5		2.5		2.5	mA
GBW	Gain-Bandwidth Product	f = 100kHz		4.5		4.5		4.5		4.5		4.5		MHz
SR	Slew Rate	A_V = −1, R_L = 10k, V_O = ±10V, Measure at V_O = ±5V		3		3		3		3		3		V/µs

NOTES FOR THIS TABLE ARE ON PAGE 14.

TABLE II: ELECTRICAL CHARACTERISTICS (PRE-IRRADIATION)

(Preirradiation) V_S = 5V; V_{CM} = V_{OUT} = half supply, unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	NOTES	T_A = 25°C MIN	T_A = 25°C TYP	T_A = 25°C MAX	SUB-GROUP	−55°C ≤ T_A ≤ 125°C MIN	−55°C ≤ T_A ≤ 125°C TYP	−55°C ≤ T_A ≤ 125°C MAX	SUB-GROUP	UNITS
V_{OS}	Input Offset Voltage	V_{CM} = V^+, V^- V_{CM} = V^+ − 0.5V, V^- + 0.5V			150	800	1		300	1100	2, 3	µV µV
	Input Offset Voltage Match (Channel-to-Channel) (Note 3)	V_{CM} = V^+ to V^- V_{CM} = V^+ − 0.5V, V^- + 0.5V	3		200	1400			350	1800		µV µV
I_B	Input Bias Current	V_{CM} = V^+ V_{CM} = V^+ − 0.5V V_{CM} = V^- V_{CM} = V^- + 0.5V		0 −650 	250 −250 	650 0 	1	0 −1100	450 −450	1100 0	2, 3	nA nA nA nA
	Input Bias Current Match (Channel-to-Channel) (Note 3)	V_{CM} = V^+, V^- V_{CM} = V^+ − 0.5V, V^- + 0.5V	3	0	10	180		0	30	400		nA nA
I_{OS}	Input Offset Current	V_{CM} = V^+, V^- V_{CM} = V^+ − 0.5V, V^- + 0.5V			5	65	1		15	300	2, 3	nA nA
	Input Voltage Range			V^-		V^+		V^- + 0.5V		V^+ − 0.5V		V
	Input Noise Voltage	0.1Hz to 10Hz			400							nV_{P-P}
e_n	Input Noise Voltage Density	f = 1kHz			12							$nV/\sqrt{Hz}$
i_n	Input Noise Current Density	f = 1kHz			0.3							$pA/\sqrt{Hz}$
C_{IN}	Input Capacitance				5							pF
A_{VOL}	Large-Signal Voltage Gain	V_S = 5V, V_O = 75mV to 4.8V, R_L = 10k		600	3800		4	60	210		5, 6	V/mV
CMRR	Common Mode Rejection Ratio	V_S = 5V, V_{CM} = V^+ to V^- V_S = 5V, V_{CM} = 0.5V to 4.5V		76	90			68	85			dB dB
	CMRR Match (Channel-to-Channel) (Note 3)	V_S = 5V, V_{CM} = V^+ to V^- V_S = 5V, V_{CM} = 0.5V to 4.5V	3	75	91			66				dB dB
PSRR	Power Supply Rejection Ratio	V_S = 4.5V to 12V, V_{CM} = V_O = 0.5V		88	105		1	86	104		2, 3	dB
	PSRR Match (Channel-to-Channel) (Note 3)	V_S = 4.5V to 12V, V_{CM} = V_O = 0.5V	3	82	120			80	118			dB
V_{OL}	Output Voltage Swing (Low) (Note 4)	No Load I_{SINK} = 1mA I_{SINK} = 2.5mA	4		14 50 90	30 100 200	4		25 65 110	75 150 220	5, 6	mV mV mV
V_{OH}	Output Voltage Swing (High) (Note 4)	No Load I_{SOURCE} = 1mA I_{SOURCE} = 2.5mA	4		2.5 70 140	10 150 250	4		5 100 180	25 250 300	5, 6	mV mV mV
I_{SC}	Short-Circuit Current	V_S = 5V		±12.5	24		1	±5	±10		2, 3	mA
I_S	Supply Current per Amp				1.7	2.2	1		2	2.7	2, 3	mA
GBW	Gain-Bandwidth Product	V_S = 5V, f = 100kHz		6.8	10.5			5.8	8.5			MHz
SR	Slew Rate	V_S = ±2.5V, A_V = −1, R_L = 10k, V_O = ±2V, Measure at V_O = ±1V		2.6	4.5		4	2	3.6		5, 6	V/µs

NOTES FOR THIS TABLE ARE ON PAGE 14.

TABLE IIA: ELECTRICAL CHARACTERISTICS (POST-IRRADIATION)

(Postirradiation) V_S = 5V; V_{CM} = half supply, T_A = 25°C, unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	NOTES	10Krad (Si) MIN	10Krad (Si) MAX	20Krad (Si) MIN	20Krad (Si) MAX	50Krad (Si) MIN	50Krad (Si) MAX	100Krad (Si) MIN	100Krad (Si) MAX	200Krad (Si) MIN	200Krad (Si) MAX	UNITS
V_{OS}	Input Offset Voltage	V_{CM} = V^+, V^-			950		950		950		950		950	µV
I_B	Input Bias Current	V_{CM} = V^+, V^-			700		750		800		850		900	nA
I_{OS}	Input Offset Current	V_{CM} = V^+, V^-			65		65		65		65		65	nA
	Input Voltage Range			V^-	V^+	V^-	V^+	V^-	V^+	V^-	V^+	V^-	V^+	V
A_{VOL}	Large-Signal Voltage Gain	V_O = 75mV to V^+ – 0.2V R1 = 10k		300		300		300		300		300		V/mV
CMRR	Common Mode Rejection Ratio	V_{CM} = V^+ to V^-		70		70		70		70		70		dB
	CMRR Match (Channel-to-Channel)	V_{CM} = V^+ to V^-	3	70		70		70		70		70		dB
PSRR	Power Supply Rejection Ratio	V_S = 4.5V to 12V, V_{CM} = V_O = 0.5V		88		88		88		88		88		dB
	PSRR Match (Channel-to-Channel)	V_S = 4.5V to 12V, V_{CM} = V_O = 0.5V	3	82		82		82		82		82		dB
V_{OUT}	Output Voltage Swing Low	No Load I_{SINK} = 1mA I_{SINK} = 2.5mA	4		60 100 200		60 100 200		60 100 200		60 100 200		60 100 200	mV mV mV
	Output Voltage Swing High	No Load I_{SOURCE} = 1mA I_{SOURCE} = 2.5mA	4		20 150 250		20 150 250		20 150 250		20 150 250		20 150 250	mV mV mV
I_{SC}	Short-Circuit Current			±8		±8		±8		±8		±8		mA
I_S	Supply Current				2.2		2.2		2.2		2.2		2.2	mA
SR	Slew Rate	V_S = ±2.5V, A_V = –1, R_L = 10k, V_O = ±2V, Measure at V_O = ±1V		2		2		2		2		2		V/µs

Note 1: Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Exposure to any Absolute Maximum Rating condition for extended periods may affect device reliability and lifetime.

Note 2: A heat sink may be required to keep the junction temperature below this absolute maximum rating when the output is shorted indefinitely.

Note 3: Matching parameters are the difference between amplifiers A and D and between B and C.

Note 4: Output voltage swings are measured between the output and power supply rails.

Special Note: Note 1 pertains only to the Absolute Maximum Ratings on page 2 of this specification.

TABLE III: POST BURN-IN ENDPOINTS AND DELTA LIMIT REQUIREMENTS

T_A = 25°C, V_S = ± 15V

	ENDPOINT LIMIT		DELTA		
PARAMETER	MIN	MAX	MIN	MAX	UNITS
Vos	-800	+800	-250	+250	µV
IB	-715	+715	-350	+350	nA
Ios	-70	+70	-50	+50	nA

TABLE IV: ELECTRICAL TEST REQUIREMENTS

MIL-STD-883 TEST REQUIREMENTS	SUBGROUP
FINAL ELECTRICAL TEST REQUIREMENTS (METHOD 5004)	1*, 2, 3, 4 ,5, 6
GROUP A TEST REQUIREMENTS (METHOD 5005)	1, 2, 3, 4 ,5 ,6
GROUP B AND D FOR CLASS S ENDPOINT ELECTRICAL PARAMETERS (METHOD 5005)	1, 2, 3

*PDA APPLIES TO SUBGROUP 1.

PDA TEST NOTE: The PDA is specified as 5% based on failures from Group A, Subgroup 1, tests after cooldown as the final electrical test in accordance with method 5004 of MIL-STD-883. The verified failures of Group A, Subgroup 1 and delta rejects after burn-in divided by the total number of devices submitted for burn-in in that lot shall be used to determine the percent for the lot.