REVISIONS			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	Add case outline 2. Add input voltage test. Add footnote 3/. Editorial changes throughout.	90-03-30	M. Poelking
B	Change boilerplate to add one-part part numbers. Add table IIB for delta limits. -rrp	97-12-08	R. Monnin
C	Add radiation hardened assurance requirements. - lgt	99-03-01	R. Monnin
D	Replaced reference to MIL-STD-973 with reference to MIL-PRF-38535. Drawing updated to reflect current requirements. - gt	04-08-06	R. Monnin

THE ORIGINAL FIRST SHEET OF THIS DRAWING HAS BEEN REPLACED.

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

PMIC N/A

PREPARED BY
JOSEPH A. KERBY

STANDARD MICROCIRCUIT DRAWING

THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS

AND AGENCIES OF THE DEPARTMENT OF DEFENSE

AMSC N/A

CHECKED BY
CHARLES E. BESORE

APPROVED BY
MONICA L. POELKING

DRAWING APPROVAL DATE
88-02-10

REVISION LEVEL
D

DEFENSE SUPPLY CENTER COLUMBUS
COLUMBUS, OHIO 43218-3990
http://www.dscc.dla.mil

MICROCIRCUIT, LINEAR, RADIATION HARDENED, PRECISION INSTRUMENTATION AMPLIFIER, MONOLITHIC SILICON

SIZE	CAGE CODE	
A	**67268**	**5962-88539**

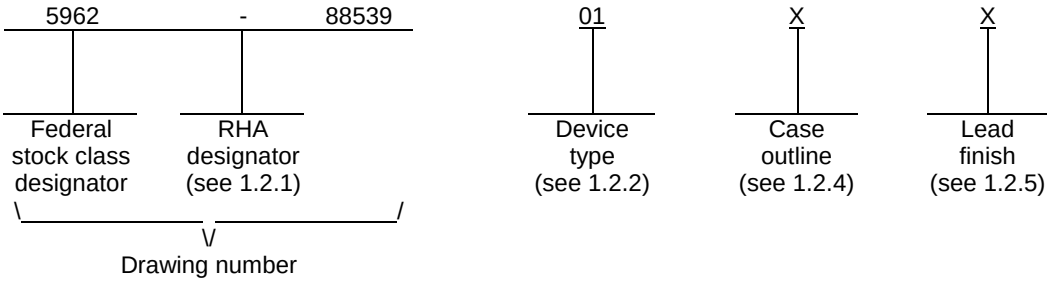
SHEET 1 OF 14

1. SCOPE

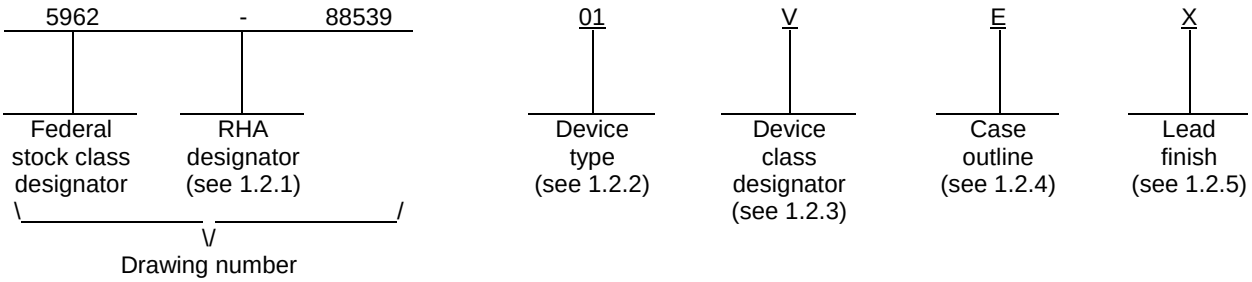
1.1 Scope. This drawing documents two product assurance class levels consisting of high reliability (device classes Q and M) and space application (device class V). A choice of case outlines and lead finishes are available and are reflected in the Part or Identifying Number (PIN). When available, a choice of Radiation Hardness Assurance (RHA) levels are reflected in the PIN.

1.2 PIN. The PIN is as shown in the following examples.

For device classes M and Q:



For device class V:



1.2.1 RHA designator. Device classes Q and V RHA marked devices meet the MIL-PRF-38535 specified RHA levels and are marked with the appropriate RHA designator. Device class M RHA marked devices meet the MIL-PRF-38535, appendix A specified RHA levels and are marked with the appropriate RHA designator. A dash (-) indicates a non-RHA device.

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

Device type	Generic number	Circuit function
01	AD524	Precision instrumentation amplifier

1.2.3 Device class designator. The device class designator is a single letter identifying the product assurance level as listed below. Since the device class designator has been added after the original issuance of this drawing, device classes M and Q designators will not be included in the PIN and will not be marked on the device.

Device class	Device requirements documentation
M	Vendor self-certification to the requirements for MIL-STD-883 compliant, non-JAN class level B microcircuits in accordance with MIL-PRF-38535, appendix A
Q or V	Certification and qualification to MIL-PRF-38535

1.2.4 Case outline(s). The case outline(s) are as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	Terminals	Package style
E	GDIP1-T16 or CDIP2-T16	16	Dual-in-line
2	CQCC1-N20	20	Square leadless chip carrier

1.2.5 Lead finish. The lead finish is as specified in MIL-PRF-38535 for device classes Q and V or MIL-PRF-38535, appendix A for device class M.

1.3 Absolute maximum ratings. 1/

Supply voltage (V_S) ..... ±18V dc
Internal power dissipation (P_D) ..... 280 mW
Input voltage ..... ±V_S maximum
Storage temperature range (T_{STG}) ..... -65°C to +150°C
Lead temperature (soldering, 10 seconds) ..... +300°C
Thermal resistance
Junction-to-case (θ_{JC}) ..... See MIL-STD-1835
Junction-to-ambient (θ_{JA}) :
Case outline E ..... 95° C/W
Case outline 2 ..... 150° C/W

1.4 Recommended operating conditions.

Supply voltage (V_S) ..... ±6 V dc to ±18 V dc
Ambient operating temperature (T_A) ..... -55°C to +125°C

1.5 Radiation features.

Neutron 2/
Maximum total dose available (dose rate = 50 – 300 rads(Si)/s) ..... 100 Krads(Si)
Dose rate latch up 2/

2. APPLICABLE DOCUMENTS

2.1 Government specification, standards, and handbooks. The following specification, standards, and handbooks form a part of this drawing to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATION

MIL-PRF-38535 - Integrated Circuits, Manufacturing, General Specification for.

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/ This test is to be conducted only when specified in the purchase order or contract.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard Microcircuits.
MIL-STD-1835 - Interface Standard Electronic Component Case Outlines.

DEPARTMENT OF DEFENSE HANDBOOKS

MIL-HDBK-103 - List of Standard Microcircuit Drawings.
MIL-HDBK-780 - Standard Microcircuit Drawings.

(Copies of these documents are available online at http://assist.daps.dla.mil/quicksearch/ or www.dodssp.daps.mil/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

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 takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements for device classes Q and V shall be in accordance with MIL-PRF-38535 and as specified herein or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein. The individual item requirements for device class M shall be in accordance with MIL-PRF-38535, appendix A for non-JAN class level B devices and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535 and herein for device classes Q and V or MIL-PRF-38535, appendix A and herein for device class M.

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 Block diagram. The block diagram shall be as specified on figure 2.

3.2.4 Radiation exposure circuit. The radiation exposure circuit shall be as specified on figure 3.

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 table I.

3.5 Marking. The part shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked. For packages where marking of the entire SMD PIN number is not feasible due to space limitations, the manufacturer has the option of not marking the "5962-" on the device. For RHA product using this option, the RHA designator shall still be marked. Marking for device classes Q and V shall be in accordance with MIL-PRF-38535. Marking for device class M shall be in accordance with MIL-PRF-38535, appendix A.

3.5.1 Certification/compliance mark. The certification mark for device classes Q and V shall be a "QML" or "Q" as required in MIL-PRF-38535. The compliance mark for device class M shall be a "C" as required in MIL-PRF-38535, appendix A.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions 1/ $-55°C \le T_A \le +125°C$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Gain error 1	GE_1	G = 1, V_O = ±10 V	1	01		±.05	%
		M, D, P, L, R				.05	
Gain error 10	GE_{10}	G = 10, V_O = ±10 V	1	01		±.25	%
		M, D, P, L, R				.25	
Gain error 100	GE_{100}	G = 100, V_O = ±10 V	1	01		±.5	%
		M, D, P, L, R				.5	
Gain error 1000	GE_{1000}	G = 1000, V_O = ±10 V	1	01		±2.0	%
		M, D, P, L, R				2.0	
Gain error drift 1	$TCGE_1$	G = 1, V_O = ±10 V 2/	2, 3	01		±5	ppm/°C
Gain error drift 10	$TCGE_{10}$	G = 10, V_O = ±10 V 2/	2, 3	01		±10	ppm/°C
Gain error drift 100	$TCGE_{100}$	G = 100, V_O = ±10 V 2/	2, 3	01		±25	ppm/°C
Gain error drift 1000	$TCGE_{1000}$	G = 1000, V_O = ±10 V 2/	2, 3	01		±50	ppm/°C
Input offset voltage	V_{OSI}	V_{IN} = 0 V, T_A = 25°C	1	01		±100	µV
		M, D, P, L, R				1.0	mV
Input offset voltage drift	TCV_{OSI}	V_{IN} = 0 V, G = 1000 2/	2, 3	01		±2	µV/°C
Output offset voltage	V_{OSO}	V_{IN} = 0 V, T_A = 25°C	1	01		±3	mV
		M, D, P, L, R				25	
Output offset voltage drift	TCV_{OSO}	V_{IN} = 0 V, G = 1 2/	2, 3	01		±50	µV/°C
Input bias current	I_B	G = 1	1	01	-50	50	nA
			2, 3		-70	70	
		M, D, P, L, R	1			1000	
Input offset current	I_{IO}	$I_{IO} = (I_{B+}) - (I_{B-})$ G = 1	1	01	-35	35	nA
			2, 3		-50	50	
		M, D, P, L, R	1			100	

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ $-55°C \le T_A \le +125°C$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Common mode rejection	CMRR1	G = 1 2/ V_{IN} = 0 V to +10 V	1, 2, 3	01	70		dB
Common mode rejection	-CMRR1	G = 1 2/ V_{IN} = 0 V to -10 V	1, 2, 3	01	70		dB
Common mode rejection	CMRR10	G = 10 2/ V_{IN} = 0 V to +10 V	1, 2, 3	01	90		dB
Common mode rejection	-CMRR10	G = 10 2/ V_{IN} = 0 V to -10 V	1, 2, 3	01	90		dB
Common mode rejection	CMRR100	G = 100 2/ V_{IN} = 0 V to +10 V	1, 2, 3	01	100		dB
Common mode rejection	-CMRR100	G = 100 2/ V_{IN} = 0 V to -10 V	1, 2, 3	01	100		dB
Common mode rejection	CMRR1000	G = 1000 2/ V_{IN} = 0 V to +10 V	1, 2, 3	01	110		dB
Common mode rejection	-CMRR1000	G = 1000 2/ V_{IN} = 0 V to -10 V	1, 2, 3	01	110		dB
Power supply current	I_{CC}	G = 1	1, 2, 3	01		5	mA
		M, D, P, L, R	1			5	
Power supply rejection	PSRR1	G = 1 2/ 3/	1, 2, 3	01	75		dB
Power supply rejection	PSRR10	G = 10 2/ 3/	1, 2, 3	01	95		dB
Power supply rejection	PSRR100	G = 100 2/ 3/	1, 2, 3	01	105		dB
Power supply rejection	PSRR1000	G = 1000 2/ 3/	1, 2, 3	01	115		dB

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ $-55°C \le T_A \le +125°C$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Input voltage	V_{IN}	Differential, linear, 2/ G = 1, T_A = 25°C	1	01	±10		V
		Common mode, linear 2/ G = 1, T_A = 25°C			± 7		
		Differential, safe, T_A = 25°C 2/ 4/ 5/				± 36	
		Common, safe, T_A = 25°C 2/ 4/ 5/				± 36	

1/ Devices supplied to this drawing have been characterized through all levels M, D, P, L, R of irradiation. However, this device is only tested at the "R" level. Pre and Post irradiation values are identical unless otherwise specified in table I. V_S = ±15 V, RL = 2 kΩ, unless otherwise specified.
2/ This parameter not tested post radiation.
3/ Power supply voltage tested at ±15 V with a swing to ±12 V.
4/ Input voltage (differential, safe) is the maximum voltage difference that can exist between the two input pins without damage to the device. Input voltage (common mode, safe) is the maximum voltage that can be applied to both input pins at the same time without damage to the device. The addition of the differential and common mode voltages shall not exceed ±36 volts and can be applied when the device power is on or off without damage to the device.
5/ Guaranteed if not tested to the limits specified.

Device type	01	
Case outline	E	2
Terminal number	Terminal symbol	
1	-INPUT	NC
2	+INPUT	-INPUT
3	RG_2	+INPUT
4	INPUT NULL	RG_2
5	INPUT NULL	INPUT NULL
6	REFERENCE	NC
7	$-V_S$	INPUT NULL
8	$+V_S$	REFERENCE
9	V_{OUT}	$-V_S$
10	SENSE	$+V_S$
11	G = 1000	NC
12	G = 100	V_{OUT}
13	G = 10	SENSE
14	OUTPUT NULL	G = 1000
15	OUTPUT NULL	G = 100
16	RG_1	NC
17	----	G = 10
18	----	OUTPUT NULL
19	----	OUTPUT NULL
20	----	RG_1

NOTES:

1. Case outline E, pins 11, 12, and 13; short to RG_2 for desired gain.
2. Case outline 2, pins 14, 15, and 17; short to RG for desired gain.

FIGURE 1. Terminal connections.

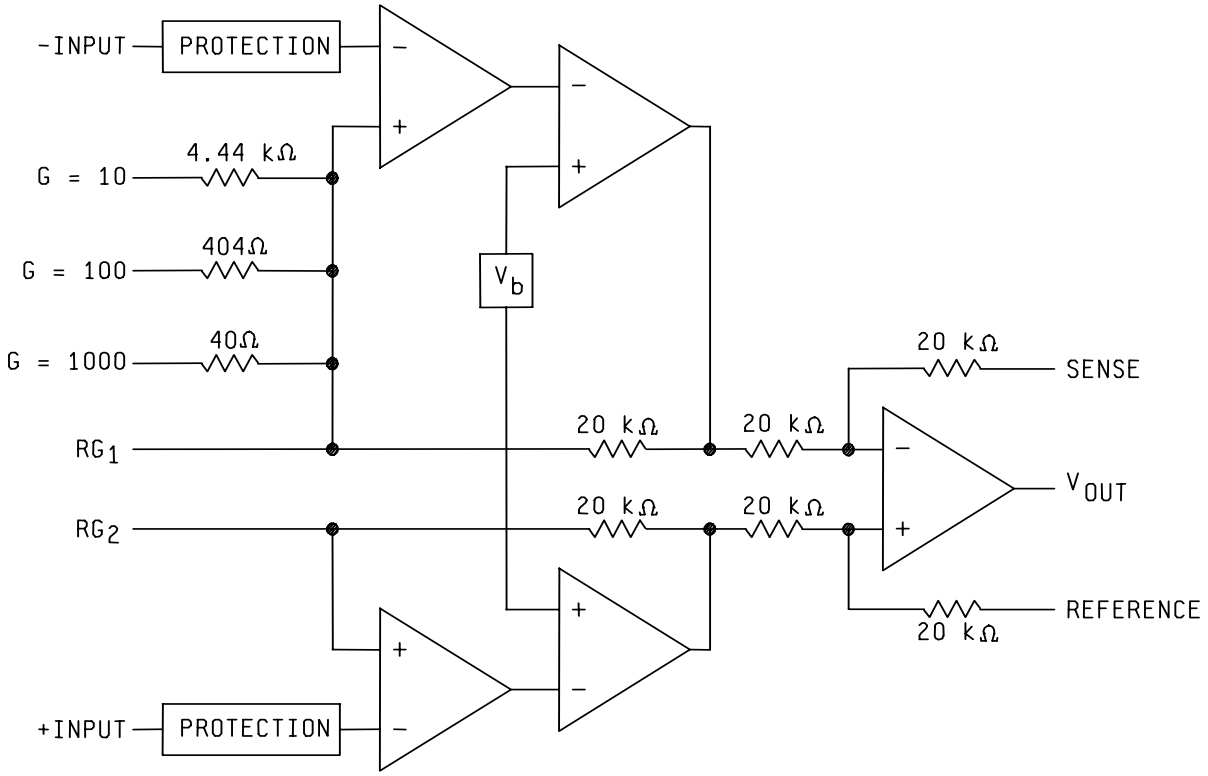


FIGURE 2. Block diagram.

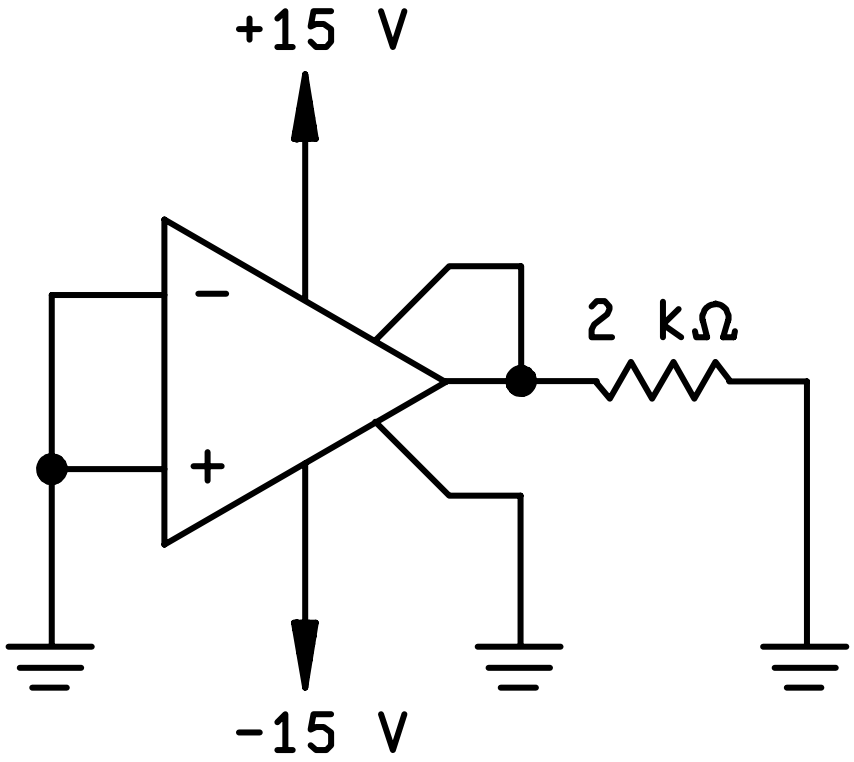


FIGURE 3. Radiation exposure circuit.

3.6 Certificate of compliance. 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 6.6.1 herein). 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-HDBK-103 (see 6.6.2 herein). The certificate of compliance submitted to DSCC-VA prior to listing as an approved source of supply for this drawing shall affirm that the manufacturer's product meets, for device classes Q and V, the requirements of MIL-PRF-38535 and herein or for device class M, the requirements of MIL-PRF-38535, appendix A and herein.

3.7 Certificate of conformance. A certificate of conformance as required for device classes Q and V in MIL-PRF-38535 or for device class M in MIL-PRF-38535, appendix A 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 DSCC-VA of change of product (see 6.2 herein) involving devices acquired to this drawing is required for any change that affects this drawing.

3.9 Verification and review for device class M. For device class M, DSCC, DSCC'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.

3.10 Microcircuit group assignment for device class M. Device class M devices covered by this drawing shall be in microcircuit group number 49 (see MIL-PRF-38535, appendix A).

4. VERIFICATION

4.1 Sampling and inspection. For device classes Q and V, sampling and inspection procedures shall be in accordance with MIL-PRF-38535 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein. For device class M, sampling and inspection procedures shall be in accordance with MIL-PRF-38535, appendix A.

4.2 Screening. For device classes Q and V, screening shall be in accordance with MIL-PRF-38535, and shall be conducted on all devices prior to qualification and technology conformance inspection. 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.

4.4.2.1 Additional criteria for device class M. Steady-state life test conditions, method 1005 of MIL-STD-883:

a. Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1005 of MIL-STD-883.

b. T_A = +125°C, minimum.

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

4.2.2 Additional criteria 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-PRF-38535. The burn-in test circuit shall be maintained under document revision level control of the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1015 of MIL-STD-883.

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 MIL-PRF-38535, appendix B.

TABLE IIA. Electrical test requirements.

Test requirements	Subgroups (in accordance with MIL-STD-883, method 5005, table I)	Subgroups (in accordance with MIL-PRF-38535, table III)	
	Device class M	Device class Q	Device class V
Interim electrical parameters (see 4.2)	1	1	1
Final electrical parameters (see 4.2)	1, 2, 3 1/	1, 2, 3 1/	1, 2, 3 1/ 2/
Group A test requirements (see 4.4)	1, 2, 3	1, 2, 3	1, 2, 3
Group C end-point electrical parameters (see 4.4)	1	1	1 2/
Group D end-point electrical parameters (see 4.4)	1	1	1
Group E end-point electrical parameters (see 4.4)	----	----	1

1/ PDA applies to subgroup 1.
2/ Delta limits as specified in table IIB shall be required where specified and the delta limits shall be computed with reference to the previous interim electrical parameters.

TABLE IIB. 240 hour burn-in and Group C end-point electrical parameters.

Parameter	Limit		Delta	
	Min	Max	Min	Max
V_{OSO}		±3 mV		±3 mV

4.3 Qualification inspection for device classes Q and V. Qualification inspection for device classes Q and V shall be in accordance with MIL-PRF-38535. Inspections to be performed shall be those specified in MIL-PRF-38535 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.4).

4.4 Conformance inspection. Technology conformance inspection for classes Q and V shall be in accordance with MIL-PRF-38535 including groups A, B, C, D, and E inspections and as specified herein except where option 2 of MIL-PRF-38535 permits alternate in-line control testing. Quality conformance inspection for device class M shall be in accordance with MIL-PRF-38535, appendix A and as specified herein. Inspections to be performed for device class M 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 4.4.4).

4.4.1 Group A inspection.

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

b. Subgroups 4, 5, 6, 7, 8, 9, 10, and 11 in table I, method 5005 of MIL-STD-883 shall be omitted.

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

4.4.2.1 Additional criteria for device class M. Steady-state life test conditions, method 1005 of MIL-STD-883:

a. Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1005 of MIL-STD-883.

b. T_A = +125°C, minimum.

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

4.4.2.2 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-PRF-38535. The test circuit shall be maintained under document revision level control by the device manufacturer's TRB in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1005 of MIL-STD-883.

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

4.4.4 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 M, Q, and V shall be as specified in MIL-PRF-38535. End-point electrical parameters shall be as specified in table IIA herein.

4.4.4.1 Total dose irradiation testing. Total dose irradiation testing shall be performed in accordance with MIL-STD-883 method 1019 condition A and as specified herein.

4.4.4.1.1 Accelerated aging test. Accelerated aging tests shall be performed on all devices requiring a RHA level greater than 5k rads(Si). The post-anneal end-point electrical parameter limits shall be as specified in table I herein and shall be the pre-irradiation end-point electrical parameter limit at 25°C ±5°C. Testing shall be performed at initial qualification and after any design or process changes which may affect the RHA response of the device.

4.4.4.2 Dose rate burnout. When required by the customer, test shall be performed on devices, SEC, or approved test structures at technology qualifications and after any design or process changes which may effect the RHA capability of the process. Dose rate burnout shall be performed in accordance with test method 1023 of MIL-STD-883 and as specified herein.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-PRF-38535 for device classes Q and V or MIL-PRF-38535, appendix A for device class M.

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.

6.2 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 using DD Form 1692, Engineering Change Proposal.

6.3 Record of users. Military and industrial users should inform Defense Supply Center Columbus (DSCC) when a system application requires configuration control and which SMD's are applicable to that system. DSCC 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 DSCC-VA, telephone (614) 692-0544.

6.4 Comments. Comments on this drawing should be directed to DSCC-VA , Columbus, Ohio 43218-3990, or telephone (614) 692-0547.

6.5 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-PRF-38535 and MIL-HDBK-1331.

6.6 Sources of supply.

6.6.1 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 DSCC-VA and have agreed to this drawing.

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

STANDARD MICROCIRCUIT DRAWING BULLETIN

DATE: 04-08-06

Approved sources of supply for SMD 5962-88539 are listed below for immediate acquisition information only and shall be added to MIL-HDBK-103 and QML-38535 during the next revision. MIL-HDBK-103 and QML-38535 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 DSCC-VA. This information bulletin is superseded by the next dated revision of MIL-HDBK-103 and QML-38535.

Standard microcircuit drawing PIN 1/	Vendor CAGE number	Vendor similar PIN 2/	Replacement military specification part number
5962-8853901EA	24355 (2)	AD524SD/883B	M38510/14301BEX
5962-88539012A	3/	AD524SE/883B	----
5962-8853901VEA	24355 (5)	AD524SD/QMLV	----
5962R8853901VEA	24355 (5)	AD524SD/QMLR	----

1/ The lead finish shown for each PIN representing a hermetic package is the most readily available from the manufacturer listed for that part. If the desired lead finish is not listed contact the vendor to determine its availability.
2/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.
3/ Not available from an approved source of supply.

Vendor CAGE number	Vendor name and address
24355	Analog Devices (2) RT 1 Industrial Park PO Box 9106 Norwood, MA 02062 Point of contact: 804 Woburn Street Wilmington, MA 01887-3462
24355	Analog Devices (5) RT 1 Industrial Park PO Box 9106 Norwood, MA 02062 Point of contact: 1500 Space Park Drive PO Box 58020 Santa Clara, CA 95052-8020