NOTICE OF REVISION (NOR)

THIS REVISION DESCRIBED BELOW HAS BEEN AUTHORIZED FOR THE DOCUMENT LISTED.

1. DATE *(YYMMDD)* 96-11-26

Form Approved OMB No. 0704-0188

2. PROCURING ACTIVITY NO.

3. DODAAC

4. ORIGINATOR	b. ADDRESS *(Street, City, State, Zip Code)*	5. CAGE CODE	6. NOR NO.
a. TYPED NAME *(First, Middle Initial, Last)*	Defense Supply Center Columbus 3990 East Broad Street Columbus, OH 43216-5000	7. CAGE CODE 67268	8. DOCUMENT NO. **5962-87771**

9. TITLE OF DOCUMENT	10. REVISION LETTER		11. ECP NO.
MICROCIRCUIT, LINEAR, QUAD LOW OFFSET, LOW POWER, OPERATIONAL AMPLIFIER, MONOLITHIC SILICON	a. CURRENT B	b. NEW C	5962-87771ECP-1

12. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES
All

13. DESCRIPTION OF REVISION

Sheet 1: **Revisions ltr column; add "C".**
Revisions description column; add "Changes in accordance with NOR 5962-R035-97".
Revisions date column; add "96-11-26".
Revision level block; change from "B" to "C".
Rev status of sheets; for sheets 1, 2, 3, 7, 10 and 11, change from "A" to "C"; for sheet 6 change from "B" to "C".

Sheet 2: **Paragraph 1.2.4; under "Outline letter" add "K"; under "Case outline" add "F-6 (24-lead, .640" x .420" x .090"), flat pack".**
Revision level block; delete "A" and substitute "C".

Sheet 3: **Paragraph 1.3; under "Thermal resistance, junction-to-ambient (θ_{JA})" add "Case K - - - - - - - - - - 91°C/W". For case outline "3" delete "70°C/W" and substitute "110°C/W".**
Revision level block; delete "A" and substitute "C".

Sheet 6: **Table I, slew rate test; in the conditions column delete "V_{IN} = ±5.0 V" and "measured at V_{OUT} = ±2.5 V".**
Revision level block; delete "B" and substitute "C".

Sheet 7: **Figure 1, add terminal connections for case outline "K"; pin 1 is "OUT A", pin 2 is "-IN A", pin 3 is "NC", pin 4 is "NC", pin 5 is "+IN A", pin 6 is "V_{CC+}", pin 7 is "+IN B", pin 8 is "NC", pin 9 is "NC", pin 10 is "NC", pin 11 is "-IN B", pin 12 is "OUT B", pin 13 is "OUT C", pin 14 is "-IN C", pin 15 is "NC", pin 16 is "NC", pin 17 is "NC", pin 18 is "+IN C", pin 19 is "V_{CC-}", pin 20 is "+IN D", pin 21 is "NC", pin 22 is "NC", pin 23 is "-IN D", and pin 24 is "OUT D".**
Revision level block; delete "A" and substitute "C".

14. THIS SECTION FOR GOVERNMENT USE ONLY

a. *(X one)*		
	X	(1) Existing document supplemented by the NOR may be used in manufacture.
		(2) Revised document must be received before manufacturer may incorporate this change.
		(3) Custodian of master document shall make above revision and furnish revised document.

b. ACTIVITY AUTHORIZED TO APPROVE CHANGE FOR GOVERNMENT	c. TYPED NAME *(First, Middle Initial, Last)*
DSCC-VAS	RAYMOND MONNIN

d. TITLE	e. SIGNATURE	f. DATE SIGNED *(YYMMDD)*
Chief, Microelectronics Team	RAYMOND MONNIN	96-11-26

15a. ACTIVITY ACCOMPLISHING REVISION	b. REVISION COMPLETED *(Signature)*	c. DATE SIGNED *(YYMMDD)*
DSCC-VAS	RAJESH PITHADIA	96-11-26

13. DESCRIPTION OF REVISION - CONTINUED

Sheet 10: Table IIA, group C end-point electrical parameters; for device class V add "1,2,3,4,5,6,7,8 2/".
Revision level block; delete "A" and substitute "C".

Sheet 11: Table IIC, title; delete "Group C end-point electrical parameters." and substitute "240 hour burn-in and group C end-point electrical parameters."

Revision level block; delete "A" and substitute "C".

NOTICE OF REVISION (NOR)

THIS REVISION DESCRIBED BELOW HAS BEEN AUTHORIZED FOR THE DOCUMENT LISTED.

1. DATE (YYMMDD) 94-12-21

Form Approved OMB No. 0704-0188

2. PROCURING ACTIVITY NO.

3. DODAAC

4. ORIGINATOR

a. TYPED NAME *(First, Middle Initial, Last)*

b. ADDRESS *(Street, City, State, Zip Code)*
Defense Electronics Supply Center
1507 Wilmington Pike
Dayton, OH 45444-5270

5. CAGE CODE 67268

7. CAGE CODE 67268

6. NOR NO. 5962-R049-95

8. DOCUMENT NO. **5962-87771**

9. TITLE OF DOCUMENT
MICROCIRCUIT, QUAD LOW OFFSET, LOW POWER, OPERATIONAL AMPLIFIER, MONOLITHIC SILICON

10. REVISION LETTER

a. CURRENT A

b. NEW B

11. ECP NO. 5962-87771ECP-1

12. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES
All

13. DESCRIPTION OF REVISION

Sheet 1: Revisions ltr column; add "B".
Revisions description column; add "Changes in accordance with NOR 5962-R049-95".
Revisions date column; add "94-12-21"
Revision level block; delete "A" and substitute "B".
Rev status of sheets; for sheets 1, 6, delete "A" and substitute "B".

Sheet 6: TABLE I. Slew rate test Delete and substitute the following;

Slew rate	SR	V_{IN} = ±5.0 V, A_V = +1, measured at V_{OUT} = ±2.5 V T_A = +25°C	7	0.05	V/µs

Revision level block; delete "A" and substitute "B".

14. THIS SECTION FOR GOVERNMENT USE ONLY

a. *(X one)*		
	X	(1) Existing document supplemented by the NOR may be used in manufacture.
		(2) Revised document must be received before manufacturer may incorporate this change.
		(3) Custodian of master document shall make above revision and furnish revised document.

b. ACTIVITY AUTHORIZED TO APPROVE CHANGE FOR GOVERNMENT
DESC-ELDS

c. TYPED NAME *(First, Middle Initial, Last)*
MICHAEL A. FRYE

d. TITLE
Chief, Microelectronics Branch

e. SIGNATURE
MICHAEL A. FRYE

f. DATE SIGNED (YYMMDD) 94-12-21

15a. ACTIVITY ACCOMPLISHING REVISION
DESC-ELDS

b. REVISION COMPLETED *(Signature)*
RICK C. OFFICER

c. DATE SIGNED (YYMMDD) 94-12-21

REVISIONS

LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	Change to one part-one part number format. Add table III. Editorial changes throughout.	91-12-11	M. A. FRYE

REV																				
SHEET																				
REV	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
SHEET	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			

REV STATUS OF SHEETS	REV	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

PMIC N/A

STANDARDIZED MILITARY DRAWING

THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

AMSC N/A

PREPARED BY
RICK C. OFFICER

CHECKED BY
CHARLES E. BESORE

APPROVED BY
MICHAEL A. FRYE

DRAWING APPROVAL DATE
87-12-11

REVISION LEVEL
A

DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

MICROCIRCUIT, LINEAR, QUAD LOW OFFSET, LOW POWER, OPERATIONAL AMPLIFIER, MONOLITHIC SILICON

SIZE	CAGE CODE	
A	**67268**	**5962-87771**

SHEET 1 OF 31

DESC FORM 193
JUL 91

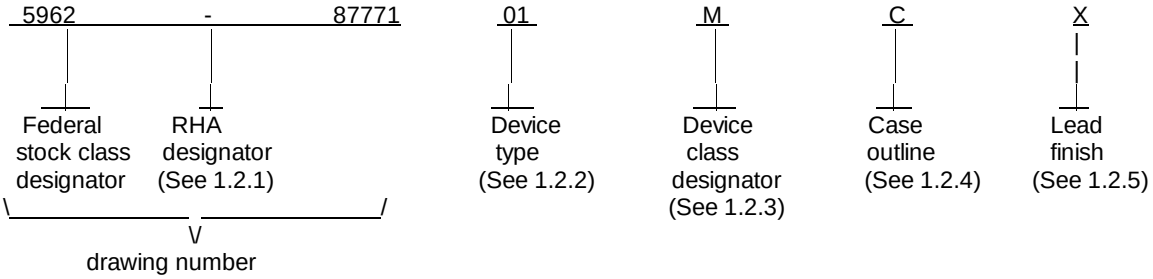
5962-E1842

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

1. SCOPE

1.1 Scope. This drawing forms a part of a one part - one part number documentation system (see 6.6 herein). Two product assurance classes consisting of military high reliability (device classes B, Q, and M) and space application (device classes S and V), and a choice of case outlines and lead finishes are available and are reflected in the Part or Identifying Number (PIN). Device class M microcircuits represent non-JAN class B microcircuits in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices". When available, a choice of radiation hardness assurance (RHA) levels are reflected in the PIN.

1.2 PIN. The PIN shall be as shown in the following example:



1.2.1 Radiation hardness assurance (RHA) designator. Device classes M, B, and S RHA marked devices shall meet the MIL-M-38510 specified RHA levels and shall be marked with the appropriate RHA designator. Device classes Q and V RHA marked devices shall meet the MIL-I-38535 specified RHA levels and shall be marked with the appropriate RHA designator. A dash (-) indicates a non-RHA device.

1.2.2 Device type(s). The device type(s) shall identify the circuit function as follows:

Device type	Generic number	Circuit function
01	OP400A	Quad low offset low power operational amplifier

1.2.3 Device class designator. The device class designator shall be a single letter identifying the product assurance level as follows:

Device class	Device requirements documentation
M	Vendor self-certification to the requirements for non-JAN class B microcircuits in accordance with 1.2.1 of MIL-STD-883
B or S	Certification and qualification to MIL-M-38510
Q or V	Certification and qualification to MIL-I-38535

1.2.4 Case outline(s). For device classes M, B, and S, case outline(s) shall meet the requirements in appendix C of MIL-M-38510 and as listed below. For device classes Q and V, case outline(s) shall meet the requirements of MIL-I-38535, appendix C of MIL-M-38510, and as listed below.

Outline letter	Case outline
C	D-1 (14-lead, .785" x .310" x .200"), dual-in-line package
3	C-4 (28-terminal, .460" x .460" x .100"), square chip carrier package

1.2.5 Lead finish. The lead finish shall be as specified in MIL-M-38510 for classes M, B, and S or MIL-I-38535 for classes Q and V. Finish letter "X" shall not be marked on the microcircuit or its packaging. The "X" designation is for use in specifications when lead finishes A, B, and C are considered acceptable and interchangeable without preference.

1.3 Absolute maximum ratings. 1/

Supply voltage (V_{CC}) ---------- ±20 V
Differential input voltage ---------- ±30 V
Input voltage ---------- Supply voltage
Output short-circuit duration ---------- Continuous
Power dissipation (P_D) ---------- 800 mW
Storage temperature range ---------- -65°C to +150°C
Lead temperature range (soldering, 60 seconds) ---------- +300°C
Junction temperature (T_J) ---------- -65°C to +150°C
Thermal resistance, junction-to-case (Θ_{JC}) ---------- See MIL-M-38510, appendix C
Thermal resistance, junction-to-ambient (Θ_{JA}):
Case C ---------- 91°C/W
Case 3 ---------- 70°C/W

1.4 Recommended operating conditions.

Ambient operating temperature range (T_A) ---------- -55°C to +125°C
Supply voltage (V_{CC}) ---------- ±15 V

2. APPLICABLE DOCUMENTS

2.1 Government specifications, standards, bulletin, and handbook. Unless otherwise specified, the following specifications, standards, bulletin, and handbook of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this drawing to the extent specified herein.

SPECIFICATIONS

MILITARY

MIL-M-38510 - Microcircuits, General Specification for.
MIL-I-38535 - Integrated Circuits, Manufacturing, General Specification for.

STANDARDS

MILITARY

MIL-STD-480 - Configuration Control-Engineering Changes, Deviations and Waivers.
MIL-STD-883 - Test Methods and Procedures for Microelectronics.

BULLETIN

MILITARY

MIL-BUL-103 - List of Standardized Military Drawings (SMD's).

HANDBOOK

MILITARY

MIL-HDBK-780 - Standardized Military Drawings.

(Copies of the specifications, standards, bulletin, and handbook required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

1/ Stresses above the absolute maximum rating may cause permanent damage to the device. Extended operation at the maximum levels may degrade performance and affect reliability.

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing shall take precedence.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements for device class M shall be in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices" and as specified herein. The individual item requirements for device classes B and S shall be in accordance with MIL-M-38510 and as specified herein. This is a fully characterized detail specification and is suitable for qualification of device classes B and S to the requirements of MIL-M-38510. The individual item requirements for device classes Q and V shall be in accordance with MIL-I-38535, the device manufacturer's Quality Management (QM) plan, and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510 for device classes M, B, and S and MIL-I-38535 for device classes Q and V and herein.

3.2.1 Case outline(s). The case outline(s) shall be in accordance with 1.2.4 herein.

3.2.2 Terminal connections. The terminal connections shall be as specified on figure 1.

3.2.3 Schematic diagram. The schematic diagram shall be as specified on figure 2.

3.3 Electrical performance characteristics and postirradiation parameter limits. Unless otherwise specified herein, the electrical performance characteristics and postirradiation parameter limits are as specified in table I and shall apply over the full ambient operating temperature range.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table IIA. The electrical tests for each subgroup are defined in tables I and III.

3.5 Marking. The part shall be marked with the PIN listed in 1.2 herein. Marking for device class M shall be in accordance with MIL-STD-883 (see 3.1 herein). In addition, the manufacturer's PIN may also be marked as listed in MIL-BUL-103. Marking for device classes B and S shall be in accordance with MIL-M-38510. Marking for device classes Q and V shall be in accordance with MIL-I-38535.

3.5.1 Certification/compliance mark. The compliance mark for device class M shall be a "C" as required in MIL-STD-883 (see 3.1 herein). The certification mark for device classes B and S shall be a "J" or "JAN" as required in MIL-M-38510. The certification mark for device classes Q and V shall be a "QML" as required in MIL-I-38535.

3.6 Certificate of compliance. For device class M, a certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-BUL-103 (see 6.7.3 herein). For device classes Q and V, a certificate of compliance shall be required from a QML-38535 listed manufacturer in order to supply to the requirements of this drawing (see 6.7.2 herein). The certificate of compliance submitted to DESC-ECS prior to listing as an approved source of supply for this drawing shall affirm that the manufacturer's product meets, for device class M the requirements of MIL-STD-883 (see 3.1 herein), or for device classes Q and V, the requirements of MIL-I-38535 and the requirements herein.

3.7 Certificate of conformance. A certificate of conformance as required for device class M in MIL-STD-883 (see 3.1 herein) or device classes B and S in MIL-M-38510 or for device classes Q and V in MIL-I-38535 shall be provided with each lot of microcircuits delivered to this drawing.

3.8 Notification of change for device class M. For device class M, notification to DESC-ECS of change of product (see 6.2 herein) involving devices acquired to this drawing is required for any change as defined in MIL-STD-480.

3.9 Verification and review for device class M. For device class M, DESC, DESC's agent, and the acquiring activity retain the option to review the manufacturer's facility and applicable required documentation. Offshore documentation shall be made available onshore at the option of the reviewer.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55^{\circ}C \le T_A \le +125^{\circ}C$ $V_{CC} = \pm 15$ V unless otherwise specified	Group A subgroups	Limits		Unit
				Min	Max	
Input offset voltage	V_{IO}		1	-150	+150	µV
			2, 3	-270	+270	
Input offset current	I_{IO}	$V_{CM} = 0$ V	1	-1.0	+1.0	nA
			2, 3	-2.5	+2.5	
Input bias current	$\pm I_{IB}$	$V_{CM} = 0$ V	1	-3.0	+3.0	nA
			2, 3	-5.0	+5.0	
Input voltage range	$+I_{VR}$	1/	1, 2, 3	+12		V
	$-I_{VR}$				-12	
Common mode rejection ratio	CMRR	$V_{CM} = \pm 12$ V	1	120		dB
			2, 3	115		
Power supply rejection ratio	PSRR	$V_{CC} = \pm 3$ V and ± 18 V	1		1.8	µV/V
			2, 3		3.2	
Supply current	I_{SY}	No load 2/	1		2.9	mA
			2, 3		3.1	
Large signal voltage gain	A_{VS}	$V_{OUT} = \pm 10$ V, $R_L = 2$ kΩ	4	2000		V/mV
			5, 6	1000		
		$V_{OUT} = \pm 10$ V, $R_L = 10$ kΩ	4	5000		
			5, 6	3000		
Output voltage swing	$+V_{OP}$	$R_L = 2$ kΩ	4, 5, 6	+11		V
		$R_L = 10$ kΩ		+12		
	$-V_{OP}$	$R_L = 2$ kΩ	4, 5, 6		-11	
		$R_L = 10$ kΩ			-12	

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions $-55°C \le T_A \le +125°C$ $V_{CC} = \pm 15$ V unless otherwise specified	Group A subgroups	Limits		Unit
				Min	Max	
Input noise voltage density	e_N	f_O = 10 Hz, T_A = +25°C 3/	7		22	$nV/\sqrt{Hz}$
		f_O = 1000 Hz, T_A = +25°C 3/			22	
Input noise voltage	e_{NT}	1 Hz to 100 Hz, T_A = +25°C	7		438	nV_{RMS}
Slew rate	SR	$V_{IN} = \pm 0.5$ V, AV = +1, T_A = +25°C, measured at V_{OUT} = ±0.25 V	7	0.1		V/µs
Average input offset voltage drift	TC_{VIO}	See table III.	8		1.2	µV/°C

1/ IVR guaranteed by CMRR test.
2/ I_{SY} limit = total all four amplifiers.
3/ e_N at f_o = 10 Hz and f_o = 1000 Hz is guaranteed by e_{NT} test.

3.10 Microcircuit group assignment for device classes M, B, and S. Device classes M, B, and S devices covered by this drawing shall be in microcircuit group number 49 (see MIL-M-38510, appendix E).

3.11 Serialization for device class S. All device class S devices shall be serialized in accordance with MIL-M-38510.

3.12 Supersession and substitution. PIN substitution information shall be as specified in the appendix.

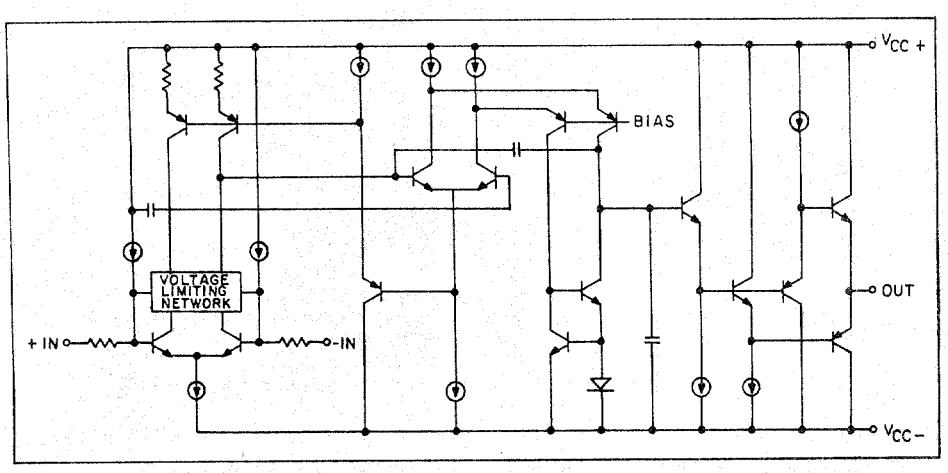
4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. For device class M, sampling and inspection procedures shall be in accordance with section 4 of MIL-M-38510 to the extent specified in MIL-STD-883 (see 3.1 herein). For device classes B and S, sampling and inspection procedures shall be in accordance with MIL-M-38510 and method 5005 of MIL-STD-883, except as modified herein. For device classes Q and V, sampling and inspection procedures shall be in accordance with MIL-I-38535 and the device manufacturer's QM plan.

Device type	01	
Case outlines	C	3
Terminal numbers	Terminal symbols	
1	OUT A	NC
2	-IN A	OUT A
3	+IN A	-IN A
4	V_{CC+}	NC
5	+IN B	NC
6	-IN B	+IN A
7	OUT B	NC
8	OUT C	V_{CC+}
9	-IN C	NC
10	+IN C	+IN B
11	V_{CC-}	NC
12	+IN D	NC
13	-IN D	-IN B
14	OUT D	OUT B
15	---	NC
16	---	OUT C
17	---	-IN C
18	---	NC
19	---	NC
20	---	+IN C
21	---	NC
22	---	V_{CC-}
23	---	NC
24	---	+IN D
25	---	NC
26	---	NC
27	---	-IN D
28	---	OUT D

NC = No connection

FIGURE 1. Terminal connections.



NOTE: One amplifier.

FIGURE 2. Schematic diagram.

4.2 Screening. For device class M, screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection. For device classes B and S, screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to qualification and quality conformance inspection. For device classes Q and V, screening shall be in accordance with MIL-I-38535, and shall be conducted on all devices prior to qualification and technology conformance inspection.

4.2.1 Additional criteria for device classes M, B, and S.

a. Burn-in test, method 1015 of MIL-STD-883.

(1) Test condition A, B, C, or D. For device class M, the test circuit shall be submitted to DESC-ECS for review with the certificate of compliance. For device classes B and S, the test circuit specified on figure 3 will apply.

(2) T_A = +125°C, minimum.

b. The percent defective allowable (PDA) for class S and class B devices shall be as specified in MIL-M-38510, based on failures from group A, subgroup 1 test after cooldown as final electrical test in accordance with method 5004 of MIL-STD-883 and with no intervening electrical measurements. If interim electrical parameter tests are performed prior to burn-in, failures resulting from pre burn-in screening may be excluded from the PDA. If interim electrical parameter tests prior to burn-in are omitted, then all screening failures shall be included in the PDA. The verified failures of group A subgroup 1 after burn-in divided by the total number of devices submitted for burn-in in that lot shall be used to determine the percent defective for that lot, and the lot shall be accepted or rejected based on the PDA for the applicable device class.

c. Interim and final electrical test parameters shall be as specified in table IIA herein.

4.2.2 Additional screening for device classes Q and V.

a. The burn-in test duration, test condition and test temperature or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-I-38535. The burn-in test circuit shall be submitted to DESC-ECS with the certificate of compliance and shall be under the control of the device manufacturer's Technology Review Board (TRB) in accordance with MIL-I-38535.

b. Interim and final electrical test parameters shall be as specified in table IIA herein.

c. Additional screening for device class V beyond the requirements of device class Q shall be as specified in appendix B of MIL-I-38535 and as detailed in table IIB herein.

4.3 Qualification inspection.

4.3.1 Qualification inspection for device classes B and S. Qualification inspection for device classes B and S shall be in accordance with MIL-M-38510. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.5).

4.3.2 Qualification inspection for device classes Q and V. Qualification inspection for device classes Q and V shall be in accordance with MIL-I-38535. Inspections to be performed shall be those specified in MIL-I-38535 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.5).

TABLE IIA. Electrical test requirements.

Test requirements	Subgroups (per method 5005, table I)			Subgroups (per MIL-I-38535, table III)	
	Device class M	Device class B	Device class S	Device class Q	Device class V
Interim electrical parameters (see 4.2)	1	1	1	1	1
Final electrical parameters (see 4.2)	1, 2, 3, 4, 7 1/	1, 2, 3, 4, 7 1/	1, 2, 3, 4, 7 1/	1, 2, 3, 4, 7 1/	1, 2, 3, 4, 7 1/
Group A test requirements (see 4.4)	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8
Group B end-point electrical parameters (see 4.4)	---	---	1, 2, 3 2/	---	1, 2, 3, 4, 5, 6, 7, 8 2/
Group C end-point electrical parameters (see 4.4)	1	1 2/	---	1	---
Group D end-point electrical parameters (see 4.4)	1	1	1	1	1
Group E end-point electrical parameters (see 4.4)	1, 2, 3, 4, 7	1, 2, 3, 4,7	1, 2, 3, 4, 7	1, 2, 3, 4, 7	1, 2, 3, 4, 7

1/ PDA applies to subgroup 1.
2/ Delta limits in accordance with table IIC shall be computed with reference to the previous interim electrical parameters.

4.4 Conformance inspection. Quality conformance inspection for device class M shall be in accordance with MIL-STD-883 (see 3.1 herein) and as specified herein. Quality conformance inspection for device classes B and S shall be in accordance with MIL-M-38510 and as specified herein. Inspections to be performed for device classes M, B, and S shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.5). Technology conformance inspection for classes Q and V shall be in accordance with MIL-I-38535 including groups A, B, C, D, and E inspections and as specified herein except where option 2 of MIL-I-38535 permits alternate in-line control testing.

4.4.1 Group A inspection.

a. Tests shall be as specified in table IIA and table III herein.

b. For device class M, subgroups 7 and 8 tests shall be sufficient to verify the truth table. For device classes B and S, subgroups 7 and 8 tests shall be sufficient to verify the truth table as approved by the qualifying activity. For device classes Q and V, subgroups 7 and 8 shall include verifying the functionality of the device.

c. Subgroups 9, 10, and 11 of table I of method 5005 of MIL-STD-883 shall be omitted.

TABLE IIB. Additional screening for device class V.

Test	MIL-STD-883, test method	Lot requirement
Particle impact noise detection	2020	100%
Internal visual	2010, condition A or approved alternate	100%
Nondestructive bond pull	2023 or approved alternate	100%
Reverse bias burn-in	1015	100%
Burn-in	1015, total of 240 hours at +125°C	100%
Radiographic	2012	100%

TABLE IIC. Group C end-point electrical parameters.

Test	Limit		Delta		
	Min	Max	Min	Max	Unit
V_{IO}	-150	150	-75	+75	µV
$+I_{IB}$	-3	3	-2	2	nA
$-I_{IB}$	-3	3	-2	2	nA

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of method 5005 of MIL-STD-883.

a. End-point electrical parameters shall be as specified in table IIA herein.

b. Steady-state life test for class S devices shall be in accordance with table II of method 5005 of MIL-STD-883, using the circuit shown on figure 3.

4.4.3 Group C inspection. The group C inspection end-point electrical parameters shall be as specified in table IIA herein.

TABLE III. Group A inspection.

Subgroup number	Symbol	Test number 1/	Adapter pin number						Relays energized
			V_{S1}	V_{S2}	V_{S3}	V_{S4}	P1	P2	
1	V_{IO}	1 A	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
		1 B	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
T_A = +25°C		1 C	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
		1 D	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
	I_{IO}	2 A	0 V	0 V	0 V	0 V	15 V	-15 V	
		2 B	0 V	0 V	0 V	0 V	15 V	-15 V	
		2 C	0 V	0 V	0 V	0 V	15 V	-15 V	
		2 D	0 V	0 V	0 V	0 V	15 V	-15 V	
	$+I_{IB}$	3 A	0 V	0 V	0 V	0 V	15 V	-15 V	K2
		3 B	0 V	0 V	0 V	0 V	15 V	-15 V	K2
		3 C	0 V	0 V	0 V	0 V	15 V	-15 V	K2
		3 D	0 V	0 V	0 V	0 V	15 V	-15 V	K2
	$-I_{IB}$	4 A	0 V	0 V	0 V	0 V	15 V	-15 V	K1
		4 B	0 V	0 V	0 V	0 V	15 V	-15 V	K1
		4 C	0 V	0 V	0 V	0 V	15 V	-15 V	K1
		4 D	0 V	0 V	0 V	0 V	15 V	-15 V	K1
	CMRR	5 A	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		5 B	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		5 C	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		5 D	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		6 A	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
		6 B	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
		6 C	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
		6 D	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
	PSRR	7 A	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		7 B	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		7 C	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		7 D	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		8 A	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
		8 B	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
		8 C	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
		8 D	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
	I_{SY}	9	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Test number 1/	Measured pin No.	Value	Units	Equation	Limits Min	Max	Units
1 A	MP 1	E 1	V	V_{IO} = E1/1000	-150	+150	µV
1 B	MP 2	E 2	V	V_{IO} = E2/1000	-150	+150	µV
1 C	MP 3	E 3	V	V_{IO} = E3/1000	-150	+150	µV
1 D	MP 4	E 4	V	V_{IO} = E4/1000	-150	+150	µV
2 A	MP 1	E 5	V	I_{IO} = (E5 - E1)/(1000 x 100000)	-1.0	+1.0	nA
2 B	MP 2	E 6	V	I_{IO} = (E6 - E2)/(1000 x 100000)	-1.0	+1.0	nA
2 C	MP 3	E 7	V	I_{IO} = (E7 - E3)/(1000 x 100000)	-1.0	+1.0	nA
2 D	MP 4	E 8	V	I_{IO} = (E8 - E4)/(1000 x 100000)	-1.0	+1.0	nA
3 A	MP 1	E 9	V	$+I_{IB}$ = (E9 - E1)/(1000 x 100000)	-3.0	+3.0	nA
3 B	MP 2	E 10	V	$+I_{IB}$ = (E10 - E2)/(1000 x 100000)	-3.0	+3.0	nA
3 C	MP 3	E 11	V	$+I_{IB}$ = (E11 - E3)/(1000 x 100000)	-3.0	+3.0	nA
3 D	MP 4	E 12	V	$+I_{IB}$ = (E12 - E4)/(1000 x 100000)	-3.0	+3.0	nA
4 A	MP 1	E 13	V	$-I_{IB}$ = (E13 - E1)/(1000 x 100000)	-3.0	+3.0	nA
4 B	MP 2	E 14	V	$-I_{IB}$ = (E14 - E2)/(1000 x 100000)	-3.0	+3.0	nA
4 C	MP 3	E 15	V	$-I_{IB}$ = (E15 - E3)/(1000 x 100000)	-3.0	+3.0	nA
4 D	MP 4	E 16	V	$-I_{IB}$ = (E16 - E4)/(1000 x 100000)	-3.0	+3.0	nA
5 A	MP 1	E 17	V	---			
5 B	MP 2	E 18	V	---			
5 C	MP 3	E 19	V	---			
5 D	MP 4	E 20	V	---			
6 A	MP 1	E 21	V	CMRR = 20 LOG (24000)/(ABS(E17 - E21))	120		dB
6 B	MP 2	E 22	V	CMRR = 20 LOG (24000)/(ABS(E18 - E22))	120		dB
6 C	MP 3	E 23	V	CMRR = 20 LOG (24000)/(ABS(E19 - E23))	120		dB
6 D	MP 4	E 24	V	CMRR = 20 LOG (24000)/(ABS(E20 - E24))	120		dB
7 A	MP 1	E 25	V	---			
7 B	MP 2	E 26	V	---			
7 C	MP 3	E 27	V	---			
7 D	MP 4	E 28	V	---			
8 A	MP 1	E 29	V	PSRR = ABS(E29 - E25)/30000		1.8	µV/V
8 B	MP 2	E 30	V	PSRR = ABS(E30 - E26)/30000		1.8	µV/V
8 C	MP 3	E 31	V	PSRR = ABS(E31 - E27)/30000		1.8	µV/V
8 D	MP 4	E 32	V	PSRR = ABS(E32 - E28)/30000		1.8	µV/V
9	P1	I1	mA	I_{SY} = I1		2.9	mA

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Subgroup number	Symbol	Test number 1/	Adapter pin number						Relays energized
			V_{S1}	V_{S2}	V_{S3}	V_{S4}	P1	P2	
2 T_A = +125°C	V_{IO}	10 A	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
		10 B	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
		10 C	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
		10 D	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
	I_{IO}	11 A	0 V	0 V	0 V	0 V	15 V	-15 V	
		11 B	0 V	0 V	0 V	0 V	15 V	-15 V	
		11 C	0 V	0 V	0 V	0 V	15 V	-15 V	
		11 D	0 V	0 V	0 V	0 V	15 V	-15 V	
	$+I_{IB}$	12 A	0 V	0 V	0 V	0 V	15 V	-15 V	K2
		12 B	0 V	0 V	0 V	0 V	15 V	-15 V	K2
		12 C	0 V	0 V	0 V	0 V	15 V	-15 V	K2
		12 D	0 V	0 V	0 V	0 V	15 V	-15 V	K2
	$-I_{IB}$	13 A	0 V	0 V	0 V	0 V	15 V	-15 V	K1
		13 B	0 V	0 V	0 V	0 V	15 V	-15 V	K1
		13 C	0 V	0 V	0 V	0 V	15 V	-15 V	K1
		13 D	0 V	0 V	0 V	0 V	15 V	-15 V	K1
	CMRR	14 A	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		14 B	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		14 C	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		14 D	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		15 A	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
		15 B	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
		15 C	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
		15 D	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
	PSRR	16 A	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		16 B	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		16 C	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		16 D	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		17 A	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
		17 B	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
		17 C	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
		17 D	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
	I_{SY}	18	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Test number 1/	Measured pin			Equation	Limits		Units
	No.	Value	Units		Min	Max	
10 A	MP 1	E33	V	V_{IO} = E33/1000	-270	+270	µV
10 B	MP 2	E34	V	V_{IO} = E34/1000	-270	+270	µV
10 C	MP 3	E35	V	V_{IO} = E35/1000	-270	+270	µV
10 D	MP 4	E36	V	V_{IO} = E36/1000	-270	+270	µV
11 A	MP 1	E37	V	I_{IO} = (E37 - E33)/(1000 x 100000)	-2.5	+2.5	nA
11 B	MP 2	E38	V	I_{IO} = (E38 - E34)/(1000 x 100000)	-2.5	+2.5	nA
11 C	MP 3	E39	V	I_{IO} = (E39 - E35)/(1000 x 100000)	-2.5	+2.5	nA
11 D	MP 4	E40	V	I_{IO} = (E40 - E36)/(1000 x 100000)	-2.5	+2.5	nA
12 A	MP 1	E41	V	$+I_{IB}$ = (E41 - E33)/(1000 x 100000)	-5.0	+5.0	nA
12 B	MP 2	E42	V	$+I_{IB}$ = (E42 - E34)/(1000 x 100000)	-5.0	+5.0	nA
12 C	MP 3	E43	V	$+I_{IB}$ = (E43 - E35)/(1000 x 100000)	-5.0	+5.0	nA
12 D	MP 4	E44	V	$+I_{IB}$ = (E44 - E36)/(1000 x 100000)	-5.0	+5.0	nA
13 A	MP 1	E45	V	$-I_{IB}$ = (E45 - E33)/(1000 x 100000)	-5.0	+5.0	nA
13 B	MP 2	E46	V	$-I_{IB}$ = (E46 - E34)/(1000 x 100000)	-5.0	+5.0	nA
13 C	MP 3	E47	V	$-I_{IB}$ = (E47 - E35)/(1000 x 100000)	-5.0	+5.0	nA
13 D	MP 4	E48	V	$-I_{IB}$ = (E48 - E36)/(1000 x 100000)	-5.0	+5.0	nA
14 A	MP 1	E49	V	---			
14 B	MP 2	E50	V	---			
14 C	MP 3	E51	V	---			
14 D	MP 4	E52	V	---			
15 A	MP 1	E53	V	CMRR = 20 LOG (24000)/(ABS(E49 - E53))	115		dB
15 B	MP 2	E54	V	CMRR = 20 LOG (24000)/(ABS(E50 - E54))	115		dB
15 C	MP 3	E55	V	CMRR = 20 LOG (24000)/(ABS(E51 - E55))	115		dB
15 D	MP 4	E56	V	CMRR = 20 LOG (24000)/(ABS(E52 - E56))	115		dB
16 A	MP 1	E57	V	---			
16 B	MP 2	E58	V	---			
16 C	MP 3	E59	V	---			
16 D	MP 4	E60	V	---			
17 A	MP 1	E61	V	PSRR = ABS(E61 - E57)/30000		3.2	µV/V
17 B	MP 2	E62	V	PSRR = ABS(E62 - E58)/30000		3.2	µV/V
17 C	MP 3	E63	V	PSRR = ABS(E63 - E59)/30000		3.2	µV/V
17 D	MP 4	E64	V	PSRR = ABS(E64 - E60)/30000		3.2	µV/V
18	P1	I2	mA	I_{SY} = I2		3.1	mA

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Subgroup number	Symbol	Test number 1/	Adapter pin number						Relays energized
			V_{S1}	V_{S2}	V_{S3}	V_{S4}	P1	P2	
3	V_{IO}	19 A	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
		19 B	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
T_A = -55°C		19 C	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
		19 D	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2
	I_{IO}	20 A	0 V	0 V	0 V	0 V	15 V	-15 V	
		20 B	0 V	0 V	0 V	0 V	15 V	-15 V	
		20 C	0 V	0 V	0 V	0 V	15 V	-15 V	
		20 D	0 V	0 V	0 V	0 V	15 V	-15 V	
	$+I_{IB}$	21 A	0 V	0 V	0 V	0 V	15 V	-15 V	K2
		21 B	0 V	0 V	0 V	0 V	15 V	-15 V	K2
		21 C	0 V	0 V	0 V	0 V	15 V	-15 V	K2
		21 D	0 V	0 V	0 V	0 V	15 V	-15 V	K2
	$-I_{IB}$	22 A	0 V	0 V	0 V	0 V	15 V	-15 V	K1
		22 B	0 V	0 V	0 V	0 V	15 V	-15 V	K1
		22 C	0 V	0 V	0 V	0 V	15 V	-15 V	K1
		22 D	0 V	0 V	0 V	0 V	15 V	-15 V	K1
	CMRR	23 A	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		23 B	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		23 C	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		23 D	-12 V	-12 V	-12 V	-12 V	27 V	-3 V	K1, K2
		24 A	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
		24 B	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
		24 C	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
		24 D	12 V	12 V	12 V	12 V	3 V	-27 V	K1, K2
	PSRR	25 A	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		25 B	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		25 C	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		25 D	0 V	0 V	0 V	0 V	3 V	-3 V	K1, K2
		26 A	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
		26 B	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
		26 C	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
		26 D	0 V	0 V	0 V	0 V	18 V	-18 V	K1, K2
	I_{SY}	27	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K2

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Test number 1/	Measured pin No.	Value	Units	Equation	Limits Min	Max	Units
19 A	MP 1	E65	V	V_{IO} = E65/1000	-270	+270	µV
19 B	MP 2	E66	V	V_{IO} = E66/1000	-270	+270	µV
19 C	MP 3	E67	V	V_{IO} = E67/1000	-270	+270	µV
19 D	MP 4	E68	V	V_{IO} = E68/1000	-270	+270	µV
20 A	MP 1	E69	V	I_{IO} = (E69 - E65)/(1000 x 100000)	-2.5	+2.5	nA
20 B	MP 2	E70	V	I_{IO} = (E70 - E66)/(1000 x 100000)	-2.5	+2.5	nA
20 C	MP 3	E71	V	I_{IO} = (E71 - E67)/(1000 x 100000)	-2.5	+2.5	nA
20 D	MP 4	E72	V	I_{IO} = (E72 - E68)/(1000 x 100000)	-2.5	+2.5	nA
21 A	MP 1	E73	V	$+I_{IB}$ = (E73 - E65)/(1000 x 100000)	-5.0	+5.0	nA
21 B	MP 2	E74	V	$+I_{IB}$ = (E74 - E66)/(1000 x 100000)	-5.0	+5.0	nA
21 C	MP 3	E75	V	$+I_{IB}$ = (E75 - E67)/(1000 x 100000)	-5.0	+5.0	nA
21 D	MP 4	E76	V	$+I_{IB}$ = (E76 - E68)/(1000 x 100000)	-5.0	+5.0	nA
22 A	MP 1	E77	V	$-I_{IB}$ = (E77 - E65)/(1000 x 100000)	-5.0	+5.0	nA
22 B	MP 2	E78	V	$-I_{IB}$ = (E78 - E66)/(1000 x 100000)	-5.0	+5.0	nA
22 C	MP 3	E79	V	$-I_{IB}$ = (E79 - E67)/(1000 x 100000)	-5.0	+5.0	nA
22 D	MP 4	E80	V	$-I_{IB}$ = (E80 - E68)/(1000 x 100000)	-5.0	+5.0	nA
23 A	MP 1	E81	V	---			
23 B	MP 2	E82	V	---			
23 C	MP 3	E83	V	---			
23 D	MP 4	E84	V	---			
24 A	MP 1	E85	V	CMRR = 20 LOG (24000)/(ABS(E81 - E85))	115		dB
24 B	MP 2	E86	V	CMRR = 20 LOG (24000)/(ABS(E82 - E86))	115		dB
24 C	MP 3	E87	V	CMRR = 20 LOG (24000)/(ABS(E83 - E87))	115		dB
24 D	MP 4	E88	V	CMRR = 20 LOG (24000)/(ABS(E84 - E88))	115		dB
25 A	MP 1	E89	V	---			
25 B	MP 2	E90	V	---			
25 C	MP 3	E91	V	---			
25 D	MP 4	E92	V	---			
26 A	MP 1	E93	V	PSRR = ABS(E93 - E89)/30000		3.2	µV/V
26 B	MP 2	E94	V	PSRR = ABS(E94 - E90)/30000		3.2	µV/V
26 C	MP 3	E95	V	PSRR = ABS(E95 - E91)/30000		3.2	µV/V
26 D	MP 4	E96	V	PSRR = ABS(E96 - E92)/30000		3.2	µV/V
27	P1	I3	mA	I_{SY} = I3		3.1	mA

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Subgroup number	Symbol	Test number 1/	Adapter pin number						Relays energized
			V_{S1}	V_{S2}	V_{S3}	V_{S4}	P1	P2	
4	A_{VS}	28 A	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K105
		28 B	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K106
T_A = +25° C	R_L = 2 kΩ	28 C	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K107
		28 D	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K108
		29 A	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K105
		29 B	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K106
		29 C	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K107
		29 D	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K108
	A_{VS}	30 A	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K105
		30 B	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K106
	R_L = 10 kΩ	30 C	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K107
		30 D	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K108
		31 A	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K105
		31 B	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K106
		31 C	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K107
		31 D	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K108
	V_{OP}	32 A	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K105
		32 B	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K106
	R_L = 2 kΩ	32 C	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K107
		32 D	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K108
		33 A	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K105
		33 B	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K106
		33 C	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K107
		33 D	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K108
	V_{OP}	34 A	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K105
		34 B	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K106
	R_L = 10 kΩ	34 C	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K107
		34 D	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K108
		35 A	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K3, K10, K105
		35 B	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K3, K10, K106
		35 C	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K3, K10, K107
		35 D	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K3, K10, K108

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Test number 1/	Measured pin No.	Value	Units	Equation	Limits Min	Max	Units
28 A	MP 5	E97	V	---			
28 B	MP 6	E98	V	---			
28 C	MP 7	E99	V	---			
28 D	MP 8	E100	V	---			
29 A	MP 5	E101	V	AVS = 20000/(ABS(E97 - E101))	2000		V/mV
29 B	MP 6	E102	V	AVS = 20000/(ABS(E98 - E102))	2000		V/mV
29 C	MP 7	E103	V	AVS = 20000/(ABS(E99 - E103))	2000		V/mV
29 D	MP 8	E104	V	AVS = 20000/(ABS(E100 - E104))	2000		V/mV
30 A	MP 5	E105	V	---			
30 B	MP 6	E106	V	---			
30 C	MP 7	E107	V	---			
30 D	MP 8	E108	V	---			
31 A	MP 5	E109	V	AVS = 20000/(ABS(E105 - E109))	5000		V
31 B	MP 6	E110	V	AVS = 20000/(ABS(E106 - E110))	5000		V
31 C	MP 7	E111	V	AVS = 20000/(ABS(E107 - E111))	5000		V
31 D	MP 8	E112	V	AVS = 20000/(ABS(E108 - E112))	5000		V
32 A	MP 5	E113	V	$+V_{OP}$ = E113	11		V
32 B	MP 6	E114	V	$+V_{OP}$ = E114	11		V
32 C	MP 7	E115	V	$+V_{OP}$ = E115	11		V
32 D	MP 8	E116	V	$+V_{OP}$ = E116	11		V
33 A	MP 5	E117	V	$-V_{OP}$ = E117		-11	V
33 B	MP 6	E118	V	$-V_{OP}$ = E118		-11	V
33 C	MP 7	E119	V	$-V_{OP}$ = E119		-11	V
33 D	MP 8	E120	V	$-V_{OP}$ = E120		-11	V
34 A	MP 5	E121	V	$+V_{OP}$ = E121	12		V
34 B	MP 6	E122	V	$+V_{OP}$ = E122	12		V
34 C	MP 7	E123	V	$+V_{OP}$ = E123	12		V
34 D	MP 8	E124	V	$+V_{OP}$ = E124	12		V
35 A	MP 5	E125	V	$-V_{OP}$ = E125		-12	V
35 B	MP 6	E126	V	$-V_{OP}$ = E126		-12	V
35 C	MP 7	E127	V	$-V_{OP}$ = E127		-12	V
35 D	MP 8	E128	V	$-V_{OP}$ = E128		-12	V

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Subgroup number	Symbol	Test number 1/	Adapter pin number						Relays energized
			V_{S1}	V_{S2}	V_{S3}	V_{S4}	P1	P2	
5	A_{VS}	36 A	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K105
		36 B	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K106
T_A = +125°C	R_L = 2 kΩ	36 C	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K107
		36 D	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K108
		37 A	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K105
		37 B	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K106
		37 C	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K107
		37 D	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K108
	A_{VS}	38 A	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K105
		38 B	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K106
	R_L = 10 kΩ	38 C	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K107
		38 D	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K108
		39 A	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K105
		39 B	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K106
		39 C	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K107
		39 D	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K108
	V_{OP}	40 A	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K105
		40 B	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K106
	R_L = 2 kΩ	40 C	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K107
		40 D	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K108
		41 A	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K105
		41 B	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K106
		41 C	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K107
		41 D	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K108
	V_{OP}	42 A	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K105
		42 B	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K106
	R_L = 10 kΩ	42 C	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K107
		42 D	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K108
		43 A	15 V	15 V	15 V	10 V	15 V	-15 V	K1, K2, K10, K105
		43 B	15 V	15 V	15 V	10 V	15 V	-15 V	K1, K2, K10, K106
		43 C	15 V	15 V	15 V	10 V	15 V	-15 V	K1, K2, K10, K107
		43 D	15 V	15 V	15 V	10 V	15 V	-15 V	K1, K2, K10, K108

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Test number 1/	Measured pin			Equation	Limits		Units
	No.	Value	Units		Min	Max	
36 A	MP 5	E129	V	---			
36 B	MP 6	E130	V	---			
36 C	MP 7	E131	V	---			
36 D	MP 8	E132	V	---			
37 A	MP 5	E133	V	AVS = 20000/(ABS(E129 - E133))	1000		V/mV
37 B	MP 6	E134	V	AVS = 20000/(ABS(E130 - E134))	1000		V/mV
37 C	MP 7	E135	V	AVS = 20000/(ABS(E131 - E135))	1000		V/mV
37 D	MP 8	E136	V	AVS = 20000/(ABS(E132 - E136))	1000		V/mV
38 A	MP 5	E137	V	---			
38 B	MP 6	E138	V	---			
38 C	MP 7	E139	V	---			
38 D	MP 8	E140	V	---			
39 A	MP 5	E141	V	AVS = 20000/(ABS(E137 - E141))	3000		V/mV
39 B	MP 6	E142	V	AVS = 20000/(ABS(E138 - E142))	3000		V/mV
39 C	MP 7	E143	V	AVS = 20000/(ABS(E139 - E143))	3000		V/mV
39 D	MP 8	E144	V	AVS = 20000/(ABS(E140 - E144))	3000		V/mV
40 A	MP 5	E145	V	$+V_{OP}$ = E145	11		V
40 B	MP 6	E146	V	$+V_{OP}$ = E146	11		V
40 C	MP 7	E147	V	$+V_{OP}$ = E147	11		V
40 D	MP 8	E148	V	$+V_{OP}$ = E148	11		V
41 A	MP 5	E149	V	$-V_{OP}$ = E149		-11	V
41 B	MP 6	E150	V	$-V_{OP}$ = E150		-11	V
41 C	MP 7	E151	V	$-V_{OP}$ = E151		-11	V
41 D	MP 8	E152	V	$-V_{OP}$ = E152		-11	V
42 A	MP 5	E153	V	$+V_{OP}$ = E153	12		V
42 B	MP 6	E154	V	$+V_{OP}$ = E154	12		V
42 C	MP 7	E155	V	$+V_{OP}$ = E155	12		V
42 D	MP 8	E156	V	$+V_{OP}$ = E156	12		V
43 A	MP 5	E157	V	$-V_{OP}$ = E157		-12	V
43 B	MP 6	E158	V	$-V_{OP}$ = E158		-12	V
43 C	MP 7	E159	V	$-V_{OP}$ = E159		-12	V
43 D	MP 8	E160	V	$-V_{OP}$ = E160		-12	V

See footnote at end table.

TABLE III. Group A inspection - Continued.

Subgroup number	Symbol	Test number 1/	Adapter pin number						Relays energized
			V_{S1}	V_{S2}	V_{S3}	V_{S4}	P1	P2	
6	A_{VS}	44 A	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K105
		44 B	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K106
T_A = -55° C	R_L = 2 kΩ	44 C	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K107
		44 D	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K9, K108
		45 A	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K105
		45 B	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K106
		45 C	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K107
		45 D	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K9, K108
	A_{VS}	46 A	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K105
		46 B	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K106
	R_L = 10 kΩ	46 C	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K107
		46 D	-10 V	-10 V	-10 V	-10 V	15 V	-15 V	K1, K2, K10, K108
		47 A	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K105
		47 B	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K106
		47 C	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K107
		47 D	10 V	10 V	10 V	10 V	15 V	-15 V	K1, K2, K10, K108
	V_{OP}	48 A	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K105
		48 B	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K106
	R_L = 2 kΩ	48 C	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K107
		48 D	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K9, K108
		49 A	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K105
		49 B	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K106
		49 C	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K107
		49 D	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K9, K108
	V_{OP}	50 A	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K105
		50 B	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K106
	R_L = 10 kΩ	50 C	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K107
		50 D	-15 V	-15 V	-15 V	-15 V	15 V	-15 V	K1, K2, K10, K108
		51 A	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K10, K105
		51 B	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K10, K106
		51 C	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K10, K107
		51 D	15 V	15 V	15 V	15 V	15 V	-15 V	K1, K2, K10, K108

See footnote at end of table.

TABLE III. Group A inspection - Continued.

Test number 1/	Measured pin			Equation	Limits		Units
	No.	Value	Units		Min	Max	
44 A	MP 5	E161	V	---			
44 B	MP 6	E162	V	---			
44 C	MP 7	E163	V	---			
44 D	MP 8	E164	V	---			
45 A	MP 5	E165	V	AVS = 20000/(ABS(E161 - E165))	1000		V/mV
45 B	MP 6	E166	V	AVS = 20000/(ABS(E162 - E166))	1000		V/mV
45 C	MP 7	E167	V	AVS = 20000/(ABS(E163 - E167))	1000		V/mV
45 D	MP 8	E168	V	AVS = 20000/(ABS(E164 - E168))	1000		V/mV
46 A	MP 5	E169	V	---			
46 B	MP 6	E170	V	---			
46 C	MP 7	E171	V	---			
46 D	MP 8	E172	V	---			
47 A	MP 5	E173	V	AVS = 20000/(ABS(E169 - E173))	3000		V/mV
47 B	MP 6	E174	V	AVS = 20000/(ABS(E170 - E174))	3000		V/mV
47 C	MP 7	E175	V	AVS = 20000/(ABS(E171 - E175))	3000		V/mV
47 D	MP 8	E176	V	AVS = 20000/(ABS(E172 - E176))	3000		V/mV
48 A	MP 5	E177	V	$+V_{OP}$ = E177	11		V
48 B	MP 6	E178	V	$+V_{OP}$ = E178	11		V
48 C	MP 7	E179	V	$+V_{OP}$ = E179	11		V
48 D	MP 8	E180	V	$+V_{OP}$ = E180	11		V
49 A	MP 5	E181	V	$-V_{OP}$ = E181		-11	V
49 B	MP 6	E182	V	$-V_{OP}$ = E182		-11	V
49 C	MP 7	E183	V	$-V_{OP}$ = E183		-11	V
49 D	MP 8	E184	V	$-V_{OP}$ = E184		-11	V
50 A	MP 5	E185	V	$+V_{OP}$ = E185	12		V
50 B	MP 6	E186	V	$+V_{OP}$ = E186	12		V
50 C	MP 7	E187	V	$+V_{OP}$ = E187	12		V
50 D	MP 8	E188	V	$+V_{OP}$ = E188	12		V
51 A	MP 5	E189	V	$-V_{OP}$ = E189		-12	V
51 B	MP 6	E190	V	$-V_{OP}$ = E190		-12	V
51 C	MP 7	E191	V	$-V_{OP}$ = E191		-12	V
51 D	MP 8	E192	V	$-V_{OP}$ = E192		-12	V

See footnote at end of table.

TABLE III. Group A inspection - Continued.

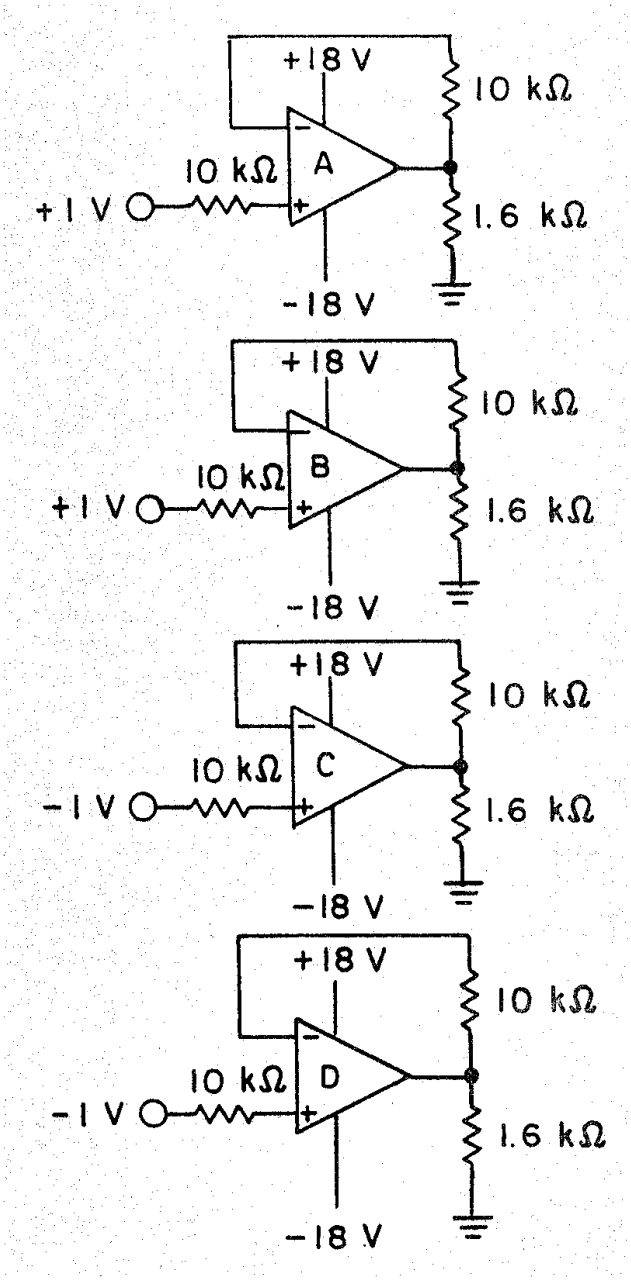
Subgroup number	Symbol	Test number 1/	Adapter pin number V_{S1}	V_{S2}	V_{S3}	V_{S4}	P1	P2	Relays energized
7	e_{NT}	52 A	0 V	0 V	0 V	0 V	15 V	-15 V	
		52 B	0 V	0 V	0 V	0 V	15 V	-15 V	
T_A = +25°C		52 C	0 V	0 V	0 V	0 V	15 V	-15 V	
		52 D	0 V	0 V	0 V	0 V	15 V	-15 V	
	SR+	53 A	0 V	0 V	0 V	0 V	15 V	-15 V	K1, K5, K6, K13, and K101, K105
		53 B	0 V	0 V	0 V	0 V	15 V	-15 V	and K102, K106
		53 C	0 V	0 V	0 V	0 V	15 V	-15 V	and K103, K107
		53 D	0 V	0 V	0 V	0 V	15 V	-15 V	and K104, K108
	SR-	54 A	0 V	0 V	0 V	0 V	15 V	-15 V	and K101, K105
		54 B	0 V	0 V	0 V	0 V	15 V	-15 V	and K102, K106
		54 C	0 V	0 V	0 V	0 V	15 V	-15 V	and K103, K107
		54 D	0 V	0 V	0 V	0 V	15 V	-15 V	and K104, K108
8	TC_{VIO}	55 A	Temperature coefficient is calculated using the V_{IO} readings from subgroups 1 and 2.						
T_A = +125°C		55 B							
		55 C							
		55 D							
8	TC_{VIO}	56 A	Temperature coefficient is calculated using the V_{IO} readings from subgroups 1 and 3.						
T_A = -55°C		56 B							
		56 C							
		56 D							

See footnote at end of table.

TABLE III. Group A inspection - Continued.

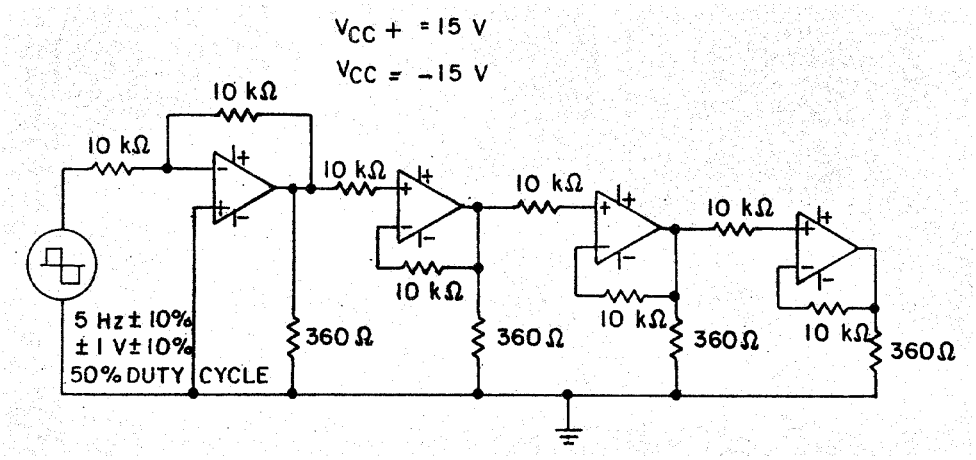
Test number 1/	Measured pin			Equation	Limits		Units	
	No.	Value	Units		Min	Max		
52 A		E193	V			438	nV rms	
52 B		E194	V			438	nV rms	
52 C		E195	V			438	nV rms	
52 D		E196	V			438	nV rms	
53 A	Timr	t_1	µs	$5/t_1$	0.1		V/µs	
53 B	Timr	t_2	µs	$5/t_2$	0.1		V/µs	
53 C	Timr	t_3	µs	$5/t_3$	0.1		V/µs	
53 D	Timr	t_4	µs	$5/t_4$	0.1		V/µs	
54 A	Timr	t_5	µs	$5/t_5$	0.1		V/µs	
54 B	Timr	t_6	µs	$5/t_6$	0.1		V/µs	
54 C	Timr	t_7	µs	$5/t_7$	0.1		V/µs	
54 D	Timr	t_8	µs	$5/t_8$	0.1		V/µs	
55 A				(E1 - E33 at +125°C)/100		1.2	µV/°C	
55 B				(E1 - E34 at +125°C)/100		1.2	µV/°C	
55 C				(E1 - E35 at +125°C)/100		1.2	µV/°C	
55 D				(E1 - E36 at +125°C)/100		1.2	µV/°C	
56 A				(E1 - E65 at -55°C)/80		1.2	µV/°C	
56 B				(E1 - E66 at -55°C)/80		1.2	µV/°C	
56 C				(E1 - E67 at -55°C)/80		1.2	µV/°C	
56 D				(E1 - E68 at -55°C)/80		1.2	µV/°C	

1/ Unless otherwise specified, all tests apply to figures 4 and 5.



NOTES:
1. Burn-in voltage tolerances are ±.2 V.
2. All resistors are metal film with ±1 percent tolerance.

FIGURE 3. Burn-in and steady-state life test circuit.



NOTE: All resistors are metal film with ±1 percent tolerance.

FIGURE 4. Dynamic burn-in test circuit.

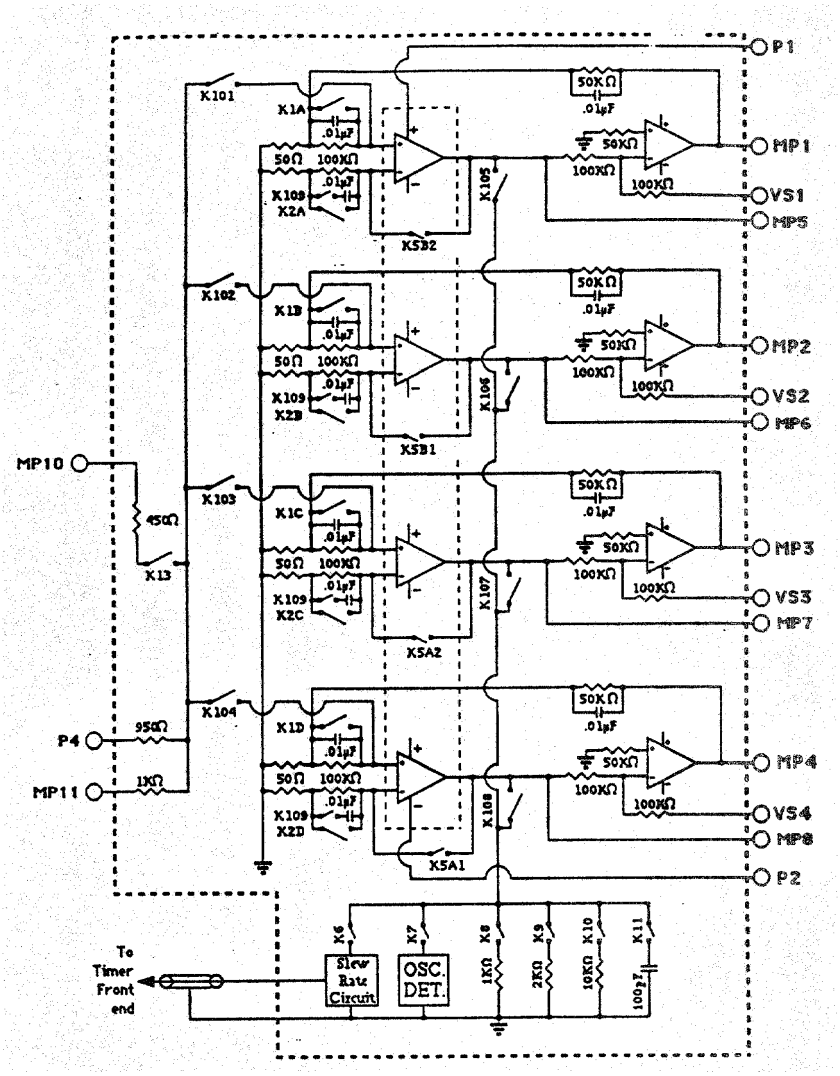


FIGURE 5. Static and dynamic test circuit.

4.4.3.1 Additional criteria for device classes M, B, and S. Steady-state life test conditions, method 1005 of MIL-STD-883:

a. Test condition A, B, C, or D. For device class M, the test circuit shall be submitted to DESC-ECS for review with the certificate of compliance. For device classes B and S, the test circuit shall be submitted to the qualifying activity.

b. T_A = +125°C, minimum.

c. Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

4.4.3.2 Additional criteria for device classes Q and V. The steady-state life test duration, test condition and test temperature or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-I-38535. The steady-state life test circuit shall be submitted to DESC-ECS with the certificate of compliance and shall be under the control of the device manufacturer's TRB in accordance with MIL-I-38535.

4.4.4 Group D inspection. The group D inspection end-point electrical parameters shall be as specified in table IIA herein.

4.4.5 Group E inspection. Group E inspection is required only for parts intended to be marked as radiation hardness assured (see 3.5 herein). RHA levels for device classes B and S shall be M, D, R, and H and for device class M shall be M and D. RHA quality conformance inspection sample tests shall be performed at the RHA level specified in the acquisition document.

a. RHA tests for device classes B and S for levels M, D, R, and H or for device class M for levels M and D shall be performed through each level to determine at what levels the devices meet the RHA requirements. These RHA tests shall be performed for initial qualification and after design or process changes which may affect the RHA performance of the device.

b. End-point electrical parameters shall be as specified in table IIA herein.

c. Prior to total dose irradiation, each selected sample shall be assembled in its qualified package. It shall pass the specified group A electrical parameters in table I for subgroups specified in table IIA herein.

d. For device classes M, B, and S, the devices shall be subjected to radiation hardness assured tests as specified in MIL-M-38510 for RHA level being tested, and meet the postirradiation end-point electrical parameter limits as defined in table I at T_A = +25°C ±5 percent, after exposure.

e. Prior to and during total dose irradiation testing, the devices shall be biased to establish a worst case condition as specified in the radiation exposure circuit.

f. For device classes M, B, and S, subgroups 1 and 2 in table V, method 5005 of MIL-STD-883 shall be tested as appropriate for device construction.

g. When specified in the purchase order or contract, a copy of the RHA delta limits shall be supplied.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510 for device classes M, B, and S and MIL-I-38535 for device classes Q and V.

6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use for Government microcircuit applications (original equipment), design applications, and logistics purposes.

6.1.1 Replaceability. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.

6.1.2 Substitutability. Device classes B and Q devices will replace device class M devices.

6.2 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished in accordance with MIL-STD-481 using DD Form 1693, Engineering Change Proposal (Short Form).

6.3 Record of users. Military and industrial users shall inform Defense Electronics Supply Center when a system application requires configuration control and which SMD's are applicable to that system. DESC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronic devices (FSC 5962) should contact DESC-ECS, telephone (513) 296-6022.

6.4 Comments. Comments on this drawing should be directed to DESC-ECS, Dayton, Ohio 45444, or telephone (513) 296-5375.

6.5 Symbols, definitions, and functional descriptions.

6.6 One part - one part number system. The one part - one part number system described below has been developed to allow for transitions between identical generic devices covered by the four major microcircuit requirements documents (MIL-M-38510, MIL-H-38534, MIL-I-38535, and 1.2.1 of MIL-STD-883) without the necessity for the generation of unique PIN's. The four military requirements documents represent different class levels, and previously when a device manufacturer upgraded military product from one class level to another, the benefits of the upgraded product were unavailable to the Original Equipment Manufacturer (OEM), that was contractually locked into the original unique PIN. By establishing a one part number system covering all four documents, the OEM can acquire to the highest class level available for a given generic device to meet system needs without modifying the original contract parts selection criteria.

Military documentation format	Example PIN under new system	Manufacturing source listing	Document listing
New MIL-M-38510 Military Detail Specifications (in the SMD format)	5962-XXXXXZZ(B or S)YY	QPL-38510 (Part 1 or 2)	MIL-BUL-103
New MIL-H-38534 Standardized Military Drawings	5962-XXXXXZZ(H or K)YY	QML-38534	MIL-BUL-103
New MIL-I-38535 Standardized Military Drawings	5962-XXXXXZZ(Q or V)YY	QML-38535	MIL-BUL-103
New 1.2.1 of MIL-STD-883 Standardized Military Drawings	5962-XXXXXZZ(M)YY	MIL-BUL-103	MIL-BUL-103

6.7 Sources of supply.

6.7.1 Sources of supply for device classes B and S. Sources of supply for device classes B and S are listed in QPL-38510.

6.7.2 Sources of supply for device classes Q and V. Sources of supply for device classes Q and V are listed in QML-38535. The vendors listed in QML-38535 have submitted a certificate of compliance (see 3.6 herein) to DESC-ECS and have agreed to this drawing.

6.7.3 Approved sources of supply for device class M. Approved sources of supply for class M are listed in MIL-BUL-103. The vendors listed in MIL-BUL-103 have agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DESC-ECS.

APPENDIX

SUBSTITUTION DATA

10. SCOPE

10.1 Scope. This appendix contains the PIN substitution information to support the one part-one part number system. For new system designs, after the date of this document the new PIN shall be used in lieu of the old PIN. For existing system designs prior to the date of this document the new PIN can be used in lieu of the old PIN. This is a mandatory part of the document. The information herein is intended for compliance. The PIN substitution data shall be as follows:

20. APPLICABLE DOCUMENTS. This section is not applicable to this appendix.

30. SUBSTITUTION DATA

New PIN	Old PIN
5962-8777101MCX	5962-8777101CX
5962-8777101M3X	5962-87771013X

STANDARDIZED MILITARY DRAWING SOURCE APPROVAL BULLETIN

DATE: 91-12-11

Approved sources of supply for SMD 5962-87771 are listed below for immediate acquisition only and shall be added to MIL-BUL-103 during the next revision. MIL-BUL-103 will be revised to include the addition or deletion of sources. The vendors listed below have agreed to this drawing and a certificate of compliance has been submitted to and accepted by DESC-ECS. This bulletin is superseded by the next dated revision of MIL-BUL-103.

Standardized military drawing PIN	Vendor CAGE number	Vendor similar PIN 1/
5962-8777101MCX	06665	OP400AY/883
5962-8777101M3X	06665	OP400ATC/883

1/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

Vendor CAGE number	Vendor name and address
06665	Analog Devices Precision Monolithics Division 1500 Space Park Drive P.O. Box 58020 Santa Clara, CA. 95050

The cross-reference information below is presented for the convenience of users. Microcircuits covered by SMD 5962-87771 will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges, postirradiation performance, or reliability factors equivalent to the listed SMD device types and may have slight physical variations in relation to case size. The presence of this information shall not be deemed as permitting substitution of generic-industry types for SMD types or as a waiver of any of the provisions of the applicable general specification.

Standardized military drawing PIN	Generic-industry PIN
5962-8777101BCX	OP400AY
5962-8777101B3X	OP400ATC
5962-8777101SCX	OP400AY
5962-8777101S3X	OP400ATC