

REVISIONS																			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED																
A	Added new case outline Y. Added device type 02. Editorial changes throughout.	96-01-23	M.A. Frye																

REV																			
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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			

PMIC N/A	PREPARED BY Marcia B. Kelleher	DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444  MICROCIRCUIT, LINEAR, HIGH PERFORMANCE LOW-POWER FM IF SYSTEM, MONOLITHIC SILICON
<b>STANDARD MICROCIRCUIT DRAWING</b>  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 Michael A. Frye	
	DRAWING APPROVAL DATE 92-11-24	
	REVISION LEVEL  A	

SIZE <b>A</b>	CAGE CODE <b>67268</b>	<b>5962-90644</b>
SHEET 1 OF 11		

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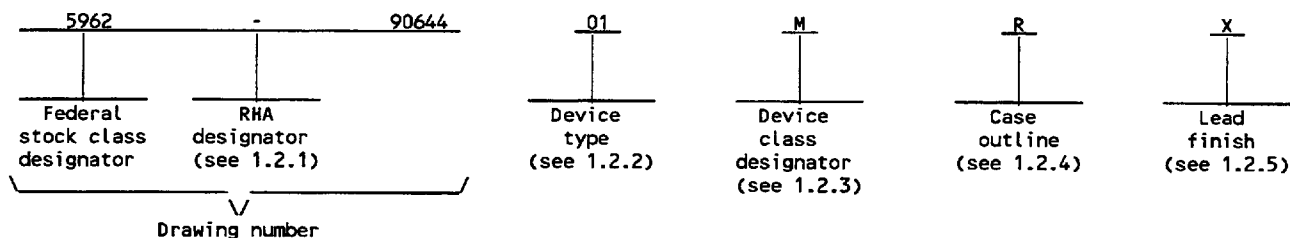
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## 1. SCOPE

1.1 Scope. This drawing documents three product assurance class levels consisting of space application (device class V), high reliability (device classes M and Q), and nontraditional performance environment (device class N). 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. For device class N, the user is cautioned to assure that the device is appropriate for the application environment.

1.2 PIN. The PIN is as shown in the following example:



1.2.1 RHA designator. Device classes N, 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	605	High-performance low-power FM IF system -55°C to +125°C
02	605	High-performance low-power FM IF system -40°C to +85°C

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

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
N	Certification and qualification to MIL-PRF-38535 with a nontraditional performance environment 1/
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, JEDEC publication 95, and as follows:

Outline letter	Descriptive designator	Terminals	Package style
R	GDIP1-T20 or CDIP2-T20	20	Dual-in-line
X	CQCC2-N20	20	Square leadless chip carrier
Y	MS-001AE	20	Plastic dual-in-line

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

1/ Any device outside the traditional performance environment; e.g., an operating temperature range of -55°C to +125°C and which requires hermetic packaging.

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### 1.3 Absolute maximum ratings. 1/

Power supply voltage ( $V_{CC}$ )	9.0 V dc
Storage temperature range	-65°C to +150°C
Lead temperature (soldering, 10 seconds)	+300°C
Thermal resistance, junction-to-case ( $\theta_{JC}$ ):	
Case outlines R and X	See MIL-STD-1835
Case outline Y	25°C/W
Thermal resistance, junction-to-ambient ( $\theta_{JA}$ )	151°C/W (test ambient, still air)
Junction temperature ( $T_J$ )	150°C
Power dissipation ( $P_D$ )	165 mW

### 1.4 Recommended operating conditions. 2/

Supply voltage ( $V_{CC}$ )	6.0 V dc
Ambient operating temperature range ( $T_A$ ):	
Device type 01	-55°C to +125°C
Device type 02	-40°C to +85°C
MIXER/OSC SECTION (external LO = 300 mV)	
Input signal frequency ( $f_{IN}$ )	500 Mhz typical
Crystal oscillator frequency ( $f_{OSC}$ )	150 Mhz typical
Third-order intercept point:	
$f_1 = 45.0$ MHz; $f_2 = 45.06$ MHz	-10 dBm typical
Conversion power gain, 50 $\Omega$ source	-1.7 dB typical
IF SECTION	
IF amp gain	39.7 dB typical
Limiter gain	62.5 dB typical
Input limiting -3 dB, $R_{17} = 5.1$ K $\Omega$ ,	
test at IF AMP IN pin	-113 dBm typical
Unmuted audio level, $R_{11} = 100$ K $\Omega$ , 150 pF de-emphasis	480 mV <sub>RMS</sub> typical
SINAD sensitivity, RF level -118 dB	16 dB typical
Signal to noise ratio, no modulation for noise	73 dB typical
RSSI range, $R_9 = 100$ K $\Omega$ , IF AMP OUT pin	90 dB typical
RSSI accuracy, $R_9 = 100$ K $\Omega$ , IF AMP OUT pin	$\pm 1.5$ dB typical
Unmuted audio output impedance	58 K $\Omega$ typical
Muted audio output impedance	58 K $\Omega$ typical
RF/IF SECTION (internal LO)	
Unmuted audio level, $V_{CC} = 4.5$ V, RF level = -27 dBm	450 mV <sub>RMS</sub> typical
System RSSI output, $V_{CC} = 4.5$ V, RF level = -27 dBm	4.3 V typical

## 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 listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation.

### SPECIFICATION

#### MILITARY

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

### STANDARDS

#### MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.  
MIL-STD-973 - Configuration Management.  
MIL-STD-1835 - Microcircuit Case Outlines.

- 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/ Typical values are not guaranteed or tested and are included as an aid to designers only.

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## HANDBOOKS

### MILITARY

- MIL-HDBK-103 - List of Standard Microcircuit Drawings (SMD's).  
MIL-HDBK-780 - Standard Microcircuit Drawings.

(Unless otherwise indicated, copies of the specification, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

**2.2 Non-Government publications.** The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation.

#### ELECTRONICS INDUSTRIES ASSOCIATION (EIA)

- JEDEC Publication 95 - Registered and Standard Outlines for Semiconductor Devices.

(Applications for copies should be addressed to the Electronic Industries Association, 2500 Wilson Boulevard, Arlington, VA 22201-3834).

(Non-government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services).

**2.3 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 N, 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 N, 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 Test circuit.** The test circuit 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 II. 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 as listed in MIL-HDBK-103. 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 N, 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 N, 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.

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TABLE 1. Electrical performance characteristics.

Test	Symbol	Conditions $T_A = 1/$ unless otherwise specified	Group A subgroups	Device type	Limits 2/		Unit
					Min	Max	
DC current drain	$I_{CC}$		1, 2, 3	01, 02	3.8	7.0	mA
Mute switch input threshold	$V_{THH}$	ON	1, 2, 3	01, 02	1.7		V
	$V_{THL}$	OFF				1.0	
AC ELECTRICAL CHARACTERISTICS 3/ Mixer/oscillator section, external LO = 300 mV							
Noise figure at 45 MHz	NF	4/	9, 10, 11	01, 02		7.0	dB
Conversion power gain	$P_{CG}$	Matched 14.5 dBv step-up 4/	9, 10, 11	01, 02	7	17	dB
RF input resistance	$R_{RFI}$	Single-ended input 4/	9, 10, 11	01, 02	3.0		k $\Omega$
RF input capacitance	$C_{RFI}$	4/	9, 10, 11	01, 02		4.0	pF
Mixer output resistance	$R_{MO}$	MIXER OUT pin 4/	9, 10, 11	01, 02	1.25		k $\Omega$
IF section							
AM rejection	$R_{AM}$	80 percent AM 1.0 kHz	9, 10, 11	01, 02	24	43	dB
Audio level	AL	R10 = 100 k $\Omega$ , 15 nF de-emphasis	9, 10, 11	01, 02	60	280	mV <sub>RMS</sub>
Total harmonic distortion	THD		9, 10, 11	01, 02		-31	dB
RSSI output	$R_{SSI1}$	IF level = -118 dBm, R9 = 100 k $\Omega$ , 1.5 k $\Omega$ input	9, 10, 11	01, 02	0	850	mV
	$R_{SSI2}$	IF level = -68 dBm, R9 = 100 k $\Omega$ , 1.5 k $\Omega$ input	9, 10, 11	01, 02	1.7	3.2	V
	$R_{SSI3}$	IF level = -18 dBm, R9 = 100 k $\Omega$ , 1.5 k $\Omega$ input	9, 10, 11	01, 02	3.5	5.6	V
IF input impedance	$R_{IN}$	4/	9, 10, 11	01, 02	1.4		k $\Omega$
IF output impedance	$R_{OUT}$	4/	9, 10, 11	01, 02	0.85		k $\Omega$
Limiter input impedance	$LR_{IN}$	4/	9, 10, 11	01, 02	1.4		k $\Omega$

1/ See figure 3 for test circuit. All testing to be performed using worst case test conditions unless otherwise specified. The supply voltage and operating temperature shall be as specified in paragraph 1.4.

2/ The algebraic convention, whereby the most negative value is a minimum and the most positive a maximum, is used in this table. Negative current shall be defined as conventional current flow out of a device terminal.

3/ RF frequency = 45 MHz + 14.5 dBV RF input step-up; IF frequency = 455 kHz; R17 = 5.1 k $\Omega$ ; RF level = -45 dBm; FM modulation = 1 kHz with  $\pm 8$  kHz peak deviation. Audio output with C-message weighted filter and de-emphasis capacitor. The parameters listed below are tested using automatic test equipment to assure consistent electrical characteristics. The limits do not represent the ultimate performance limits of the device. Use of an optimized RF layout will improve many of the listed parameters.

4/ This parameter is guaranteed by design, but not tested.

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Device type	01, 02
Case outlines	R and X
Terminal number	Terminal symbol
1	RF IN
2	RF BYPASS
3	CRYSTAL OSC
4	CRYSTAL OSC
5	MUTE IN
6	V <sub>CC</sub>
7	RSSI OUT
8	MUTED AUDIO OUTPUT
9	UNMUTED AUDIO OUTPUT
10	QUADRATURE INPUT
11	LIMITER OUTPUT
12	LIMITER DECOUPLING
13	LIMITER DECOUPLING
14	LIMITER IN
15	GND
16	IF AMP OUT
17	IF AMP DECOUPLING
18	IF AMP INPUT
19	IF AMP DECOUPLING
20	MIXER OUT

FIGURE 1. Terminal connections.

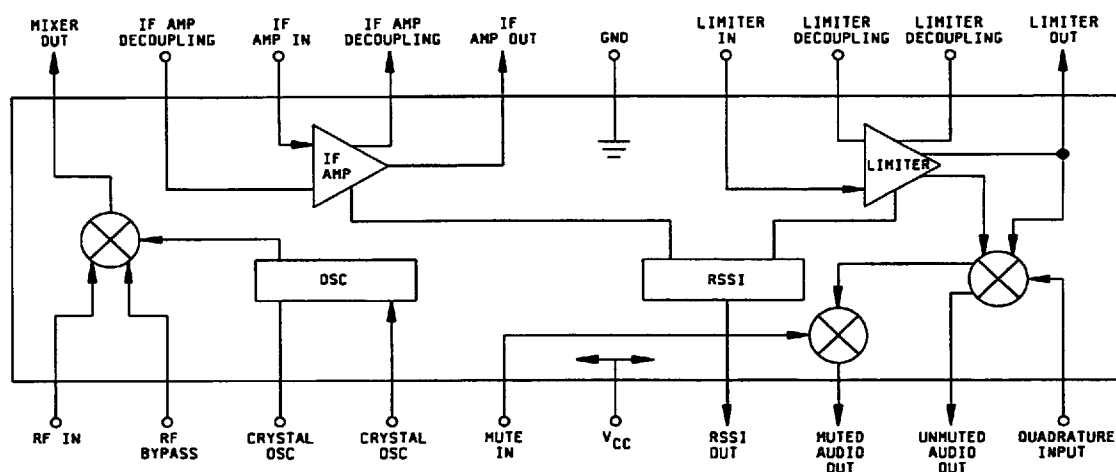


FIGURE 2. Block diagram.

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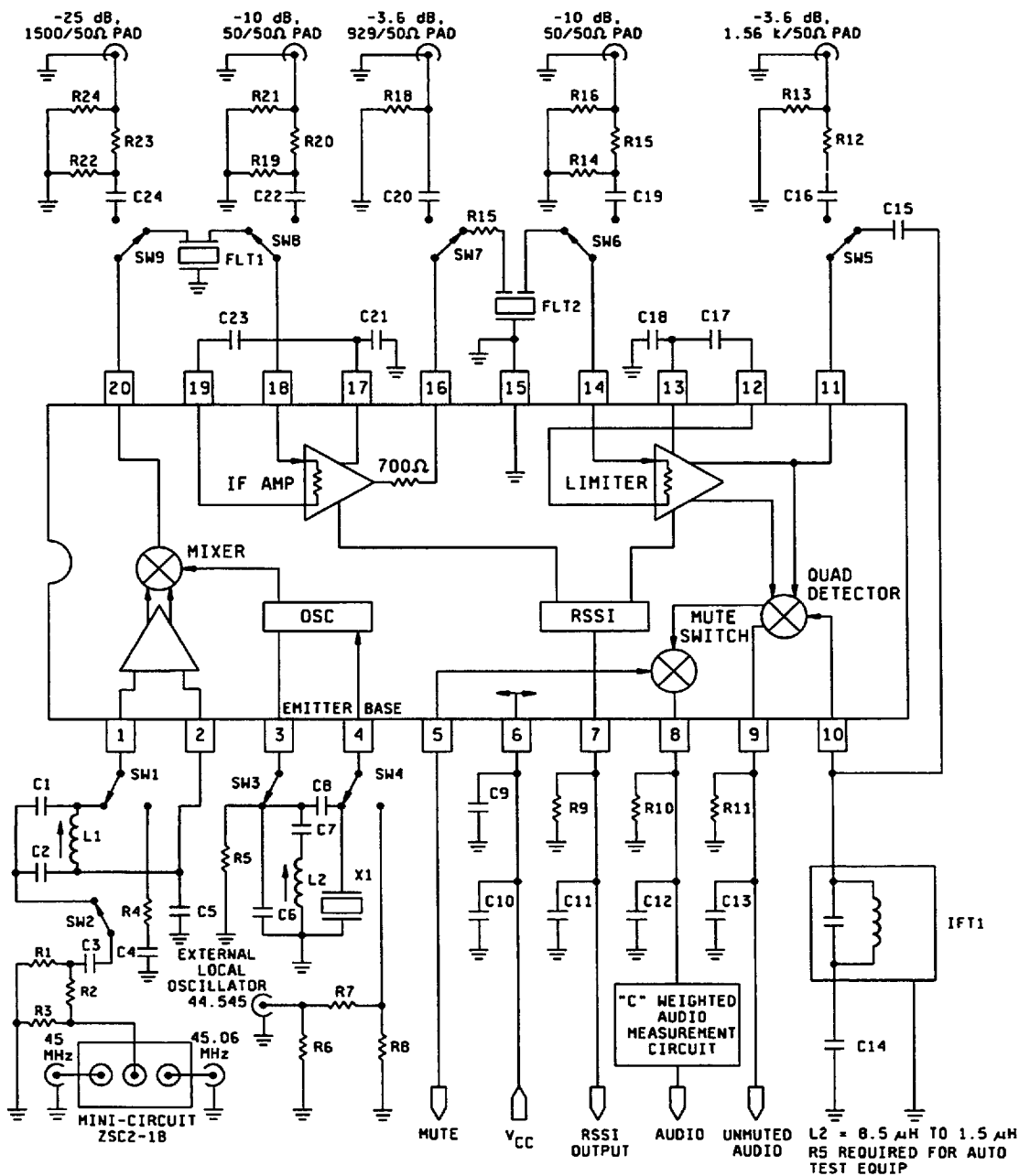


FIGURE 3. Test circuit.

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NOTE:

Application component list is as follows:

C1	100 pF NPO ceramic
C2	390 pF NPO ceramic
C5	100 nF $\pm 10\%$ monolithic ceramic
C6	22 pF NPO ceramic
C7	1 nF ceramic
C8	10.0 pF NPO ceramic (minimum)
C9	100 nF $\pm 10\%$ monolithic ceramic
C10	15 $\mu$ F tantalum (minimum)
C11	100 nF $\pm 10\%$ monolithic ceramic
C12	15 nF $\pm 10\%$ ceramic
C13	150 pF $\pm 2\%$ N 1500 ceramic
C14	100 nF $\pm 10\%$ monolithic ceramic
C15	10 pF NPO ceramic
C17	100 nF $\pm 10\%$ monolithic ceramic
C18	100 nF $\pm 10\%$ monolithic ceramic
C21	100 nF $\pm 10\%$ monolithic ceramic
C23	100 nF $\pm 10\%$ monolithic ceramic
Flt1	Ceramic filter murata SFG455A3 or equivalent
Flt2	Ceramic filter murata SFG455A3 or equivalent
IFT1	455 kHz (Ce = 180 pF) RMC-2A6597H
L1	147 - 160 nH coilcraft UNI-10/142-04J08S
L2	3.3 $\mu$ H, nominal toko 292 CNS-T1 0462
X1	44.545 MHz crystal ICM4712701
R4	51.1 $\Omega$
R6	178 $\Omega$
R7	30.5 $\Omega$
R8	39.2 $\Omega$
R12	1.8 k $\Omega$
R13	51.7 $\Omega$
R14	32.8 $\Omega$
R15	71.5 $\Omega$
R15.5	5.1 k $\Omega$
R16	96.5 $\Omega$
R18	51.7 $\Omega$
R19	32.8 $\Omega$
R21	96.5 $\Omega$
R22	38.80 $\Omega$
R23	24.30 $\Omega$
R24	50.5 $\Omega$
R9	100 k $\pm 1\%$ 1/4 W metal film
R17	5.1 k $\pm 5\%$ 1/4 W carbon composition
R10	100 k $\pm 1\%$ 1/4 W metal film (optional)
R11	100 k $\pm 1\%$ 1/4 W metal film (optional)

FIGURE 3. Test circuit - Continued.

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**3.6 Certificate of compliance.** For device classes N, 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 DESC-EC prior to listing as an approved source of supply for this drawing shall affirm that the manufacturer's product meets, for device classes N, 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 N, 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 DESC-EC of change of product (see 6.2 herein) involving devices acquired to this drawing is required for any change as defined in MIL-STD-973.

**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.

**3.10 Microcircuit group assignment for device class M.** Device class M devices covered by this drawing shall be in microcircuit group number 110 (see MIL-PRF-38535, appendix A).

#### 4. QUALITY ASSURANCE PROVISIONS

**4.1 Sampling and inspection.** For device classes N, 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 N, 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.

##### 4.2.1 Additional criteria for device class M.

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

(1) 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 test method 1015 of MIL-STD-883.

(2)  $T_A = +125^{\circ}\text{C}$ , minimum.

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

##### 4.2.2 Additional criteria for device classes N, 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 test method 1015 of MIL-STD-883.

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

**4.3 Qualification inspection for device classes N, Q, and V.** Qualification inspection for device classes N, 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).

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TABLE II. 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 N	Device class Q	Device class V
Interim electrical parameters (see 4.2)	1	1	1	1
Final electrical parameters (see 4.2)	1, 2, 3, 9 1/	1, 2, 3, 9 1/	1, 2, 3, 9 1/	1, 2, 3, 9 1/
Group A test requirements (see 4.4)	1, 2, 3, 9, 10, 11	1, 2, 3, 9, 10, 11	1, 2, 3, 9 10, 11	1, 2, 3, 9 10, 11
Group C end-point electrical parameters (see 4.4)	1	1, 2, 3, 9	1, 2, 3, 9	1, 2, 3, 9
Group D end-point electrical parameters (see 4.4)	1	1, 2, 3, 9	1, 2, 3, 9	1, 2, 3, 9
Group E end-point electrical parameters (see 4.4)	---	---	---	---

1/ PDA applies to subgroup 1.

4.4 Conformance inspection. Technology conformance inspection for classes N, 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. Tests shall be as specified in table II herein.

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

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

- 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 test method 1005 of MIL-STD-883.
- $T_A = +125^\circ\text{C}$ , minimum.
- Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

4.4.2.2 Additional criteria for device classes N, 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 test 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 II herein.

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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).

- a. End-point electrical parameters shall be as specified in table II herein.
- b. For device classes N, Q, and V, the devices or test vehicle shall be subjected to radiation hardness assured tests as specified in MIL-PRF-38535 for the RHA level being tested. For device class M, the devices shall be subjected to radiation hardness assured tests as specified in MIL-PRF-38535, appendix A for the RHA level being tested. All device classes must meet the postirradiation end-point electrical parameter limits as defined in table I at  $T_A = +25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , after exposure, to the subgroups specified in table II herein.
- c. 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-PRF-38535 for device classes N, 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.

6.1.2 Substitutability. Device class 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-973 using DD Form 1692, Engineering Change Proposal.

6.3 Record of users. Military and industrial users should 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-EC, telephone (513) 296-6047.

6.4 Comments. Comments on this drawing should be directed to DESC-EC, Dayton, Ohio 45444-5270, or telephone (513) 296-5377.

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 N, Q, and V. Sources of supply for device classes N, 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-EC 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 DESC-EC.

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