INCH-POUND
MIL-M-38510/201D
12 October 2005
SUPERSEDING
MIL-M-38510/201C
24 March 1986

MILITARY SPECIFICATION

MICROCIRCUIT, DIGITAL, 512-BIT, BIPOLAR, PROGRAMMABLE READ-ONLY MEMORY (PROM), MONOLITHIC SILICON

Inactive for new design after 24 March 1986

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product herein shall consist of this specification sheet and MIL-PRF 38535.

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic silicon, PROM microcircuits which employ thin film nichrome (NiCr) resistors as the fusible link or programming element. One product assurance class and a choice of case outlines and lead finishes are provided and are reflected in the complete part number. For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.4).

1.2 Part or Identifying Number (PIN). The PIN is in accordance with MIL-PRF-38535, and as specified herein.

1.2.1 Device types. The device types are as follows:

Device type	Circuit
01	64 word / 8 bits per word PROM with open collector
02	64 word / 8 bits per word PROM with internal pull-up resistor

1.2.2 Device class. The device class is the product assurance level as defined in MIL-PRF-38535.

1.2.3 Case outlines. The case outlines are as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	Terminals	Package style
J	GDIP1-T24 or CDIP2-T24	24	Dual-in-line
K	GDFP2-F24 or CDFP3-F24	24	Flat pack
Z 1/	GDFP7-F24 or CDFP8-F24	24	Flat pack

1/ Inactive for new design. Acceptable only for use in equipment designed or redesigned on or before 29 November 1986.

Comments, suggestions, or questions on this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAS, P. O. Box 3990, Columbus, OH 43218-3990, or emailed to bipolar@dscc.dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.daps.dla.mil

AMSC N/A FSC 5962

1.3 Absolute maximum ratings.

Supply voltage range	-0.5 V dc to +7.0 V dc
Input voltage range	-1.5 V dc at -12 mA to +5.5 V dc
Storage temperature range	-65° to +150°C
Lead temperature (soldering, 10 seconds)	+300°C
Thermal resistance, junction to case (θ_{JC}) :	
Cases J, K, and Z	See MIL-STD-1835 2/
Output supply voltage range	-0.5 V dc to +7.0 V dc
Output sink current	+30 mA
Maximum power dissipation (P_D)	575 mW dc 3/
Maximum junction temperature (T_J)	+175°C 4/

1.4 Recommended operating conditions.

Supply voltage (V_{CC})	+4.75 V dc minimum to +5.25 V dc maximum
Minimum high-level input voltage (V_{IH})	2.0 V dc
Maximum low-level input voltage (V_{IL})	0.8 V dc
Normalized fanout (each output)	6 maximum (10 mA) 5/
Case operating temperature range (T_C)	-55 °C to +125 °C

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and Standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

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

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard for Microelectronics.
MIL-STD-1835 - Interface Standard Electronic Component Case Outline

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

2/ Heat sinking is recommended to reduce the junction temperature.
3/ Must withstand the added P_D due to short circuit test (e.g. I_{OS}).
4/ Maximum junction temperature shall not be exceeded except for allowable short duration burn-in screening conditions in accordance with MIL-PRF-38535.
5/ The device shall fan out in both high and low levels to the specified number of inputs of the same device type as that being tested.

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. Microcircuits furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturers list before contract award (see 4.3 and 6.3).

3.2 Item requirements. The individual item requirements 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.

3.3 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535 and herein.

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

3.3.2 Truth table. The truth table shall be as specified on figure 2.

3.3.2.1 Unprogrammed devices. The truth table for unprogrammed devices for contracts involving no altered item drawing shall be as specified on figure 2. When required in groups A, B, or C inspection (see 4.4), the devices shall be programmed by the manufacturer prior to test in a checkerboard pattern (a minimum of 50 percent of the total number of bits programmed) or to any altered item drawing pattern which includes at least 25 percent of the total number of bits programmed.

3.3.2.2 Programmed devices. The truth table for programmed devices shall be as specified by the altered item drawing.

3.3.3 Logic diagram. The logic diagram shall be as specified on figures 3 and 4.

3.3.4 Case outlines. The case outlines shall be as specified in 1.2.3.

3.3.5 Schematic circuits. The schematic circuits shall be maintained by the manufacturer and made available to the qualifying activity and the preparing activity (DSCC-VA) upon request.

3.4 Lead material and finish. The lead material and finish shall be in accordance with MIL-PRF-38535 (see 6.6).

3.5 Electrical performance characteristics. The electrical performance characteristics are as specified in table I, and apply over the full recommended case operating temperature range, unless otherwise specified.

3.6 Electrical test requirements. The electrical test requirements shall be as specified in table II, and where applicable, the altered item drawing. The electrical tests for each subgroup are described in table III.

3.7 Marking. Marking shall be in accordance with MIL-PRF-38535.

3.8 Processing options. Since the PROM is an unprogrammed memory capable of being programmed by either the manufacturer or the user to result in a wide variety of PROM configurations, two processing options are provided for selection in the contract, using an altered item drawing.

3.8.1 Unprogrammed PROM delivered to the user. All testing shall be verified through group A testing as defined in 3.3.2.1, table II, and table III. It is recommended that users perform subgroups 7 and 9 after programming to verify the specific program configuration.

3.8.2 Manufacture-programmed PROM delivered to the user. All testing requirements and quality assurance provisions herein, including the requirements of the altered item drawing, shall be satisfied by the manufacturer prior to delivery.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55°C \le T_C \le +125°C$ unless other wise specified	Device type	Limits		Units
				Min	Max	
High-level output voltage	V_{OH}	V_{CC} =4.75 V, V_{IN} = 0.8 V, I_{OH} = 500 µA	02	2.4		V
Low-level output voltage	V_{OL}	V_{CC} =4.75 V, V_{IN} = 2.0 V,	01 (Ckt A)		0.45	V
		I_{OL} = 10 mA	01 (Ckt B), 02		0.50	
Input clamp voltage	V_{IC}	V_{CC} = 4.75 V; I_{IN}= -12 mA; T_C = +25ºC	01,02		-1.5	V
Maximum collector cut-off current	I_{CEX1}	V_{CC} = 5.25 V, V_{OH} = 2.8 V, V_{IN} = 0.8 V	01		100	µA
	I_{CEX2}	V_{CC} = 5.25 V, V_{OH} = 5.25 V, V_{IN} = 0.8 V			200	
High level input current	I_{IH1}	V_{CC} = 5.25 V, 1/ V_{IN} = 2.4 V	01, 02		60	µA
	I_{IH2}	V_{CC} = 5.25 V, 2/ V_{IN} = 5.25 V			100	
Low level input current	I_{IL}	V_{CC} = 5.25 V, 2/ V_{IN} = 0.4 V	01, 02	-0.2	-1.6	mA
Short circuit output current	I_{OS}	V_{CC} = 5.25 V, 3/ V_{IN} = 0.0 V	02	-1.6	-5.0	mA
Supply current	I_{CC}	V_{CC} = 5.25 V, V_{IN} = 0 V	01, 02		100	mA
Propagation delay time, high to low level logic, address to output	t_{PHL}	V_{CC} = 5.0 V, see figure 6	01, 02	25	140	ns
Propagation delay time, low to high level logic, address to output	t_{PLH}	V_{CC} = 5.0 V, see figure 6	01, 02	25	140	ns

1/ When testing one E input, apply GND to the other.
2/ When testing one E input, apply 5.25 V to the other.
3/ Not more than one output shall be grounded at one time.

3.9 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 14 (see Appendix A MIL-PRF-38535.)

Device types	01 and 02
Case outlines	J, K, and Z
Terminal number	Terminal symbol
1	NC
2	NC
3	A_0
4	A_1
5	A_2
6	E_1
7	E_2
8	A_3
9	A_4
10	A_5
11	G_1 (See note 1)
12	H (See notes 1 and 2)
13	G_2 (See note 1)
14	F (See notes 1 and 2)
15	B_7
16	B_6
17	B_5
18	B_4
19	B_3
20	B_2
21	B_1
22	B_0
23	G'_2 (See note 1)
24	V_{CC}

NOTES:

1. G_1, G_2 and G'_2 are connected to ground and F and H are left open for normal operation.
2. Terminal F is electrically open in device type 01, circuit A and is connected to an internal inverter (9 th bit) for device type 01, circuit B and device type 02.
3. Terminal H is electrically open in device type 01, circuit B and device type 02 and is internally connected to the base of the memory transistor for device type 01, circuit A.

FIGURE 1. Terminal connections.

Word number	INPUTS						
	E 1/	A_5	A_4	A_3	A_2	A_1	A_0
X 2/	L	X	X	X	X	X	X
X	H	X	X	X	X	X	X

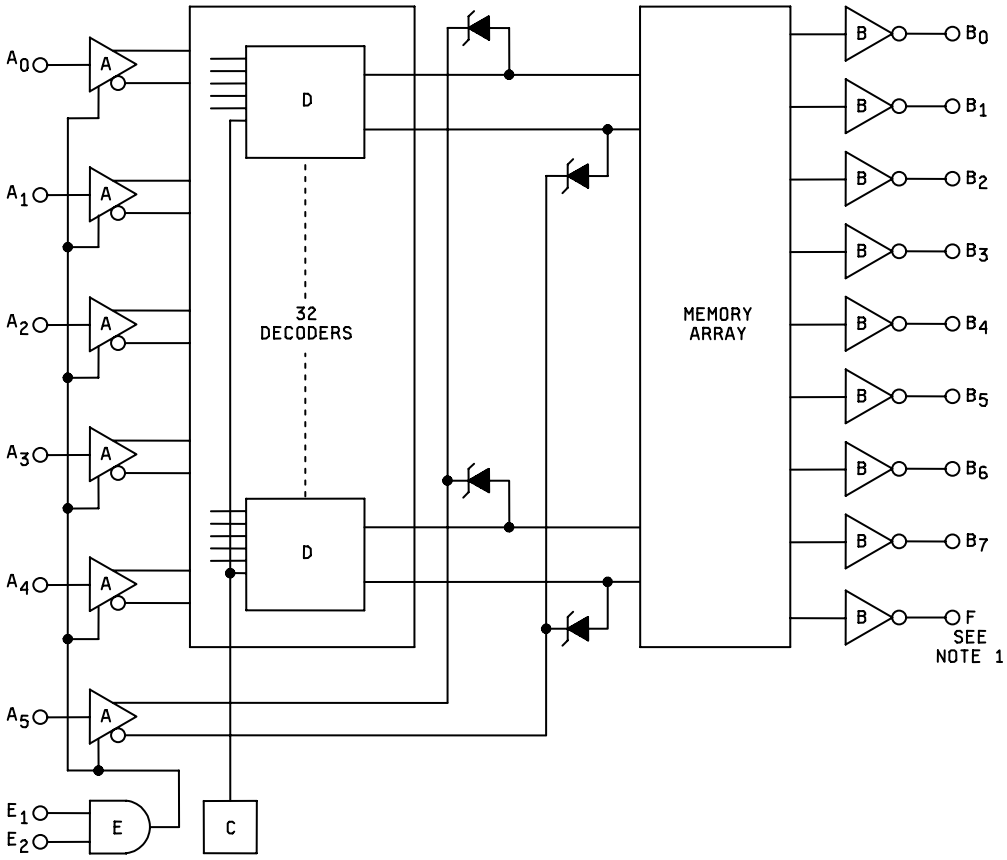
Word number	OUTPUTS							
	B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0
X 2/	H	H	H	H	H	H	H	H
X	L	L	L	L	L	L	L	L

NOTES:

1/ $E = E_1 \cdot E_2$

2/ X = Irrelevant

FIGURE 2. Truth table (unprogrammed).



NOTE:
1. Terminal F provides a 9 th bit for test purposes only.

FIGURE 3. Logic diagram for device type 01, circuit B, and device type 02.

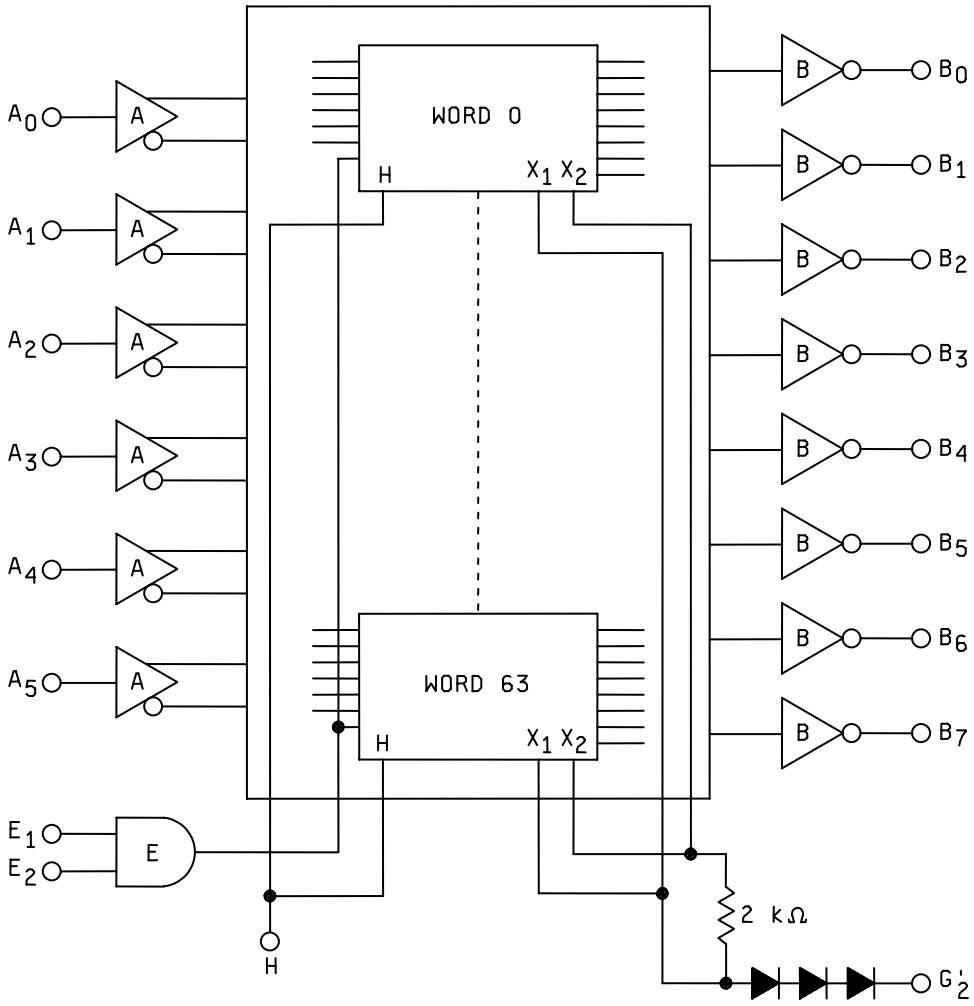
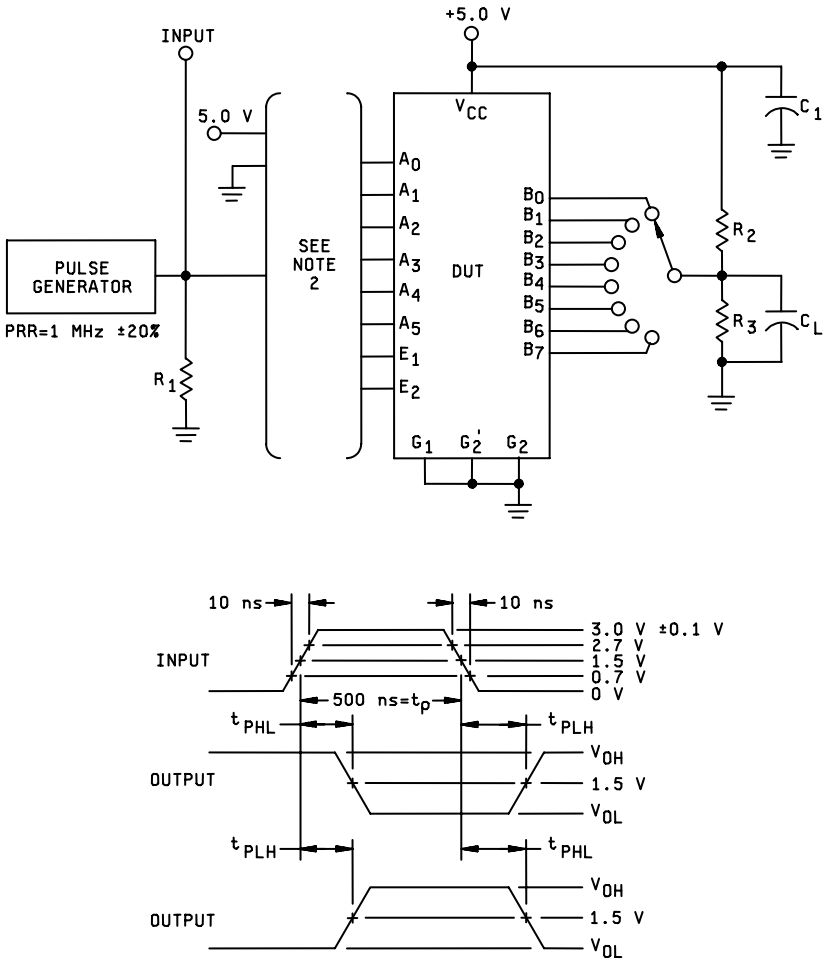


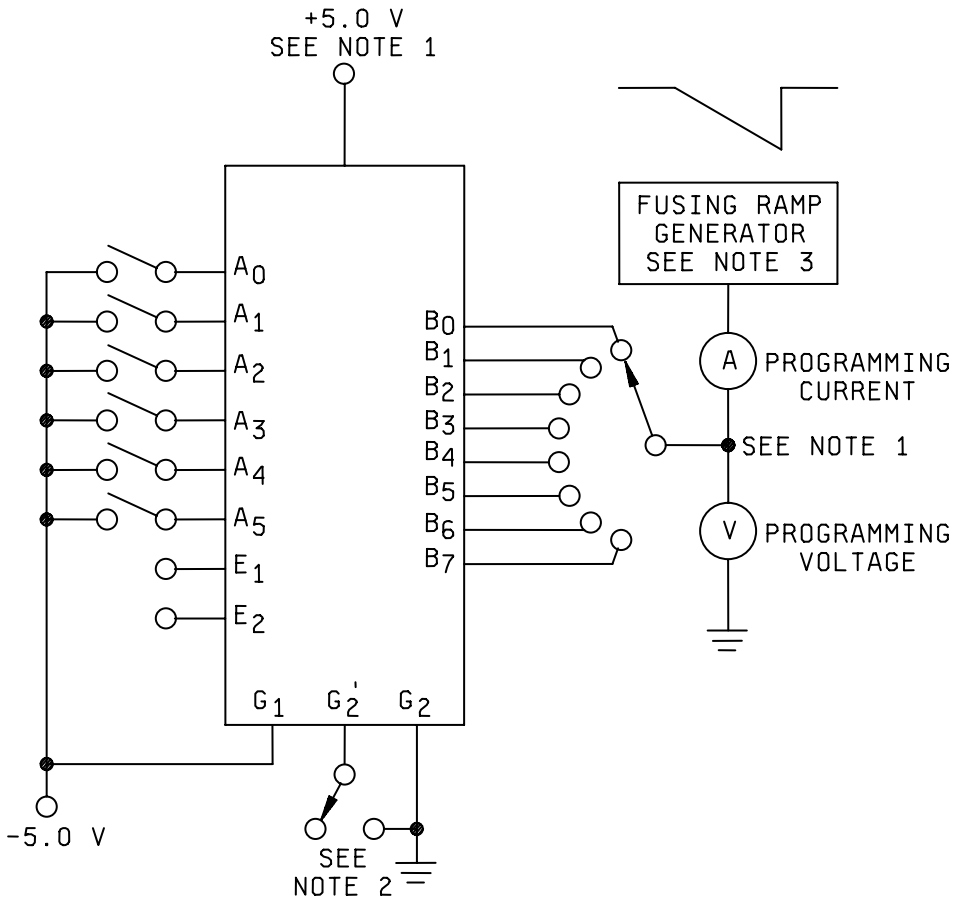
FIGURE 4. Logic diagram for device type 01, circuit A .



NOTES:

1. Pins 12 and 14 shall be left open.
2. Terminal conditions shall be as specified on table III.
3. C_1 = .05 µF ±10 percent; R_1 = 51 Ω ±5 percent; R_2 = 470 Ω ±5 percent; R_3 = 1 kΩ ±5 percent; C_L = 30 pF minimum including jig and probe capacitance.

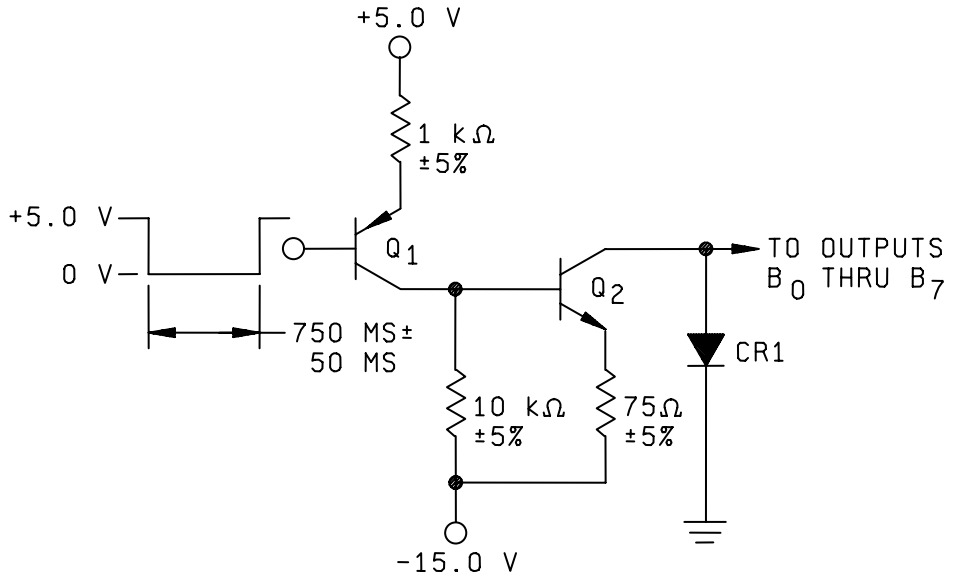
FIGURE 5. Switching time test circuit.



NOTES:

1. Connect -5.0 V to G_1 before applying V_{CC} or programming voltage.
2. For device type 01, circuit A, G'_2 shall be open, for device type 01 circuit B, and 02 G'_2 shall be 0 V.
3. Generator characteristics are defined in 4.6.

FIGURE 6a. Programming circuit.



NOTES:

1. Q_1 = 2N2907 or equivalent.
2. Q_2 = 2N1613 or equivalent.
3. CR1 = 1N4573 or equivalent.

FIGURE 6b. Alternate high speed programming circuit.

4. VERIFICATION

4.1 Sampling and inspection. 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 effect the form, fit, or function as described herein.

4.2 Screening. Screening shall be in accordance with MIL-PRF-38535 and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:

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 control by 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, except interim electrical parameter test prior to burn-in is optional at the discretion of the manufacturer.

c. Additional screening for space level product shall be as specified in MIL-PRF-38535, appendix B.

d. Class B devices processed to an altered item drawing may be programmed either before or after burn-in at the manufacturer's discretion. The required electrical testing shall include, as a minimum, the final electrical tests for programmed devices as specified in table II herein.

4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-38535.

4.4 Technology Conformance inspection (TCI). Technology conformance inspection shall be in accordance with MIL-PRF-38535 and as specified herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).

4.4.1 Group A inspection. Group A inspection shall be in accordance with table III of MIL-PRF-38535 and as follows:

a. Electrical test requirements shall be as specified in table II herein.

b. Subgroups 4, 5, and 6 shall be omitted.

c. Devices selected for testing in subgroups 9, 10, and 11 shall be programmed in accordance with 3.3.2.

d. A programmability test shall be performed when programming the sample (12 devices) used in subgroups 9, 10, and 11 (see 3.3.2.1). If more than two devices fail to program, the lot shall be rejected. If an additional sample is used (24 total devices), the lot shall be rejected if more than 4 devices fail to program.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II MIL-PRF-38535.

TABLE II. Electrical test requirements.

MIL-PRF-38535 test requirements	Subgroups (see table III) 1/, 2/, 3/ Class B devices
Interim electrical parameters	1
Final electrical test parameters for unprogrammed devices	1*, 2, 3, 7*, 8
Final electrical test parameters for programmed devices	1*, 2, 3, 7*, 8, 9,
Group A test requirements	1, 2, 3, 7, 8, 9, 10, 11
Group B end-point electrical parameters subgroup 5	N/A
Group C end-point electrical parameters	1, 2, 3, 7, 8
Group D test requirements	1, 2, 3, 7, 8

1/ * indicates PDA applies to subgroups 1 and 7.
2/ Any or all subgroups may be combined when using high-speed testers.
3/ Subgroups 7 and 8 shall consist of verifying the pattern specified.

4.4.3 Group C inspection. Group C inspection shall be in accordance with table IV of MIL-PRF-38535 and as follows:

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

b. 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 burn-in test circuit shall be maintained under document control by 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 1005 of MIL-STD-883.

c. For quality conformance inspection, the programmability sample (see 4.4.1d) shall be included in the life tests.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table V of MIL-PRF-38535. End-point electrical parameters shall be as specified in table II herein.

4.5 Methods of inspection. Methods of inspection shall be as specified in table III and as follows:

4.5.1 Voltage and current. All voltages given are referenced to the microcircuit ground terminal. Currents given are conventional and positive when flowing into the referenced terminal.

4.6 Programming. Using the test conditions of table IV, the following procedure shall be used for programming the device:

a. Connect the device as shown on figure 6a, using the fusing generator of figure 6a or the alternate circuit of figure 6b. The circuit shown on figure 6b can be used in more automated programming systems. This circuit generates a current pulse which is at the proper voltage and current levels for fast reliable programming. The input programming pulse width shall be 750 ±50 milliseconds. The number of attempts to program a given bit shall be specified in table IV.

b. To address a particular word in the memory, set the input switches to the binary equivalent of that word, where a logical low level is -5.0 V and a logical high level is an open circuit. (Do not return to supply.) All outputs bits (B_0, B_1, . . . B_7) of this word are not available for programming.

c. With the output current limited (as specified in table IV), apply a negative going current pulse to the pin associated with the first bit to be changed from a logical low level to a logical high level. This is most easily accomplished by connecting the negative terminal of a variable power supply output pin and manually increasing the voltage to approximately 6.0 volts.

d. Skipping any bit which is to remain a logical low level, repeat 4.6c for each logical low level in the word being addressed. Not more than one bit shall be programmed at a time.

e. Set the next input address and repeat 4.6c and d. This procedure is repeated for each input address for which a specific output word pattern is desired. Note that all addresses do not have to be programmed at the same time, nor do all output bits for a given address. A logical low level can always be changed to a logical high level, simply be repeating 4.6b and c. A logical low level, once programmed to a logical high level, cannot be reprogrammed.

TABLE III. Group A inspection for device types 01.

Terminal conditions (outputs not designated are open or resistive, coupled to GND or voltage; Inputs not designed are high ≥ 2.0 V, low ≤ 0.8 V or open).

Subgroup	Symbol	MIL-STD-883 method	Cases J,K,L Test no.	1 NC	2 NC	3 A_0	4 A_1	5 A_2	6 E_1	7 E_2	8 A_3	9 A_4	10 A_5	11 G_1	12 H	13 G_2	14 F	15 B_7	16 B_6	17 B_5	18 B_4	19 B_3	20 B_2	21 B_1	22 B_0	23 G'_2	24 V_{CC}	Measured terminal	Test limits Min	Test limits Max	Unit
1 1/ T_C = 25°C	V_{IC}		1			-12mA	-12mA	-12mA						GND		GND									GND	4.75V	A_0		-1.5	V
			2											"		"									"	"	A_1		"	"
			3											"		"									"	"	A_2		"	"
			4								-12mA			"		"									"	"	A_3		"	"
			5									-12mA		"		"									"	"	A_4		"	"
			6										-12mA	"		"									"	"	A_5		"	"
			7						-12mA					"		"									"	"	E_1		"	"
			8							-12mA				"		"									"	"	E_2		"	"
	I_{IL}	3009	9			0.4V	0.4V	0.4V						"		"									"	5.25V	A_0	-0.2	-1.6	mA
		"	10											"		"									"	"	A_1	"	"	"
		"	11											"		"									"	"	A_2	"	"	"
		"	12								0.4V			"		"									"	"	A_3	"	"	"
		"	13									0.4V		"		"									"	"	A_4	"	"	"
		"	14										0.4V	"		"									"	"	A_5	"	"	"
		"	15						0.4V	5.25V				"		"									"	"	E_1	"	"	"
		"	16						5.25V	0.4V				"		"									"	"	E_2	"	"	"
	I_{IH1}	3010	17			2.4V	2.4V	2.4V						"		"									"	"	A_0		60	µA
		"	18											"		"									"	"	A_1		"	"
		"	19											"		"									"	"	A_2		"	"
		"	20								2.4V			"		"									"	"	A_3		"	"
		"	21									2.4V		"		"									"	"	A_4		"	"
		"	22										2.4V	"		"									"	"	A_5		"	"
		"	23						2.4V	GND				"		"									"	"	E_1		"	"
		"	24						GND	2.4V				"		"									"	"	E_2		"	"
	I_{IH2}	"	25			5.25V	5.25V	5.25V						"		"									"	"	A_0		100	"
		"	26											"		"									"	"	A_1		"	"
		"	27											"		"									"	"	A_2		"	"
		"	28								5.25V			"		"									"	"	A_3		"	"
		"	29									5.25V		"		"									"	"	A_4		"	"
		"	30										5.25V	"		"									"	"	A_5		"	"
		"	31						5.25V	GND				"		"									"	"	E_1		"	"
		"	32						GND	5.25V				"		"									"	"	E_2		"	"
	I_{CEX1}		33						0.8V	0.8V				"		"									"	"	B_0		100	"
			34						"	"				"		"									"	"	B_1		"	"
			35						"	"				"		"									"	"	B_2		"	"
			36						"	"				"		"									"	"	B_3		"	"
			37						"	"				"		"									"	"	B_4		"	"
			38						"	"				"		"									"	"	B_5		"	"
			39						"	"				"		"									"	"	B_6		"	"
			40						"	"				"		"		2.8V	2.8V	2.8V	2.8V	2.8V	2.8V	2.8V	"	"	B_7		"	"
	I_{CEX2}		41						"	"				"		"									"	"	B_0		200	"
			42						"	"				"		"									"	"	B_1		"	"
			43						"	"				"		"									"	"	B_2		"	"
			44						"	"				"		"									"	"	B_3		"	"
			45						"	"				"		"									"	"	B_4		"	"
			46						"	"				"		"									"	"	B_5		"	"
			47						"	"				"		"									"	"	B_6		"	"
			48						"	"				"		"		5.25V	5.25V	5.25V	5.25V	5.25V	5.25V	5.25V	"	"	B_7		"	"
	I_{CC}	3005	49			GND	GND	GND	GND	GND	GND	GND	GND	"		"										"	"	V_{CC}		100	mA
	V_{OL}	3007	50						2.0V	2.0V				"		"									10mA	4.75V	B_0		2/	V
		"	51						"	"				"		"									"	"	B_1		"	"
		"	52						"	"				"		"									"	"	B_2		"	"
		"	53						"	"				"		"									"	"	B_3		"	"
		"	54						"	"				"		"									"	"	B_4		"	"
		"	55						"	"				"		"									"	"	B_5		"	"
		"	56						"	"				"		"									"	"	B_6		"	"
		"	57						"	"				"		"		10mA	10mA	10mA	10mA	10mA	10mA	10mA	"	"	B_7		"	"

See footnotes at end of table.

TABLE III. Group A inspection for device types 01 – Continued.
Terminal conditions (outputs not designated are open or resistive, coupled to GND or voltage; Inputs not designed are high ≥ 2.0 V, low ≤ 0.8 V or open).

Subgroup	Symbol	MIL-STD-883 method	Cases J,K,L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Measured terminal	Test limits		Unit
			Test no.	NC	NC	A_0	A_1	A_2	E_1	E_2	A_3	A_4	A_5	G_1	H	G_2	F	B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0	G'_2	V_{CC}		Min	Max	
2 1/	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = 125°C and V_{IC} tests are omitted.																														
3 1/	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																														
7 3/ 4/ T_C = 25°C	Truth table test		58			B	B	B	A	A	B	B	B	GND		GND		H	H	H	H	H	H	H	H	GND	4.75V				
			59			A	B	"	"	"	"	"	"	"		"		"	"	"	"	L	L	L	L	"	"				
			60			B	A	"	"	"	"	"	"	"		"		"	"	"	"	H	H	H	L	"	"				
			61			A	A	"	"	"	"	"	"	"		"		"	"	"	"	L	"	"	H	"	"				
			62			B	B	A	"	"	"	"	"	"		"		"	"	"	"	H	"	"	L	"	"				
			63			A	B	"	"	"	"	"	"	"		"		"	"	"	"	L	"	"	H	"	"				
			64			B	A	"	"	"	"	"	"	"		"		"	"	"	"	H	"	"	L	"	"				
			65			A	A	"	"	"	"	"	"	"		"		L	"	L	L	L	L	L	"	"	"				
			66			B	B	B	"	"	A	"	"	"		"		"	L	"	"	"	"	"	"	"	"				
			67			A	B	"	"	"	"	"	"	"		"		"	H	"	"	"	"	"	"	"	"				
			68			B	A	"	"	"	"	"	"	"		"		"	H	"	"	"	"	"	"	"	"				
			69			A	A	"	"	"	"	"	"	"		"		"	L	"	"	"	"	"	"	"	"				
			70			B	B	A	"	"	"	"	"	"		"		"	H	"	"	"	"	"	"	"	"				
			71			A	B	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			72			B	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			73			A	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			74			B	B	B	"	"	B	A	"	"		"		"	"	"	"	"	"	"	"	"	"				
			75			A	B	"	"	"	"	"	"	"		"		H	"	H	"	H	H	H	H	"	"				
			76			B	A	"	"	"	"	"	"	"		"		L	"	L	"	L	L	L	L	"	"				
			77			A	A	"	"	"	"	"	"	"		"		H	"	H	"	H	H	H	H	"	"				
			78			B	B	A	"	"	"	"	"	"		"		"	"	"	H	"	"	L	"	"	"				
			79			A	B	"	"	"	"	"	"	"		"		"	"	"	L	"	"	H	"	"	"				
			80			B	A	"	"	"	"	"	"	"		"		"	"	"	H	"	"	L	"	"	"				
			81			A	A	"	"	"	"	"	"	"		"		"	"	"	L	"	"	H	"	"	"				
			82			B	B	B	"	"	A	"	"	"		"		"	"	"	H	"	"	L	"	"	"				
			83			A	B	"	"	"	"	"	"	"		"		"	"	"	L	"	"	H	"	"	"				
			84			B	A	"	"	"	"	"	"	"		"		"	L	"	H	"	"	L	"	"	"				
			85			A	A	"	"	"	"	"	"	"		"		L	H	L	L	L	L	"	L	"	"				
			86			B	B	A	"	"	"	"	"	"		"		H	"	H	H	H	H	"	H	"	"				
			87			A	B	"	"	"	"	"	"	"		"		L	"	L	L	L	L	"	H	"	"				
			88			B	B	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	L	"	"				
			89			A	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			90			B	B	B	"	"	B	B	A	"		"		"	"	"	"	"	"	"	"	"	"				
			91			A	B	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			92			B	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			93			A	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			94			B	B	A	"	"	"	"	"	"		"		"	L	"	"	"	"	"	"	"	"				
			95			A	B	"	"	"	"	"	"	"		"		H	H	"	H	H	H	H	H	"	"				
			96			B	A	"	"	"	"	"	"	"		"		L	"	"	L	L	L	L	L	"	"				
			97			A	A	"	"	"	"	"	"	"		"		H	"	"	H	H	H	H	H	"	"				
			98			B	B	B	"	"	A	"	"	"		"		"	"	H	"	"	L	"	"	"	"				
			99			A	B	"	"	"	"	"	"	"		"		"	"	L	"	"	H	"	"	"	"				
			100			B	A	"	"	"	"	"	"	"		"		"	"	H	"	"	L	"	"	"	"				
			101			A	A	"	"	"	"	"	"	"		"		"	"	L	"	"	H	"	"	"	"				
			102			B	B	A	"	"	"	"	"	"		"		L	"	L	L	L	L	L	L	"	"				
			103			A	B	"	"	"	"	"	"	"		"		H	"	L	H	H	H	H	H	"	"				
			104			B	A	"	"	"	"	"	"	"		"		H	"	H	H	H	L	H	H	"	"				
			105			A	A	"	"	"	"	"	"	"		"		L	"	L	L	L	"	L	L	"	"				
			106			B	B	B	"	"	B	A	"	"		"		H	"	H	H	H	"	H	H	"	"				
			107			A	B	"	"	"	"	"	"	"		"		L	"	L	L	L	"	L	L	"	"				
			108			B	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			109			A	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			110			B	B	A	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			111			A	B	"	"	"	"	"	"	"		"		"	L	H	H	H	H	H	H	"	"				
			112			B	A	"	"	"	"	"	"	"		"		"	H	L	L	L	L	L	L	"	"				
			113			A	A	"	"	"	"	"	"	"		"		"	"	H	H	H	H	H	H	"	"				
			114			B	B	B	"	"	A	"	"	"		"		"	"	L	L	L	L	L	L	"	"				
			115			A	B	"	"	"	"	"	"	"		"		"	"	L	L	L	L	L	L	"	"				
			116			B	A	"	"	"	"	"	"	"		"		"	"	L	L	L	L	L	H	"	"				
			117			A	A	"	"	"	"	"	"	"		"		"	"	H	H	H	H	H	"	"	"				
			118			B	B	A	"	"	"	"	"	"		"		H	"	"	"	L	"	"	"	"	"				
			119			A	B	"	"	"	"	"	"	"		"		L	"	"	"	H	"	"	"	"	"				
			120			B	A	"	"	"	"	"	"	"		"		H	"	"	"	L	"	"	"	"	"				
			121			A	A	"	"	"	"	"	"	"		"		L	"	L	L	L	L	L	L	"	"				

See footnotes at end of table.

TABLE III. Group A inspection for device types 01 – Continued.
Terminal conditions (outputs not designated are open or resistive, coupled to GND or voltage; Inputs not designed are high ≥ 2.0 V, low ≤ 0.8 V or open).

Subgroup	Symbol	MIL-STD-883 method	Cases J,K,L Test no.	1 NC	2 NC	3 A_0	4 A_1	5 A_2	6 E_1	7 E_2	8 A_3	9 A_4	10 A_5	11 G_1	12 H	13 G_2	14 F	15 B_7	16 B_6	17 B_5	18 B_4	19 B_3	20 B_2	21 B_1	22 B_0	23 G'_2	24 V_{CC}	Measured terminal	Test limits Min	Test limits Max	Unit
8 T_C = 125°C and -55°C	Truth table test		122-185	Repeat subgroup 7, except T_C = +125°C.																										
			186-249	Repeat subgroup 7, except T_C = -55°C.																										
9 T_C = 25°C	t_{PHL} and t_{PLH}	3003 (Fig. 5)	250			5/	5/	5/	5.0V	IN	5/	5/	5/	GND		GND		OUT				OUT		OUT	OUT	GND	5.0V	B_0	25	85	ns
		"	251			"	"	"	"	"	"	"	"	"		"										"	"	B_1	"	"	"
		"	252			"	"	"	"	"	"	"	"	"		"										"	"	B_2	"	"	"
		"	253			"	"	"	"	"	"	"	"	"		"						OUT				"	"	B_3	"	"	"
		"	254			"	"	"	"	"	"	"	"	"		"					OUT					"	"	B_4	"	"	"
		"	255			"	"	"	"	"	"	"	"	"		"										"	"	B_5	"	"	"
		"	256			"	"	"	"	"	"	"	"	"		"			OUT	OUT						"	"	B_6	"	"	"
		"	257			"	"	"	"	"	"	"	"	"		"		OUT								"	"	B_7	"	"	"
		"	258			"	"	"	IN	5.0V	"	"	"	"		"									OUT	"	"	B_0	"	"	"
		"	259			"	"	"	"	"	"	"	"	"		"						OUT		OUT		"	"	B_1	"	"	"
		"	260			"	"	"	"	"	"	"	"	"		"							OUT			"	"	B_2	"	"	"
		"	261			"	"	"	"	"	"	"	"	"		"						OUT				"	"	B_3	"	"	"
		"	262			"	"	"	"	"	"	"	"	"		"					OUT					"	"	B_4	"	"	"
		"	263			"	"	"	"	"	"	"	"	"		"				OUT						"	"	B_5	"	"	"
		"	264			"	"	"	"	"	"	"	"	"		"			OUT							"	"	B_6	"	"	"
		"	265			"	"	"	"	"	"	"	"	"		"		OUT								"	"	B_7	"	"	"
10	Same tests and terminal conditions as for subgroup 9, except T_C = 125°C and the limits are 25 ns minimum and 140 ns maximum.																													
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																													

1/ Unprogrammed device conditions.

2/ V_{OL} = 0.45 V for circuit A and 0.50 V for circuit B.

3/ Input voltages shall be: A = 2.0 V minimum; B = 0.8 V maximum.

4/ Output voltages shall be either:

a. H = 2.4 V minimum and L = V_{OL} (V_{OL} = 0.45 V maximum for circuit A and 0.50 V maximum for circuit B) when using a high speed checker double comparator.
b. H ≥ 1.0 V and L < 1.0 V when using a high speed checker single comparator.

5/ Terminal conditions (GND or 5.0 V) shall be as specified on figure 5 or in the altered item drawing, as applicable, so that all outputs are at a low logic level.

TABLE III. Group A inspection for device types 02.

Terminal conditions (outputs not designated are open or resistive, coupled to GND or voltage; Inputs not designed are high ≥ 2.0 V, low ≤ 0.8 V or open).

Subgroup	Symbol	MIL-STD-883 method	Cases J,K,L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Measured terminal	Test limits		Unit
			Test no.	NC	NC	A_0	A_1	A_2	E_1	E_2	A_3	A_4	A_5	G_1	H	G_2	F	B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0	G'_2	V_{CC}		Min	Max	
1 1/ T_C = 25°C	V_{IC}		1			-12mA	-12mA	-12mA						GND		GND										GND	4.75V	A_0		-1.5	V
			2											"		"										"	"	A_1		"	"
			3											"		"										"	"	A_2		"	"
			4								-12mA			"		"										"	"	A_3		"	"
			5									-12mA		"		"										"	"	A_4		"	"
			6										-12mA	"		"										"	"	A_5		"	"
			7						-12mA					"		"										"	"	E_1		"	"
			8							-12mA				"		"										"	"	E_2		"	"
	I_{IL}	3009	9			0.4V	0.4V	0.4V						"		"										"	5.25V	A_0	-0.2	-1.6	mA
		"	10								0.4V			"		"										"	"	A_1	"	"	"
		"	11									0.4V		"		"										"	"	A_2	"	"	"
		"	12										0.4V	"		"										"	"	A_3	"	"	"
		"	13						0.4V	5.25V				"		"										"	"	A_4	"	"	"
		"	14						5.25V	0.4V				"		"										"	"	A_5	"	"	"
		"	15											"		"										"	"	E_1	"	"	"
		"	16											"		"										"	"	E_2	"	"	"
	I_{IH1}	3010	17			2.4V	2.4V	2.4V						"		"										"	"	A_0		60	µA
		"	18								2.4V			"		"										"	"	A_1		"	"
		"	19									2.4V		"		"										"	"	A_2		"	"
		"	20										2.4V	"		"										"	"	A_3		"	"
		"	21						2.4V	GND				"		"										"	"	A_4		"	"
		"	22						GND	2.4V				"		"										"	"	A_5		"	"
		"	23											"		"										"	"	E_1		"	"
		"	24											"		"										"	"	E_2		"	"
	I_{IH2}	"	25			5.25V	5.25V	5.25V						"		"										"	"	A_0		100	"
		"	26								5.25V			"		"										"	"	A_1		"	"
		"	27									5.25V		"		"										"	"	A_2		"	"
		"	28										5.25V	"		"										"	"	A_3		"	"
		"	29						5.25V	GND				"		"										"	"	A_4		"	"
		"	30						GND	5.25V				"		"										"	"	A_5		"	"
		"	31											"		"										"	"	E_1		"	"
		"	32											"		"										"	"	E_2		"	"
	I_{CC}	3005	33			GND	GND	GND	GND	GND	GND	GND	GND	"		"										"	"	V_{CC}		"	mA
	V_{OH}	3006	34						0.8V	0.8V				"		"										"	4.75V	B_0	2.4		V
		"	35						"	"				"		"										"	"	B_1	"		"
		"	36						"	"				"		"										"	"	B_2	"		"
		"	37						"	"				"		"										"	"	B_3	"		"
		"	38						"	"				"		"										"	"	B_4	"		"
		"	39						"	"				"		"										"	"	B_5	"		"
		"	40						"	"				"		"										"	"	B_6	"		"
		"	41						"	"				"		"										"	"	B_7	"		"
	V_{OL}	3007	42						2.0V	2.0V				"		"										"	"	B_0	2.4	0.50	mA
		"	43						"	"				"		"										"	"	B_1	"	"	"
		"	44						"	"				"		"										"	"	B_2	"	"	"
		"	45						"	"				"		"										"	"	B_3	"	"	"
		"	46						"	"				"		"										"	"	B_4	"	"	"
		"	47						"	"				"		"										"	"	B_5	"	"	"
		"	48						"	"				"		"										"	"	B_6	"	"	"
		"	49						"	"				"		"										"	"	B_7	"	"	"
	I_{OS}	3011	50						GND	GND				"		"										"	5.25V	B_0	-1.6	-5.0	"
		"	51						"	"				"		"										"	"	B_1	"	"	"
		"	52						"	"				"		"										"	"	B_2	"	"	"
		"	53						"	"				"		"										"	"	B_3	"	"	"
		"	54						"	"				"		"										"	"	B_4	"	"	"
		"	55						"	"				"		"										"	"	B_5	"	"	"
		"	56						"	"				"		"										"	"	B_6	"	"	"
		"	57						"	"				"		"										"	"	B_7	"	"	"

See footnotes at end of table.

TABLE III. Group A inspection for device types 02 - Continued.
Terminal conditions (outputs not designated are open or resistive, coupled to GND or voltage; Inputs not designed are high ≥ 2.0 V, low ≤ 0.8 V or open).

Subgroup	Symbol	MIL-STD-883 method	Cases J,K,L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Measured terminal	Test limits		Unit
			Test no.	NC	NC	A_0	A_1	A_2	E_1	E_2	A_3	A_4	A_5	G_1	W	G_2	F	B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0	G'_2	V_{CC}		Min	Max	
2 1/	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = 125°C and V_{IC} tests are omitted.																														
3 1/	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C and V_{IC} tests are omitted.																														
7 2/ 3/	Truth		58			B	B	B	A	A	B	B	B	GND		GND		H	H	H	H	H	H	H	H	GND	4.75V				
T_C =	table		59			A	B	"	"	"	"	"	"	"		"		"	"	"	"	L	L	L	L	"	"				
25°C	test		60			B	A	"	"	"	"	"	"	"		"		"	"	"	"	H	H	H	L	"	"				
			61			A	A	"	"	"	"	"	"	"		"		"	"	"	"	L	"	"	H	"	"				
			62			B	B	A	"	"	"	"	"	"		"		"	"	"	"	H	"	"	L	"	"				
			63			A	B	"	"	"	"	"	"	"		"		"	"	"	"	L	"	"	H	"	"				
			64			B	A	"	"	"	"	"	"	"		"		"	"	"	"	H	"	"	L	"	"				
			65			A	A	"	"	"	"	"	"	"		"		L	"	L	L	L	L	L	"	"	"				
			66			B	B	B	"	"	A	"	"	"		"		"	L	"	"	"	"	"	"	"	"				
			67			A	B	"	"	"	"	"	"	"		"		"	H	"	"	"	"	"	"	"	"				
			68			B	A	"	"	"	"	"	"	"		"		"	H	"	"	"	"	"	"	"	"				
			69			A	A	"	"	"	"	"	"	"		"		"	L	"	"	"	"	"	"	"	"				
			70			B	B	A	"	"	"	"	"	"		"		"	H	"	"	"	"	"	"	"	"				
			71			A	B	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			72			B	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			73			A	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			74			B	B	B	"	"	B	A	"	"		"		"	"	"	"	"	"	"	"	"	"				
			75			A	B	"	"	"	"	"	"	"		"		H	"	H	"	H	H	H	H	"	"				
			76			B	A	"	"	"	"	"	"	"		"		L	"	L	"	L	L	L	L	"	"				
			77			A	A	"	"	"	"	"	"	"		"		H	"	H	"	H	H	H	H	"	"				
			78			B	B	A	"	"	"	"	"	"		"		"	"	"	H	"	"	L	"	"	"				
			79			A	B	"	"	"	"	"	"	"		"		"	"	"	L	"	"	H	"	"	"				
			80			B	A	"	"	"	"	"	"	"		"		"	"	"	H	"	"	L	"	"	"				
			81			A	A	"	"	"	"	"	"	"		"		"	"	"	L	"	"	H	"	"	"				
			82			B	B	B	"	"	A	"	"	"		"		"	"	"	H	"	"	L	"	"	"				
			83			A	B	"	"	"	"	"	"	"		"		"	"	"	L	"	"	H	"	"	"				
			84			B	A	"	"	"	"	"	"	"		"		"	L	"	H	"	"	L	"	"	"				
			85			A	A	"	"	"	"	"	"	"		"		L	H	L	L	L	L	"	L	"	"				
			86			B	B	A	"	"	"	"	"	"		"		H	"	H	H	H	H	"	H	"	"				
			87			A	B	"	"	"	"	"	"	"		"		L	"	L	L	L	L	"	H	"	"				
			88			B	B	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	L	"	"				
			89			A	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			90			B	B	B	"	"	B	B	A	"		"		"	"	"	"	"	"	"	"	"	"				
			91			A	B	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			92			B	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			93			A	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			94			B	B	A	"	"	"	"	"	"		"		"	L	"	"	"	"	"	"	"	"				
			95			A	B	"	"	"	"	"	"	"		"		H	H	"	H	H	H	H	H	"	"				
			96			B	A	"	"	"	"	"	"	"		"		L	"	"	L	L	L	L	L	"	"				
			97			A	A	"	"	"	"	"	"	"		"		H	"	"	H	H	H	H	H	"	"				
			98			B	B	B	"	"	A	"	"	"		"		"	"	H	"	"	L	"	"	"	"				
			99			A	B	"	"	"	"	"	"	"		"		"	"	L	"	"	H	"	"	"	"				
			100			B	A	"	"	"	"	"	"	"		"		"	"	H	"	"	L	"	"	"	"				
			101			A	A	"	"	"	"	"	"	"		"		"	"	L	"	"	H	"	"	"	"				
			102			B	B	A	"	"	"	"	"	"		"		L	"	L	L	L	L	L	L	"	"				
			103			A	B	"	"	"	"	"	"	"		"		H	"	L	H	H	H	H	H	"	"				
			104			B	A	"	"	"	"	"	"	"		"		H	"	H	H	H	L	H	H	"	"				
			105			A	A	"	"	"	"	"	"	"		"		L	"	L	L	L	"	L	L	"	"				
			106			B	B	B	"	"	B	A	"	"		"		H	"	H	H	H	"	H	H	"	"				
			107			A	B	"	"	"	"	"	"	"		"		L	"	L	L	L	"	L	L	"	"				
			108			B	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			109			A	A	"	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			110			B	B	A	"	"	"	"	"	"		"		"	"	"	"	"	"	"	"	"	"				
			111			A	B	"	"	"	"	"	"	"		"		"	L	H	H	H	H	H	H	"	"				
			112			B	A	"	"	"	"	"	"	"		"		"	H	L	L	L	L	L	L	"	"				
			113			A	A	"	"	"	"	"	"	"		"		"	"	H	H	H	H	H	H	"	"				
			114			B	B	B	"	"	A	"	"	"		"		"	"	L	L	L	L	L	L	"	"				
			115			A	B	"	"	"	"	"	"	"		"		"	"	L	L	L	L	L	L	"	"				
			116			B	A	"	"	"	"	"	"	"		"		"	"	L	L	L	L	L	H	"	"				
			117			A	A	"	"	"	"	"	"	"		"		"	"	H	H	H	H	H	"	"	"				
			118			B	B	A	"	"	"	"	"	"		"		H	"	"	"	L	"	"	"	"	"				
			119			A	B	"	"	"	"	"	"	"		"		L	"	"	"	H	"	"	"	"	"				
			120			B	A	"	"	"	"	"	"	"		"		H	"	"	"	L	"	"	"	"	"				
			121			A	A	"	"	"	"	"	"	"		"		L	"	L	L	L	L	L	L	"	"				

See footnotes at end of table.

TABLE III. Group A inspection for device types 02 - Continued.
Terminal conditions (outputs not designated are open or resistive, coupled to GND or voltage; Inputs not designed are high ≥ 2.0 V, low ≤ 0.8 V or open).

Subgroup	Symbol	MIL-STD-883 method	Cases J,K,L Test no.	1 NC	2 NC	3 A_0	4 A_1	5 A_2	6 E_1	7 E_2	8 A_3	9 A_4	10 A_5	11 G_1	12 H	13 G_2	14 F	15 B_7	16 B_6	17 B_5	18 B_4	19 B_3	20 B_2	21 B_1	22 B_0	23 G'_2	24 V_{CC}	Measured terminal	Test limits Min	Test limits Max	Unit
8 T_C = 125°C and -55°C	Truth table test		122-185	Repeat subgroup 7, except T_C = +125°C.																										
			186-249	Repeat subgroup 7, except T_C = -55°C.																										
9 T_C = 25°C	t_{PHL} and t_{PLH}	3003 (Fig. 5)	250			4/	4/	4/	5.0V	IN	4/	4/	4/	GND		GND		OUT	OUT	OUT	OUT	OUT	OUT	OUT	GND	5.0V	B_0	25	85	ns
		"	251			"	"	"	"	"	"	"	"	"		"										"	"	B_1	"	"	"
		"	252			"	"	"	"	"	"	"	"	"		"										"	"	B_2	"	"	"
		"	253			"	"	"	"	"	"	"	"	"		"										"	"	B_3	"	"	"
		"	254			"	"	"	"	"	"	"	"	"		"										"	"	B_4	"	"	"
		"	255			"	"	"	"	"	"	"	"	"		"										"	"	B_5	"	"	"
		"	256			"	"	"	"	"	"	"	"	"		"										"	"	B_6	"	"	"
		"	257			"	"	"	"	"	"	"	"	"		"										"	"	B_7	"	"	"
		"	258			"	"	"	IN	5.0V	"	"	"	"		"		OUT	OUT	OUT	OUT	OUT	OUT	OUT	"	"	B_0	"	"	"
		"	259			"	"	"	"	"	"	"	"	"		"										"	"	B_1	"	"	"
		"	260			"	"	"	"	"	"	"	"	"		"										"	"	B_2	"	"	"
		"	261			"	"	"	"	"	"	"	"	"		"										"	"	B_3	"	"	"
		"	262			"	"	"	"	"	"	"	"	"		"										"	"	B_4	"	"	"
		"	263			"	"	"	"	"	"	"	"	"		"										"	"	B_5	"	"	"
		"	264			"	"	"	"	"	"	"	"	"		"										"	"	B_6	"	"	"
		"	265			"	"	"	"	"	"	"	"	"		"		OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	"	"	B_7	"	"	"
10	Same tests and terminal conditions as for subgroup 9, except T_C = 125°C and the limits are 25 ns minimum and 140 ns maximum.																													
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																													

1/ Unprogrammed device conditions.

2/ Input voltages shall be: A = 2.0 V minimum; B = 0.8 V maximum.

3/ Output voltages shall be either:

a. H = 2.4 V minimum and L = 0.5 V maximum when using a high speed checker double comparator.
b. H ≥ 1.0 V and L < 1.0 V when using a high speed checker single comparator.

4/ Terminal conditions (GND or 5.0 V) shall be as specified on figure 5 or in the altered item drawing, as applicable, so that all outputs are at a low logic level.

TABLE IV. Programming specifications.

Parameter		Value
Address input voltage	High logic level	Open circuit 1/
	Low logic level	-5.0 V
Power supply voltage		+5.0 V +5%, -0%
G_1 voltage 2/		-5.0 V
G_2 voltage		0 V
G'_2 voltage	Device type 01 (circuit A)	Open
	Device types 01 (circuit B) and 02	0 V
Maximum programming voltage		-7.0 V
Maximum programming current		100 mA
Maximum number of attempts to program a given bit		2
Maximum case temperature during programming		75°C

1/ Open collector TTL gates meet this requirements.

2/ G_1 must be connected to -5.0 V prior to applying V_{CC} or programming voltage.

5. PACKAGING

5.1 Packaging requirements. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Service or Defense Agency, or within the military service's system command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Intended use. Microcircuits conforming to this specification are intended for logistic support of existing equipment.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of the specification.

b. PIN and compliance identifier, if applicable (see 1.2).

c. Requirements for delivery of one copy of the conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.

d. Requirements for certificate of compliance, if applicable.

e. Requirements for notification of change of product or process to contracting activity in addition to notification to the qualifying activity, if applicable.

f. Requirements for failure analysis (including required test condition of method 5003 of MIL-STD-883), corrective action, and reporting of results, if applicable.

g. Requirements for product assurance options.

h. Requirements for special lead lengths, or lead forming, if applicable. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.

i. Requirement for programming the device, including processing option.

j. Requirements for "JAN" marking.

k. Packaging Requirements (see 5.1)

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List QML-38535 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DSCC-VQ, 3990 E. Broad Street, Columbus, Ohio 43218-3990.

6.4 Superseding information. The requirements of MIL-M-38510 have been superseded to take advantage of the available Qualified Manufacturer Listing (QML) system provided by MIL-PRF-38535. Previous references to MIL-M-38510 in this document have been replaced by appropriate references to MIL-PRF-38535. All technical requirements now consist of this specification and MIL-PRF-38535. The MIL-M-38510 specification sheet number and PIN have been retained to avoid adversely impacting existing government logistics systems and contractor's parts lists.

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

GND ..... Electrical ground (common terminal).
I_{IN} ..... Current flowing into an input terminal.
V_{IN} ..... Voltage level at an input terminal.
V_{IC} ..... Input clamp voltage.

6.6 Logistic support. Lead materials and finishes (see 3.4) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2), lead material and finish C (see 3.4). Longer length leads and lead forming should not affect the part number. It is intended that spare devices for logistic support be acquired in the unprogrammed condition (see 3.8.1) and programmed by the maintenance activity, except where use quantities for devices with a specific program or pattern justify stocking of preprogrammed devices.

6.7 Substitutability. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-38510 device types and may have slight physical variations in relation to case size. The presence of this information should not be deemed as permitting substitution of generic-industry types for MIL-M-38510 types or as a waiver of any of the provisions of MIL-PRF-38535.

Military device type	Generic-industry type
01	HPROM – 0512, MCM 5303
02	MCM5304

6.8 Change from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

Review activities:
Army – SM, MI
Navy - AS, CG, MC, SH TD
Air Force – 03, 19, 99

(Project 5962-2005-035)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organization and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.