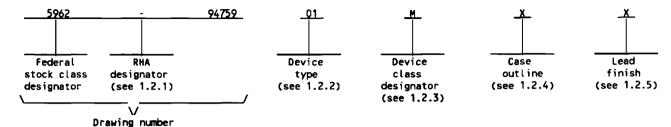
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1. SCOPE

- 1.1 <u>Scope</u>. 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 Q and M) and space application (device class 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 <u>RHA designator</u>. Device class M RHA marked devices shall meet the MIL-I-38535 appendix A 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 <u>Device type(s)</u>. The device type(s) shall identify the circuit function as follows:

Device type Generic number Circuit function

O1 AD9040A 10-bit, 40 MSPS A/D converter

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

Device class

Device requirements documentation

М

Vendor self-certification to the requirements for non-JAN class B microcircuits in accordance with 1.2.1 of MIL-STD-883

Q or V

Certification and qualification to MIL-1-38535

1.2.4 <u>Case outline(s)</u>. The case outline(s) shall be as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	<u>Ierminals</u>	<u>Package style</u>
X	GD1P4-T28	28	Dual-in-line
Y	See figure 1	28	Gullwing lead chip carrier

1.2.5 <u>Lead finish</u>. The lead finish shall be as specified in MIL-STD-883 (see 3.1 herein) for class M 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.

STANDARD
MICROCIRCUIT DRAWING
DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

SIZE A		5962-94759
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1.3 Absolute maximum ratings. 1/ Positive voltage supply (+V_S) +7 V Digital output current 20 mA Junction temperature (T_J) +175°C Lead soldering temperature (10 seconds) +300°C Thermal reistance, junction-to-case (Θ_{JC}) : Case Y Thermal reistance, junction-to-ambient (Θ_{JA}) : 1.4 Recommended operating conditions. Ambient operating temeprature range (TA)-55°C to +125°C 2. APPLICABLE DOCUMENTS 2.1 Government specification, standards, bulletin, and handbook. Unless otherwise specified, the following specification, 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. **SPECIFICATION** MILITARY MIL-I-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. BULLETIN MILITARY MIL-BUL-103 - List of Standard Microcircuit Drawings (SMD's). **HANDBOOK** MILITARY MIL-HDBK-780 - Standardized Military Drawings. (Copies of the specification, 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.) 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. 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. SIZE STANDARD 5962-94759 Α MICROCIRCUIT DRAWING **DEFENSE ELECTRONICS SUPPLY CENTER** REVISION LEVEL SHEET DAYTON, OHIO 45444 3

3. REQUIREMENTS

- 3.1 <u>Item requirements</u>. 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 Q and V shall be in accordance with MIL-I-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 effect the form, fit, or function as described herein.
- 3.2 <u>Design construction</u>, and physical <u>dimensions</u>. The design, construction, and physical <u>dimensions</u> shall be as specified in MIL-STD-883 (see 3.1 herein) for <u>device</u> class M 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 and figure 1.
 - 3.2.2 <u>Terminal connections</u>. The terminal connections shall be as specified on figure 2.
 - 3.2.3 Block diagram(s). The block diagram(s) shall be as specified on figure 3.
- 3.3 <u>Electrical performance characteristics and postirradiation parameter limits</u>. 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 <u>Electrical test requirements</u>. 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 <u>Marking</u>. 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 Q and V shall be in accordance with MIL-I-38535.
- 3.5.1 <u>Certification/compliance mark</u>. 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 Q and V shall be a "QML" or "Q" as required in MIL-I-38535.
- 3.6 <u>Certificate of compliance</u>. 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 6.7.2 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 6.7.1 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 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 <u>Certificate of conformance</u>. A certificate of conformance as required for device class M in MIL-SID-883 (see 3.1 herein) 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-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 <u>Verification and review for device class M</u>. 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 <u>Microcircuit group assignment for device class M</u>. Device class M devices covered by this drawing shall be in microcircuit group number 57 (see MIL-I-38535, appendix A).

4. QUALITY ASSURANCE PROVISIONS

4.1 <u>Sampling and inspection</u>. For device class M, sampling and inspection procedures shall be in accordance with MIL-STD-883 (see 3.1 herein). For device classes Q and V, sampling and inspection procedures shall be in accordance with MIL-I-38535 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not effect the form, fit, or function as described herein.

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Test	Symbol	Conditions 1/	Group A		Lim	its <u>2</u> /	Unit
		-55°C & T _A & +125°C unless otherwise specified	subgroup	s type	Min	Max	
DC accuracy section	•			'	-	•	!
Differential nonlinearity	DNL		4	01	1	+2	LSB
Integral nonlinearity	INL		5.6	01	-2	+2.5	LSB
Gain error	GE	3/	5.6	01	-2.5	+2.5	% FS
No missing codes	NMC	4/	4,5,6	01	-3	0	
Input capacitance	CIN	See 4.4.1c	5,6	01		15	pF
Analog input section						•	
Input offset voltage	v _{IO}		2,3	01	-25 -30	+25	mV
Input bias current	IIB		1 2.3	01		15 25	μΑ
Input resistance	RIN	T _A = +25°C	4	01	200	1000	kΩ
Bandgap reference section					· · · · · · · · · · · · · · · · · · ·		
Output voltage	V _{OUT}		1,2,3	01	2.4	2.6	v
Switching performance sect	ion					_	
Maximum conversion rate	MCR		9,10,1	01	40		Msps
Minimum conversion rate	MCR		10, 11 4	01	10 10		Msps
Output propagation 5/ delay	t _{PD}	See figure 4	9 10, 11	01	<u>7.5</u>	12	_ ns
See footnotes at end of tab	le.	<u> </u>				<u>.</u>	<u> </u>
STA MICROCIRO	NDARD UIT DRAW		SIZE A			596	2-9475
DEFENSE ELECTRO		PLY CENTER	F	REVISION	EVEL	SHEE	T 5

Symbol	Conditions <u>1</u> / -55°C ≤ T _A ≤ +125°C	Group A subgroups	Device type	Lir	mits <u>2</u> /	Unit
	unless otherwise specified			Min	Max	
1						
SNR	f _{IN} = 2.3 MHz, T _A = +25°C	4	01	51		dB_
	f _{IN} = 10.3 MHz, T _A = +25°C			50		
	ENCODE = 32 Msps, f _{IN} = 2.3 MHz, T _A = +25°C	!		52		
	ENCODE = 32 Msps, f _{IN} = 10.3 MHz, T _A = +25°C			51		
SNR	f _{IN} = 2.3 MHz, T _A = +25°C	4	01	52		dB
	f _{IN} = 10.3 MHz, T _A = +25°C			51		
	ENCODE = 32 Msps, f _{IN} = 2.3 MHz, T _A = +25°C			53		
	ENCODE = 32 Msps, f _{IN} = 10.3 MHz, T _A = +25°C			53		
2nd	f _{IN} = 2.3 MHz, T _A = +25°C	4	01	56		dBc
	f _{IN} = 10.3 MHz, T _A = +25°C			56		
3rd	f _{IN} = 2.3 MHz, T _A = +25°C	4	01	58		dBc
	f _{IN} = 10.3 MHz, T _A = +25°C			58		
AU	T _A = +25°C 4/	9	01		25	ps
	SNR SNR	-55°C < TA < +125°C unless otherwise specified SNR f _{IN} = 2.3 MHz, T _A = +25°C f _{IN} = 10.3 MHz, T _A = +25°C ENCODE = 32 Msps, f _{IN} = 2.3 MHz, T _A = +25°C SNR f _{IN} = 2.3 MHz, T _A = +25°C f _{IN} = 10.3 MHz, T _A = +25°C ENCODE = 32 Msps, f _{IN} = 2.3 MHz, T _A = +25°C ENCODE = 32 Msps, f _{IN} = 2.3 MHz, T _A = +25°C ENCODE = 32 Msps, f _{IN} = 2.3 MHz, T _A = +25°C 2nd f _{IN} = 2.3 MHz, T _A = +25°C f _{IN} = 10.3 MHz, T _A = +25°C 3rd f _{IN} = 2.3 MHz, T _A = +25°C	SNR	SNR $f_{IN} = 2.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ $f_{IN} = 10.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ ENCODE = 32 Msps, $f_{IN} = 10.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ ENCODE = 32 Msps, $f_{IN} = 10.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ SNR $f_{IN} = 2.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ $f_{IN} = 10.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ ENCODE = 32 Msps, $f_{IN} = 2.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ ENCODE = 32 Msps, $f_{IN} = 2.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ ENCODE = 32 Msps, $f_{IN} = 2.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ 2nd $f_{IN} = 10.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ $f_{IN} = 10.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ 3rd $f_{IN} = 2.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ $f_{IN} = 10.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ $f_{IN} = 10.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$ $f_{IN} = 10.3 \text{ MHz}, T_A = +25^{\circ}\text{C}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	SNR

See footnotes at end of table.

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Test	C. mak a l		, T	Cac 1	Destina	1 2-	i+o 3/	l lm i e	
lest	Symbol	Conditions 1 -55°C ≤ T _A ≤ +125° unless otherwise speci		Group A subgroups	Device type	Lim:	its <u>2</u> /	Unit	
Encode input section	<u> </u>	_		<u>-</u> .			Hex		
Logic "1" voltage	V _{IN1}			1,2,3	01	4.0		v	
Logic "O" voltage	VINO			1,2,3	01		1.0	v	
Logic "1" current	I _{IN1}			1,2,3	01	-1.0	+1.0	μA	
Logic "O" current	IINO			1,2,3	01	-1.0	+1.0	μΑ	
Encode pulse width (high)	t _{EH}	See figure 4 7/	-	9 10,11 4 /	01	10 10	100	ns	
Encode pulse width (low)	t _{EL}	See figure 4 7/	-	9 10,11 <u>4</u> /	- 01	10	100	ns	
Digital output section					+			-	
Logic "1" voltage	V _{OUT 1}			1,2,3	01	4.95		v	
Logic "0" voltage	V _{OUT} 0			1,2,3	01		0.05	٧	
Power supply section				-			-		
V _{DD} supply current	1 _{DD}			1,2,3	01		20	mA	
+V _S supply current	+1s		-	2.3	01		110	mA	
-V _S supply current	-Is		_	1	01		105	mA	
Power dissipation	PD		-	1 2.3	_ 01		1.15	u	
Power supply rejection ratio	PSRR	T _A = +25°C <u>B</u> /		1	01	- 15	+15	mV/V	
See footnotes at end of tabl	e.		!						
STAN MICROCIRCI	IDARD UIT DRAW	ING	SIZE				5962	2-9475	
DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444				RE	VISION L	EVEL	SHEET	7	

TABLE I. <u>Electrical performance characteristics</u> - Continued.

- 1/ Unless otherwise specified, $+V_S = +5 \text{ V}$, $-V_S = -5 \text{ V}$, internal reference, and ENCODE = 40.5 Msps.
- 2/ The algebraic convention, whereby the most negative value is a minimum and the most positive is a maximum, is used in this table. Negative current shall be defined as conventional current flow out of a device terminal.
- 3/ Gain relative to 2.048 V_{DD} .
- 4/ This test is guaranteed by design and characterization testing over the full military temperature range.
- 5/ Output propagation delay (tpp) is measured from the 50% point of the falling edge of the encode command to the minimum/maximum voltage levels of the digital outputs with 10 pF maximum loads.
- 6/ RMS signal to rms noise with analog input signal 1.0 dB below full scale at specified frequency.
- Ty For rated performance at 40 Msps, duty cycle of encode command should be 50% ±10%.
- B/ Measured as the ratio of the change in offset voltage for a 5% change in + V_S or - V_S .
- 4.2 <u>Screening</u>. 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 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 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.
 - (2) $T_A = +125^{\circ}C$, minimum.
 - b. Interim and final electrical test parameters shall be as specified in table II herein.
 - 4.2.2 Additional criteria for device classes 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 maintained under document revision level control of the device manufacturer's Technology Review Board (TRB) in accordance with MIL-I-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.
 - b. Interim and final electrical test parameters shall be as specified in table II herein.
 - Additional screening for device class V beyond the requirements of device class Q shall be as specified in appendix B of MIL-I-38535.
- 4.3 <u>Qualification inspection for device classes Q and V</u>. 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 4.4.4).

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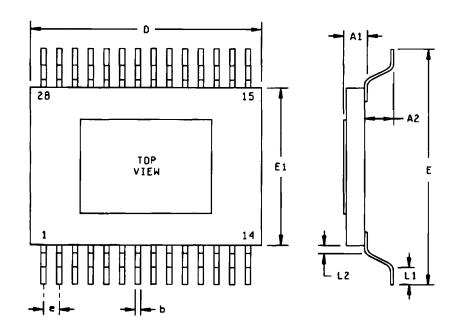


FIGURE 1. Case outline Y.

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Symbol	Millin	neters	Incl	nes
	Min_	Max	Min	Max
A1		3.175		.125
A2	.635	.889	0.025	0.035
ь	.38	.48	.015	.019
D	18.087	18.493	.712	.728
E	19.046	19.554	.750	.770
E1	2.497	2.903	.492	.508
			.050	
_ e		7 BSC	.050	 B2C
	1.016	*	.040	
L2	.762		.030	
N	_28	3	2	8

NOTE:

FIGURE 1. Case outline Y - Continued.

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The U.S. government preferred system of measurement is the metric SI system. However, since
this item was original designed using inch-pound units of measurement, in the event of conflict
between the metric and inch-pound units, the inch-pound shall take precedence.

Device type	01	
Case outlines	X and Y	
Terminal number	Terminal symbol	
1	-V	
'	-∨ _s	
2 3	GND	
3	+V _S	
4	GND	
5	V _{OUT}	
6		
	V _{REF}	
7	BPREF	
8	NC	
9	ENCODE	
10	+V _S	
11	GND	
12	-v _s	
13	A _{IN}	
	~IN	
14	GND	
15	OR	
16	D9 (MSB)	
17 18	D8 D7	
19	D6	
20	D5	
21	-v _s	
22	GND	
22 23		
	v _D	
24	D4	
25	D3	
26	D2	
27 28	D1 (158)	
20	DO (LSB)	

FIGURE 2. <u>Terminal connections</u>.

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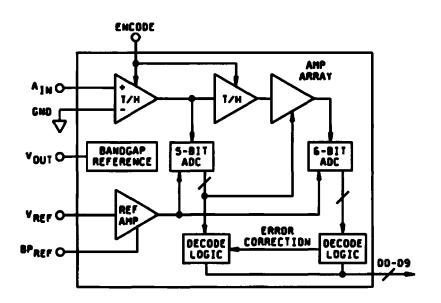
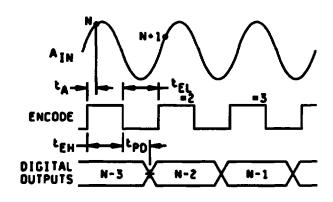


FIGURE 3. Block diagram.

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	Minimum	Typical	Maximum
t _A = aperture delay		1.9 ns	
t _{Eu} = pulse width high	10 ns		100 ns
t _{EH} = pulse width high t _{EL} = pulse width low	10 ns		100 ns

FIGURE 4. <u>liming diagram</u>.

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4.4 <u>Conformance inspection</u>. Quality conformance inspection for device class M shall be in accordance with MIL-STD-883 (see 3.1 herein) 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). 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 II herein.
- b. Subgroups 7 and 8 in table I, method 5005 of MIL-STD-883 shall be omitted.
- c. Subgroups 5 and 6 ($C_{\rm IN}$ measurement) shall be measured only for the initial test and after process or design changes which may effect input capacitance.
- 4.4.2 <u>Group C inspection</u>. 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:
 - 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 test method 1005.
 - b. $T_A = +125^{\circ}C$, minimum.
 - c. Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.
- 4.4.2.2 <u>Additional criteria for device classes Q and V</u>. 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 test circuit shall be maintained under document revision level control by the device manufacturer's TRB, in accordance with MIL-I-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.
- 4.4.3 Group D inspection. The group D inspection end-point electrical parameters shall be as specified in table 11 herein.
- 4.4.4 <u>Group E inspection</u>. 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 Q and V shall be M, D, L, R, F, G, and H and for device class M shall be M and D.
 - a. End-point electrical parameters shall be as specified in table II herein.
 - b. For device class M, the devices shall be subjected to radiation hardness assured tests as specified in MIL-I-38535, appendix A, for the RHA level being tested. For device classes Q and V, the devices or test vehicle shall be subjected to radiation hardness assured tests as specified in MIL-I-38535 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°C ±5°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 <u>Packaging requirements</u>. The requirements for packaging shall be in accordance with MIL-STD-883 (see 3.1 herein) for device class M and MIL-I-38535 for device classes Q and V.

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TABLE II. Electrical test requirements.

Subgroups (in accordance with MIL-STD-883, TM_5005, table 1)	Subgroups (in accordance with MIL-I-38535, table III)	
Device class M	Device class Q	Device class V
1	1	1
1,2,3,4, 1/ 5,6,9	1,2,3,4, 1/ 5,6,9	1,2,3,4, 1/ 5,6,9
1,2,3,4,5, 6,9,10,11	1,2,3,4,5, 6,9,10,11	1,2,3,4,5,6,9,10,11
1	1	1
1	1	1
1	1	1
	(in accordance with MIL-SID-883, TM.5005. table I) Device class M 1 1,2,3,4, 1/5,6,9 1,2,3,4,5,6,9,10,11	(in accordance with MIL-STD-883,

^{1/} PDA applies to subgroup 1.

6. NOTES

- 6.1 <u>Intended use</u>. Microcircuits conforming to this drawing are intended for use for Government microcircuit applications (original equipment), design applications, and logistics purposes.
- 6.1.1 <u>Replaceability</u>. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.
 - 6.1.2 <u>Substitutability</u>. Device class Q devices will replace device class M devices.
- 6.2 <u>Configuration control of SMD's</u>. 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 <u>Record of users</u>. 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-EC, telephone (513) 296-6047.
- 6.4 <u>Comments</u>. Comments on this drawing should be directed to DESC-EC, Dayton, Ohio 45444-5270, or telephone (513) 296-5377.

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6.5 Abbreviations, symbols, and definitions.

-V_s -5 V power supply.

GND Ground.

+V_s Analog +5 V power supply.

V_{OLIT} Internal bandgap voltage reference (nominally +2.5 V).

VRFF Noninverting input to reference amplifier. Voltage reference for ADC is connected here.

 BP_{RFF} External connection for (0.1 μ F) reference bypass capacitor.

NC No connection.

ENCODE Encode clock inputs to ADC. Internal T/H placed in hold mode (ADC is encoding) on rising edge.

 A_{TM} Noninverting input to T/H amplifier.

OR Out-of-Range condition output. Active high when analog input exceeds input range of ADC by 1 LSB (< FS - 1 LSB or > + FS + 1 LSB).

D9 (MSB) Most significant bit of ADC output; TTL/CMOS compatible.

D8 - D5 Digital output bits of ADC; TTL/CMOS compatible.

V_D Digital +5 V power supply.

D4 - D1 Digital output bits of ADC; TTL/CMOSL compatible.

DO (LSB) Least significant bit of ADC output; TTL/CMOS compatible.

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 three major microcircuit requirements documents (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 three 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 three 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 <u>Listing</u>
New MIL-H-38534 Standard Microcircuit Drawings	5962-XXXXXZZ(H or K)YY	QML - 38534	MIL-BUL-103
New MIL-I-38535 Standard Microcircuit Drawings	5962-XXXXXZZ(Q or V)YY	QML-38535	MIL-BUL-103
New 1.2.1 of MIL-STD-883 Standard Microcircuit Drawings	5962-XXXXXZZ(M)YY	MIL-BUL-103	MIL-BUL-103

6.7 Sources of supply.

- 6.7.1 <u>Sources of supply for device classes Q and V</u>. 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-EC and have agreed to this drawing.
- 6.7.2 <u>Approved sources of supply for device class M</u>. 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-EC.

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STANDARD MICROCIRCUIT DRAWING SOURCE APPROVAL BULLETIN

DATE: 95-08-11

Approved sources of supply for SMO 5962-94759 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-EC. This bulletin is superseded by the next dated revision of MIL-BUL-103.

Standard microcircuit drawing PIN	Vendor CAGE number	Vendor similar PIN <u>1</u> /
5962-9475901MXX	34031	AD9040ATQ/883B
5962-9475901MYX	34031	AD9040ATZ/883B

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

Vendor CAGE <u>number</u>

34031

Vendor name and address

Analog Devices Computer Labs Division 7910 Triad Center Drive Greensboro, NC 27409-9605

The information contained herein is disseminated for convenience only and the Government assumes no liability whatsoever for any inaccuracies in this information bulletin.