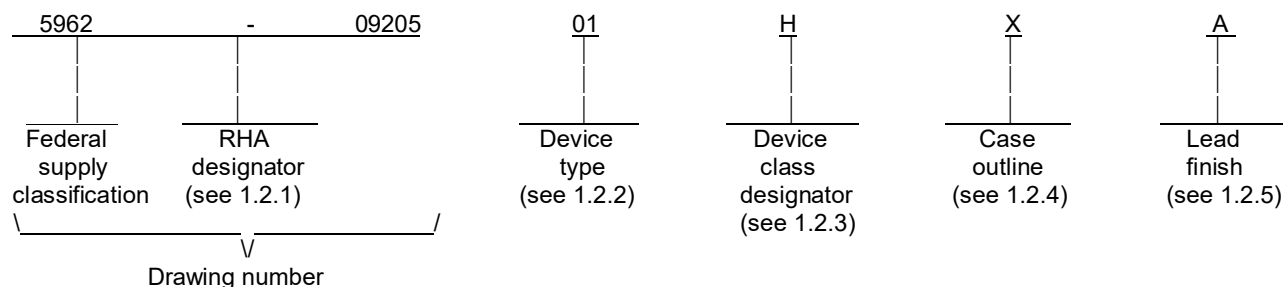


REVISIONS																				
LTR	DESCRIPTION										DATE (YR-MO-DA)				APPROVED					
A	Update drawing to the latest requirements of MIL-PRF-38534. -gc										18-03-12				Charles F. Saffle					
B	Figure 1: Case outline Y, corrected dimension A min and max from ".210" and ".245" inches to ".139" and ".186" inches and "5.33" and "6.22" mm to "3.53" and "4.72" mm. -sld										18-12-11				Charles F. Saffle					
C	Update drawing to the latest requirements of MIL-PRF-38534. -gc										25-08-04				James R. Eschmeyer					
																				
Revision Status of Sheets																				
REV																				
SHEET																				
REV	C	C	C	C	C	C	C	C												
SHEET	15	16	17	18	19	20	21	22												
REV STATUS OF SHEETS				REV		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
				SHEET		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
PMIC N/A				PREPARED BY Steve Duncan					DLA LAND AND MARITIME COLUMBUS, OHIO 43218-3990 https://www.dla.mil/LandandMaritime											
STANDARD MICROCIRCUIT DRAWING THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE AMSC N/A				CHECKED BY Greg Cecil																
				APPROVED BY Robert M. Heber					MICROCIRCUIT, MEMORY, DIGITAL, 3.3 VOLT BOOT BLOCK FLASH EPROM, 1M X 32-BIT, MONOLITHIC SILICON											
				DRAWING APPROVAL DATE 08-11-17																
				REVISION LEVEL C					SIZE A	CAGE CODE 67268		5962-09205								
										SHEET 1 OF 22										

1. SCOPE

1.1 Scope. This drawing documents five product assurance classes as defined in paragraph 1.2.3 and MIL-PRF-38534. 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 levels are reflected in the PIN.

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



1.2.1 Radiation hardness assurance (RHA) designator. RHA marked devices meet the MIL-PRF-38534 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:

<u>Device type</u>	<u>Generic number</u>	<u>Circuit function</u>	<u>Access time</u>
01	AS8FLC1M32BQT-120/Q	FLASH EPROM, 1M x 32-bit	120 ns
02	AS8FLC1M32BQT-100/Q	FLASH EPROM, 1M x 32-bit	100 ns
03	AS8FLC1M32BQT-90/Q	FLASH EPROM, 1M x 32-bit	90 ns
04	AS8FLC1M32BQT-70/Q	FLASH EPROM, 1M x 32-bit	70 ns

1.2.3 Device class designator. This device class designator is a single letter identifying the product assurance level. All levels are defined by the requirements of MIL-PRF-38534 and require QML Certification as well as qualification (Class H, K, and E) or QML Listing (Class G and D). The product assurance levels are as follows:

<u>Device class</u>	<u>Device performance documentation</u>
K	Highest reliability class available. This level is intended for use in space applications.
H	Standard military quality class level. This level is intended for use in applications where non-space high reliability devices are required.
G	Reduced testing version of the standard military quality class. This level uses the Class H screening and In-Process Inspections with a possible limited temperature range, manufacturer specified incoming flow, and the manufacturer guarantees (but may not test) periodic and conformance inspections (Group A, B, C and D).
E	Designates devices which are based upon one of the other classes (K, H, or G) with exception(s) taken to the requirements of that class. These exception(s) must be specified in the device acquisition document; therefore the acquisition document should be reviewed to ensure that the exception(s) taken will not adversely affect system performance.
D	Manufacturer specified quality class. Quality level is defined by the manufacturers internal, QML certified flow. This product may have a limited temperature range.

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

<u>Outline letter</u>	<u>Descriptive designator</u>	<u>Terminals</u>	<u>Package style</u>
X	See figure 1	68	Ceramic quad flat pack, lead formed
Y	See figure 1	66	Pin-Grid-Array (66 HIP)

1.2.5 Lead finish. The lead finish is as specified in MIL-PRF-38534.

1.3 Absolute maximum ratings. 1/

Supply voltage range (V_{CC}) 2/	-0.5 V dc to +4.0 V dc
Signal voltage range (any pin except A9) 2/	-0.5 V dc to $V_{CC} + 0.5$ V dc
Power dissipation (P_D)	0.33 W maximum at 5 MHz
Storage temperature range	-65°C to +150°C
Lead temperature (soldering, 10 seconds)	+300°C
Data retention	10 years minimum
Endurance (write/erase cycles)	100,000 cycles minimum
$\overline{RESET}$, $\overline{OE}$, and A9 voltage for auto select and sector protect (V_{ID}):	
	-0.5 V dc to +12.5 V dc 3/

1.4 Recommended operating conditions.

Supply voltage range (V_{CC})	+3.0 V dc to +3.6 V dc
Input low voltage range (V_{IL})	-0.5 V dc to +0.8 V dc
Input high voltage range (V_{IH})	+2.2 V dc to $V_{CC} + 0.3$ V dc
Case operating temperature range (T_C)	-55°C to +125°C
$\overline{RESET}$, $\overline{OE}$, and A9 voltage for auto select and sector protect (V_{ID}), ($V_{CC} = +3.3$ V):	+11.5 V dc to +12.5 V dc

2. APPLICABLE DOCUMENTS

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

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-38534 - Hybrid Microcircuits, General Specification for.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard Microcircuits.

MIL-STD-1835 - Interface Standard Electronic Component Case Outlines.

- 1/ Stresses above the absolute maximum ratings may cause permanent damage to the device. Extended operation at the maximum levels may degrade performance and affect reliability.
- 2/ Minimum DC voltage in input or I/O pins is -0.5 V dc. During voltage transitions, inputs may overshoot V_{SS} to -2.0 V dc for periods up to 20 ns. Maximum DC voltage on output and I/O pins $V_{CC} + 0.5$ V dc. During voltage transitions, outputs may overshoot to $V_{CC} + 2.0$ V dc for periods up to 20 ns.
- 3/ Minimum DC input voltage on $\overline{RESET}$, $\overline{OE}$, and A9 is -0.5 V dc. During voltage transitions, $\overline{RESET}$, $\overline{OE}$, and A9 may overshoot V_{SS} to -2.0 V dc for periods up to 20 ns. Maximum DC input voltage on A9 is +13.5 V which may overshoot to +14.0 V dc for periods up to 20 ns.

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DEPARTMENT OF DEFENSE HANDBOOKS

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

(Copies of these documents are available online at <https://quicksearch.dla.mil>)

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

3. REQUIREMENTS

3.1 Item requirements. The individual item performance requirements for device classes D, E, G, H, and K shall be in accordance with MIL-PRF-38534. Compliance with MIL-PRF-38534 shall include the performance of all tests herein or as designated in the device manufacturer's Quality Management (QM) plan or as designated for the applicable device class. The manufacturer may eliminate, modify or optimize the tests and inspections herein, however the performance requirements as defined in MIL-PRF-38534 shall be met for the applicable device class. In addition, the modification in the QM plan shall not affect the form, fit, or function of the device for the applicable device class.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38534 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 Terminal connections. The terminal connections shall be as specified on figure 2.

3.2.3 Truth table(s). The truth table(s) shall be as specified on figure 3.

3.2.4 Timing diagrams. The timing diagram(s) shall be specified on figures 4, 5, and 6.

3.2.5 Block diagram. The block diagram shall be as specified on figure 7.

3.2.6 Output load circuit. The output load circuit shall be as specified on figure 8.

3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full specified 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 Programming procedure. The programming procedure shall be as specified by the manufacturer and shall be available upon request.

3.6 Marking of device(s). Marking of device(s) shall be in accordance with MIL-PRF-38534. The device shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's vendor similar PIN may also be marked.

3.7 Data. In addition to the general performance requirements of MIL-PRF-38534, the manufacturer of the device described herein shall maintain the electrical test data (variables format) from the initial quality conformance inspection group A lot sample, for each device type listed herein. Also, the data should include a summary of all parameters manually tested, and for those which, if any, are guaranteed. This data shall be maintained under document revision level control by the manufacturer and be made available to the preparing activity (DLA Land and Maritime -VA) upon request.

3.8 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to supply to this drawing. The certificate of compliance (original copy) submitted to DLA Land and Maritime -VA shall affirm that the manufacturer's product meets the performance requirements of MIL-PRF-38534 and herein.

3.9 Certificate of conformance. A certificate of conformance as required in MIL-PRF-38534 shall be provided with each lot of microcircuits delivered to this drawing.

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3.10 Endurance. A reprogrammability test shall be completed as part of the vendor's reliability monitors. This reprogrammability test shall be done for the initial characterization and after any design process changes which may affect the reprogrammability of the device. The methods and procedures may be vendor specific, but shall guarantee the number of program/erase cycles listed in section 1.3 herein over the full military temperature range as specified herein. The vendors procedure shall be kept under document control and shall be made available upon request of the acquiring or preparing activity.

3.11 Data retention. A data retention stress test shall be completed as part of the vendor's reliability monitors. This test shall be done for the initial characterization and after any design or process change which may affect data retention. The methods and procedures may be vendor specific, but shall guarantee the number of years listed in section 1.3 herein over the full military temperature range as specified herein. The vendor's procedure shall be kept under document control and shall be made available upon request of the acquiring or preparing activity.

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TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions <u>1/ 2/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
DC parameters							
Input leakage current	I _{LI}	V _{CC} = 3.6 V dc, V _{IN} = GND to V _{CC}	1,2,3	All		5	μA
Output leakage current	I _{LO}	V _{CC} = 3.6 V dc, V _{IN} = GND to V _{CC}	1,2,3	All		5	μA
V _{CC} active current for read	I _{CC1}	$\overline{CS} = V_{IL}, \overline{OE} = V_{IH},$ f = 8 MHz, V _{CC} = 3.6 V dc	1,2,3	All		70	mA
		$\overline{CS} = V_{IL}, \overline{OE} = V_{IH},$ f = 14 MHz, V _{CC} = 3.6 V dc				120	mA
V _{CC} active current for Program or erase <u>3/</u>	I _{CC2}	$\overline{CS} = V_{IL}, \overline{OE} = V_{IH},$ V _{CC} = 3.6 V dc	1,2,3	All		140	mA
V _{CC} standby current	I _{CC3}	V _{CC} = 3.6 V dc, $\overline{CS} = V_{IH},$ f = 5 MHz, $\overline{RESET} = V_{CC} \pm 0.3 \text{ V}$	1,2,3	All		0.25	mA
Input low level <u>3/</u>	V _{IL}		1,2,3	All	-0.5	0.8	V
Input high level <u>3/</u>	V _{IH}		1,2,3	All	2.2	V _{CC} + 0.3 V	V
Output low voltage	V _{OL}	V _{CC} = 4.5 V dc, I _{OL} = 12.0 mA	1,2,3	All		0.45	V
Output high voltage	V _{OH}	V _{CC} = 4.5 V dc, I _{OH} = -2.0 mA	1,2,3	All	2.4		V
Low V _{CC} , lockout voltage	V _{LKO}		1,2,3	All	2.3	2.5	V
Dynamic characteristics							
Address capacitance <u>3/</u>	C _{AD}	V _{IN} = 0 V dc, f = 1.0 MHz, T _A = +25°C	4	All		40	pF
Output enable <u>3/</u> Capacitance	C _{OE}	V _{IN} = 0 V dc, f = 1.0 MHz, T _A = +25°C	4	All		40	pF
See footnotes at end of table.							
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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions <u>1/ 2/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Dynamic characteristics - continued							
Write enable <u>3/</u> Capacitance	C _{WE}	V _{IN} = 0 V dc, f = 1.0 MHz, T _A = +25°C	4	All		15	pF
Chip select capacitance <u>3/</u>	C _{CS}	V _{IN} = 0 V dc, f = 1.0 MHz, T _A = +25°C	4	All		15	pF
Data I/O capacitance <u>3/</u>	C _{I/O}	V _{IN} = 0 V dc, f = 1.0 MHz, T _A = +25°C	4	All		15	pF
Functional testing							
Functional tests		See 4.3.1c	7,8A,8B	All			
Read cycle AC timing characteristics							
Read cycle time <u>3/</u>	t _{RC}	See figure 4	9,10,11	01 02 03 04	120 100 90 70		ns
Address access time	t _{ACC}	See figure 4	9,10,11	01 02 03 04		120 100 90 70	ns
Chip select access time	t _{CE}	See figure 4	9,10,11	01 02 03 04		120 100 90 70	ns
Output enable to output valid	t _{OE}	See figure 4	9,10,11	01 02 03 04		40 35 35 30	ns
Output hold from address, CS or OE change, <u>3/</u> Whichever is first	t _{OH}	See figure 4	9,10,11	All	0		ns
Latency between read and write operations	t _{SRW}	See figure 4	9,10,11	All	20		ns
See footnotes at end of table.							
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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions <u>1/ 2/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Write/Erase/ Program AC timing characteristics $\overline{WE}$ controlled							
Write cycle time <u>3/</u>	t _{WC}	See figure 5	9,10,11	01 02 03 04	120 100 90 70		ns
Chip select setup time	t _{CS}	See figure 5	9,10,11	All	0		ns
Write enable pulse width	t _{WP}	See figure 5	9,10,11	All	35		ns
Address setup time	t _{AS}	See figure 5	9,10,11	All	0		ns
Data setup time	t _{DS}	See figure 5	9,10,11	01,02	45		ns
				03	40		
				04	35		
Data hold time	t _{DH}	See figure 5	9,10,11	All	0		ns
Address hold time	t _{AH}	See figure 5	9,10,11	All	45		ns
Write enable pulse width <u>3/</u> High	t _{WPH}	See figure 5	9,10,11	All	30		ns
Write/Erase/Program AC timing characteristics $\overline{CS}$ controlled							
Write cycle time <u>3/</u>	t _{WC}	See figure 6	9,10,11	01 02 03 04	120 100 90 70		ns
Write enable setup time	t _{WS}	See figure 6	9,10,11	All	0		ns
See footnotes at end of table.							
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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions <u>1/ 2/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Write/Erase/ Program AC timing characteristics $\overline{\text{CS}}$ controlled - continued							
Chip select pulse width	t _{CP}	See figure 6	9,10,11	All	35		ns
Address setup time	t _{AS}	See figure 6	9,10,11	All	0		ns
Data hold time	t _{DH}	See figure 6	9,10,11	All	0		ns
Data setup time	t _{DS}	See figure 6	9,10,11	01,02	45		ns
				03	40		
				04	35		
Address hold time	t _{AH}	See figure 6	9,10,11	All	45		ns
Chip select pulse width <u>3/</u> High	t _{CPH}	See figure 6	9,10,11	All	30		ns

1/ Unless otherwise specified, 3.0 V dc ≤ V_{CC} ≤ 3.6 V dc and V_{SS} = 0 V.

2/ Unless otherwise specified, the DC test conditions are as follows:

Input pulse levels: V_{IH} = V_{CC} - 0.3 V and V_{IL} = 0.3 V.

Unless otherwise specified, the AC test conditions are as follows:

Input pulse levels: V_{IL} = 0 V and V_{IH} = 3.0 V.

Input rise and fall times: 5 nanoseconds.

Input and output timing reference levels: 1.5 V.

3/ Parameters shall be tested as part of device characterization and after design and process changes. Parameters shall be guaranteed to the limits specified in table I for all lots not specifically tested.

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Case outline X.

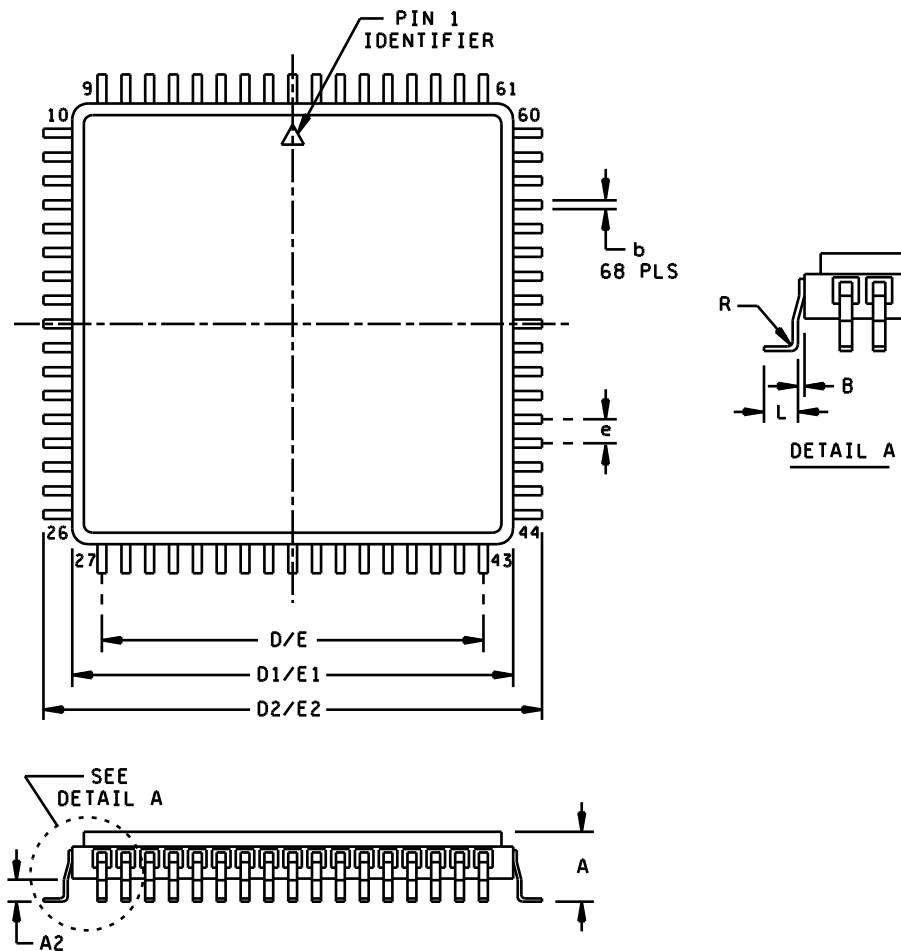


FIGURE 1. Case outline(s).

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Case outline X - Continued.

Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	3.05	3.56	.120	.140
A2	0.13	0.38	.005	.015
B	.25 REF		.010 REF	
b	0.15	0.25	.006	.010
D/E	20.32 BSC		.800 BSC	
D1/E1	22.10	22.61	.870	.890
D2/E2	24.89	25.40	.980	1.000
e	1.27 BSC		.050 BSC	
L	0.89	1.14	.035	.045
R	0.25 TYP		.010 TYP	

NOTES:

1. The U.S preferred system of measurement is the metric SI. This item was designed using inch-pound units of measurement. In case of problems involving conflicts between the metric and inch-pound units, the inch-pound units shall rule.

FIGURE 1. Case outline(s) – Continued.

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Case outline Y.

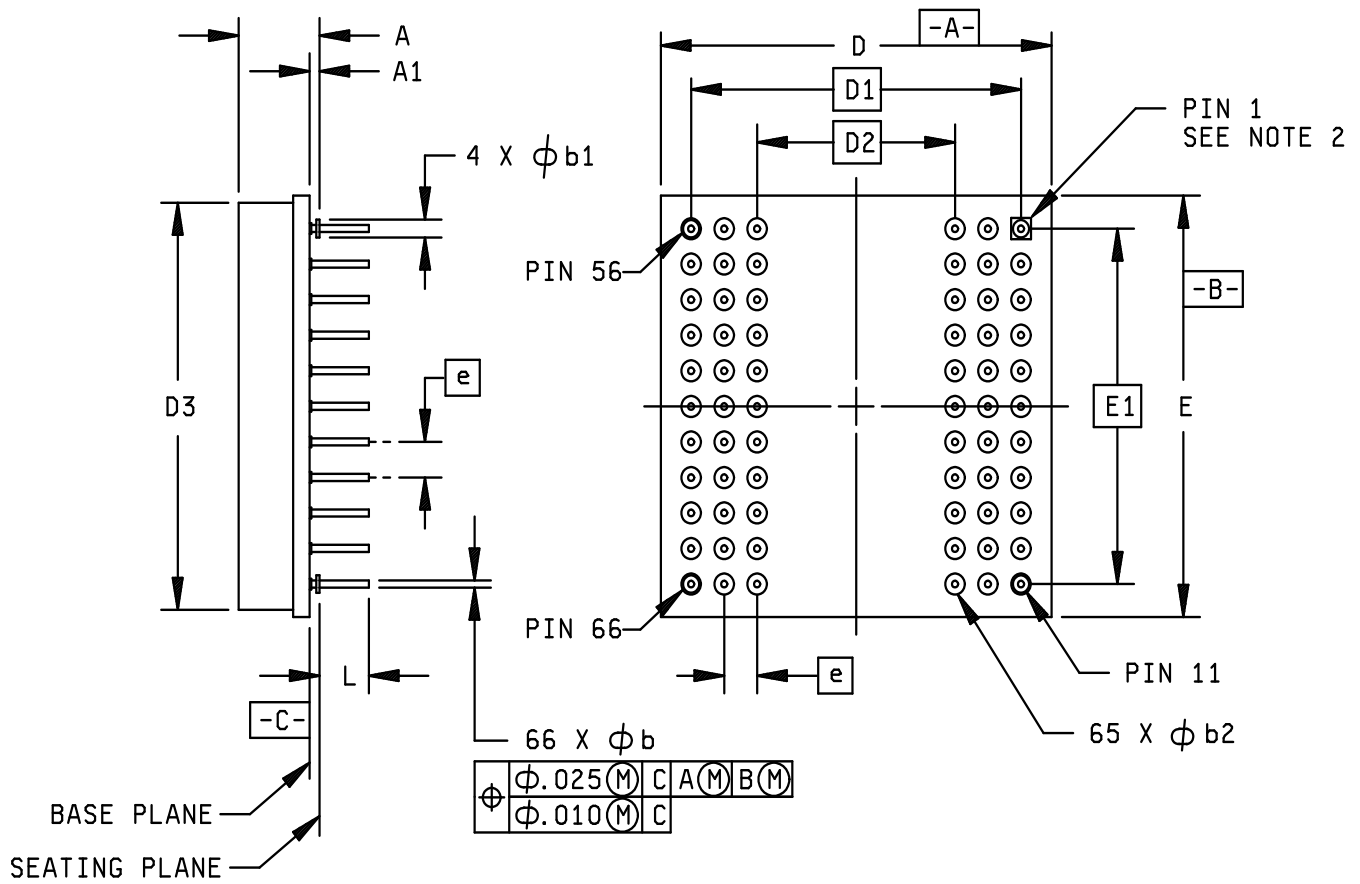


FIGURE 1. Case outline(s) - Continued.

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Case outline Y - Continued.

Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	3.53	4.72	.139	.186
A1	0.64	0.89	.025	.035
Øb	0.41	0.51	.016	.020
Øb1	1.14	1.40	.045	.055
Øb2	1.65	1.91	.065	.075
D/E	29.72	30.48	1.170	1.200
D1/E1	25.40 BSC		1.000 BSC	
D2	15.24 BSC		.600 BSC	
D3	28.96	29.21	1.140	1.150
e	2.54 BSC		.100 BSC	
L	3.68	3.94	.145	.155

NOTES:

1. The U.S. preferred system of measurement is the metric SI. This item was designed using inch-pound units of measurement. In case of problems involving conflicts between the metric and inch-pound units, the inch-pound units shall rule.
2. Pin 1 is identified by a .070 square pad.
3. Pin numbers are for reference only.

FIGURE 1. Case outlines - Continued.

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Device types	All	Device types	All	Device types	All	Device types	All
Case outline	X	Case outline	X	Case outline	X	Case outline	X
Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol
1	GND	18	GND	35	$\overline{\text{OE}}$	52	GND
2	$\overline{\text{CS3}}$	19	DQ8	36	$\overline{\text{CS2}}$	53	DQ23
3	A5	20	DQ9	37	A17	54	DQ22
4	A4	21	DQ10	38	$\overline{\text{WE2}}$	55	DQ21
5	A3	22	DQ11	39	$\overline{\text{WE3}}$	56	DQ20
6	A2	23	DQ12	40	$\overline{\text{WE4}}$	57	DQ19
7	A1	24	DQ13	41	A18	58	DQ18
8	A0	25	DQ14	42	A19	59	DQ17
9	$\overline{\text{RESET}}$	26	DQ15	43	NC	60	DQ16
10	DQ0	27	V _{CC}	44	DQ31	61	V _{CC}
11	DQ1	28	A11	45	DQ30	62	A10
12	DQ2	29	A12	46	DQ29	63	A9
13	DQ3	30	A13	47	DQ28	64	A8
14	DQ4	31	A14	48	DQ27	65	A7
15	DQ5	32	A15	49	DQ26	66	A6
16	DQ6	33	A16	50	DQ25	67	$\overline{\text{WE1}}$
17	DQ7	34	$\overline{\text{CS1}}$	51	DQ24	68	$\overline{\text{CS4}}$

Note: NC = No connection

FIGURE 2. Terminal connections.

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Device type	All	Device type	All	Device type	All	Device type	All
Case outline	Y	Case outline	Y	Case outline	Y	Case outline	Y
Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol
1	DQ8	18	A15	35	DQ25	52	NC
2	DQ9	19	V _{CC}	36	DQ26	53	$\overline{\text{CS3}}$
3	DQ10	20	$\overline{\text{CS1}}$	37	A7	54	GND
4	A14	21	A19	38	A12	55	DQ19
5	A16	22	DQ3	39	NC	56	DQ31
6	A11	23	DQ15	40	A13	57	DQ30
7	A0	24	DQ14	41	A8	58	DQ29
8	A18	25	DQ13	42	DQ16	59	DQ28
9	DQ0	26	DQ12	43	DQ17	60	A1
10	DQ1	27	$\overline{\text{OE}}$	44	DQ18	61	A2
11	DQ2	28	A17	45	V _{CC}	62	A3
12	$\overline{\text{RESET}}$	29	$\overline{\text{WE1}}$	46	$\overline{\text{CS4}}$	63	DQ23
13	$\overline{\text{CS2}}$	30	DQ7	47	NC	64	DQ22
14	GND	31	DQ6	48	DQ27	65	DQ21
15	DQ11	32	DQ5	49	A4	66	DQ20
16	A10	33	DQ4	50	A5		
17	A9	34	DQ24	51	A6		

NOTE: NC is a no connection

FIGURE 2. Terminal connections. - Continued.

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$\overline{\text{RESET}}$	$\overline{\text{CS1}}$	$\overline{\text{CS2}}$	$\overline{\text{CS3}}$	$\overline{\text{CS4}}$	$\overline{\text{WE1}}$	$\overline{\text{WE2}}$	$\overline{\text{WE3}}$	$\overline{\text{WE4}}$	$\overline{\text{OE}}$	OPERATION	ADDRESSES	DATA BUS
H	L	H	H	H	H	H	H	H	L	READ	A0-Ax In	DQ0-DQ7 Out
	H	L	H	H								DQ8-DQ15 Out
	H	H	L	H								DQ16-DQ31 Out
	H	H	H	L								DQ24-DQ31 Out
	L	L	L	L								DQ0-DQ31 Out
H	L	H	H	H	L	H	H	H	H	WRITE	A0-Ax In	DQ0-DQ7 In
	H	L	H	H	H	L	H	H				DQ8-DQ15 In
	H	H	L	H	H	H	L	H				DQ16-DQ31 In
	H	H	H	L	H	H	H	L				DQ24-DQ31 In
	L	L	L	L	L	L	L	L				DQ0-DQ31 In
$V_{CC} \pm 0.3 \text{ V}$	$V_{CC} \pm 0.3 \text{ V}$	$V_{CC} \pm 0.3 \text{ V}$	$V_{CC} \pm 0.3 \text{ V}$	$V_{CC} \pm 0.3 \text{ V}$	X	X	X	X	X	Standby	X	
X	L	L	L	L	H	H	H	H	H	Output Disable	X	
L	X	X	X	X	X	X	X	X	X	Reset	X	
VID	L	L	L	L	L	L	L	L	H	Sector Protect	Sector Address A7=L, A2=H, A1=L	D _{IN} , D _{OUT}
VID	L	L	L	L	L	L	L	L	H	Sector Unprotect	Sector Address A7=L, A2=H, A1=L	D _{IN} , D _{OUT}
VID	X	X	X	X	X	X	X	X	X	Temporary Sector Unprotect	A _{IN}	D _{IN}

NOTE: L = logic low = V_{IL} , H = logic high = V_{IH} , VID = $12.0 \pm 0.5 \text{ V}$, X = Don't Care, A_{IN} = Address In, D_{OUT} = Data Out.

FIGURE 3. Truth table.

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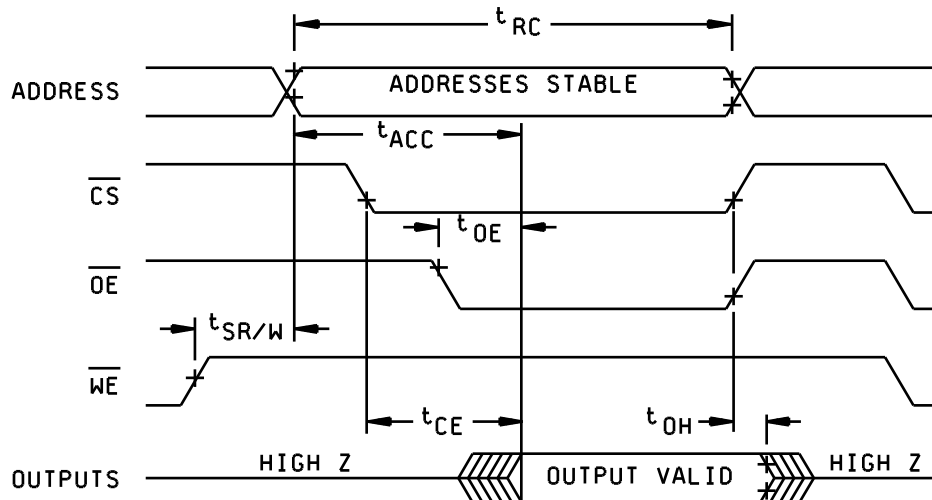
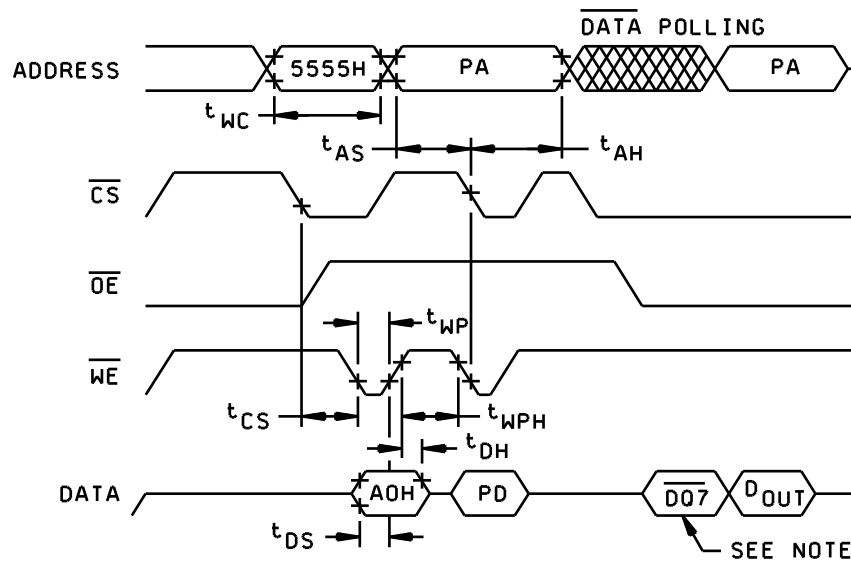


FIGURE 4. Write cycle timing diagram, $\overline{WE}$ controlled.



NOTE: $\overline{DQ7}$ of each die including DQ15, DQ23, and DQ31.

FIGURE 5. Write cycle timing diagram, $\overline{WE}$ controlled.

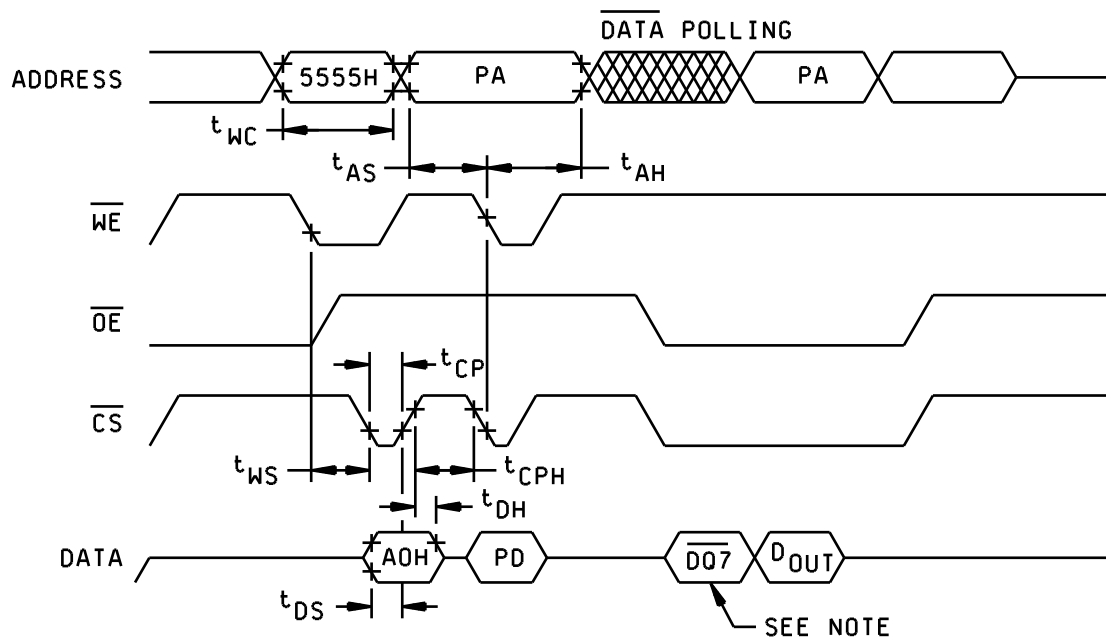
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NOTE: $\overline{DQ7}$ of each die including DQ15, DQ23, and DQ31.

FIGURE 6. Write cycle timing diagram, $\overline{CS}$ controlled.

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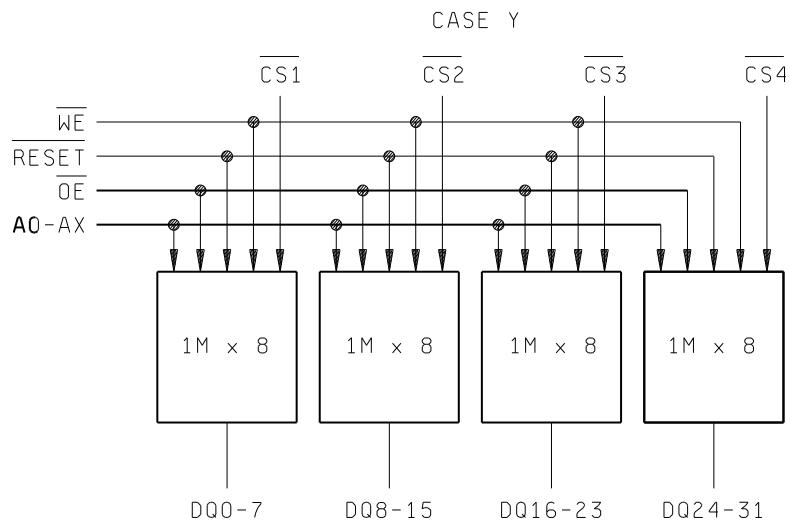
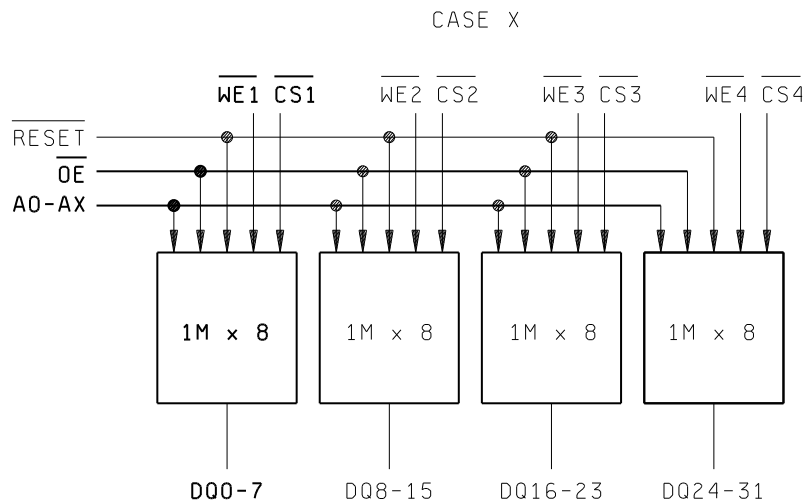


FIGURE 7. Block diagram.

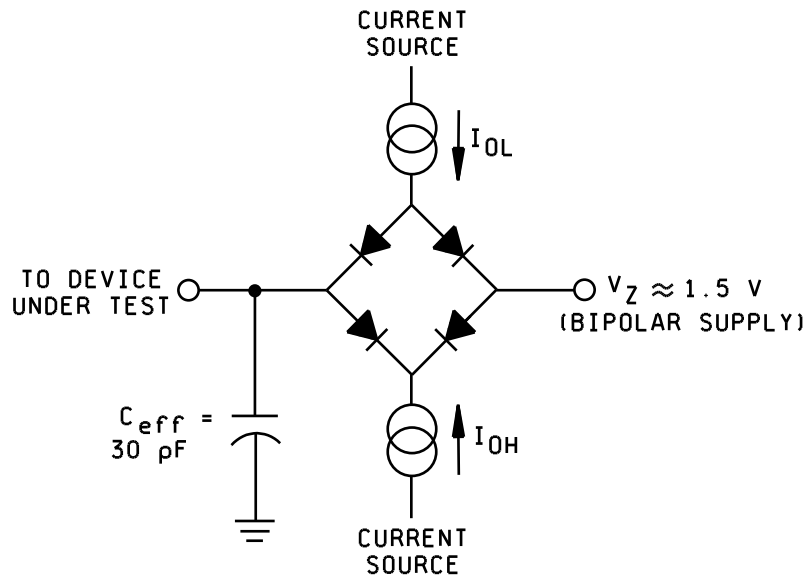
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Parameter	Typ.	Unit
Input pulse level	$V_{IL} = 0 \text{ V}$, $V_{IH} = 3.0 \text{ V}$	V
Input rise and fall	5	ns
Input and output reference level	1.5	V
Timing reference level	1.5	V

NOTES:

1. V_Z is programmable from -2 V to +7 V.
2. I_{OL} and I_{OH} are programmable from 0 to 16 mA.
3. Tester impedance is $Z_0 = 50 \text{ ohms}$.
4. V_Z is typically the midpoint of V_{OL} and V_{OH} .
5. I_{OL} and I_{OH} are adjusted to simulate a typical resistive load circuit.
6. ATE tester includes jig capacitance.

FIGURE 8. Output load circuit.

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TABLE II. Electrical test requirements.

MIL-PRF-38534 test requirements	Subgroups (in accordance with MIL-PRF-38534, group A test table)
Interim electrical parameters	1,4,7,9
Final electrical parameters	1*, 2,3,4,7,8A,8B,9,10,11
Group A test requirements	1,2,3,4,7,8A,8B,9,10,11
Group C end-point electrical parameters	1,2,3,4,7,8A,8B,9,10,11
End-point electrical parameters for Radiation Hardness Assurance (RHA) devices	Not applicable

* PDA applies to subgroup 1.

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-38534 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.

4.2 Screening. Screening shall be in accordance with MIL-PRF-38534. The following additional criteria shall apply:

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

- (1) Test condition B. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DLA Land and Maritime-VA or the acquiring activity upon request. Also, 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) TA as specified in accordance with table I of method 1015 of MIL-STD-883.

b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

4.3 Conformance and periodic inspections. Conformance inspection (CI) and periodic inspection (PI) shall be in accordance with MIL-PRF-38534 and as specified herein.

4.3.1 Group A inspection (CI). Group A inspection shall be in accordance with MIL-PRF-38534 and as follows:

- a. Tests shall be as specified in table II herein.
- b. Subgroups 5 and 6 shall be omitted.
- c. Subgroups 7 and 8 shall include verification of the truth table on figure 3.

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4.3.2 Group B inspection (PI). Group B inspection shall be in accordance with MIL-PRF-38534.

4.3.3 Group C inspection (PI). Group C inspection shall be in accordance with MIL-PRF-38534 and as follows:

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

b. Steady-state life test, method 1005 of MIL-STD-883.

(1) Test condition B. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DLA Land and Maritime-VA or the acquiring activity upon request. Also, 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.

(2) TA as specified in accordance with table I of method 1005 of MIL-STD-883.

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

4.3.4 Group D inspection (PI). Group D inspection shall be in accordance with MIL-PRF-38534.

4.3.5 Radiation Hardness Assurance (RHA) inspection. RHA inspection is not currently applicable to this drawing.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-PRF-38534.

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.

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

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished using DD Form 1692, Engineering Change Proposal, or email communication.

6.4 Record of users. Military and industrial users should inform DLA Land and Maritime when a system application requires configuration control and the applicable SMD to that system. DLA Land and Maritime 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 DLA Land and Maritime-VA, telephone (614) 692-8108.

6.5 Comments. Comments on this drawing should be directed to DLA Land and Maritime-VA, Columbus, Ohio 43218-3990, or telephone (614) 692-1081.

6.6 Sources of supply. Sources of supply are listed in MIL-HDBK-103 and QML-38534. The vendors, listed in MIL-HDBK-103 and QML-38534, have submitted a certificate of compliance (see 3.7 herein) to DLA Land and Maritime-VA and have agreed to this drawing.

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STANDARD MICROCIRCUIT DRAWING BULLETIN

DATE: 25-08-04

Approved sources of supply for SMD 5962-09205 are listed below for immediate acquisition information only and shall be added to MIL-HDBK-103 and QML-38534 during the next revisions. MIL-HDBK-103 and QML-38534 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 DLA Land and Maritime -VA. This information bulletin is superseded by the next dated revisions of MIL-HDBK-103 and QML-38534. DLA Land and Maritime maintains an online database of all current sources of supply <https://landandmaritimeapps.dla.mil/programs/Smcr/>.

Standard microcircuit drawing PIN <u>1</u> /	Vendor CAGE number	Vendor Similar PIN <u>2</u> /
5962-0920501HXA 5962-0920501HXC 5962-0920501HYA 5962-0920501HYC	<u>3</u> / <u>3</u> / <u>3</u> / <u>3</u> /	AS8FLC1M32BQT-120/Q AS8FLC1M32BQT-120/Q AS8FLC1M32BP-120/Q AS8FLC1M32BP-120/Q
5962-0920502HXA 5962-0920502HXC 5962-0920502HYA 5962-0920502HYC	<u>3</u> / <u>3</u> / <u>3</u> / <u>3</u> /	AS8FLC1M32BQT-100/Q AS8FLC1M32BQT-100/Q AS8FLC1M32BP-100/Q AS8FLC1M32BP-100/Q
5962-0920503HXA 5962-0920503HXC 5962-0920503HYA 5962-0920503HYC	<u>3</u> / <u>3</u> / <u>3</u> / <u>3</u> /	AS8FLC1M32BQT-90/Q AS8FLC1M32BQT-90/Q AS8FLC1M32BP-90/Q AS8FLC1M32BP-90/Q
5962-0920504HXA 5962-0920504HXC 5962-0920504HYA 5962-0920504HYC	<u>3</u> / <u>3</u> / <u>3</u> / <u>3</u> /	AS8FLC1M32BQT-70/Q AS8FLC1M32BQT-70/Q AS8FLC1M32BP-70/Q AS8FLC1M32BP-70/Q
5962-0920501HXA 5962-0920501HXC 5962-0920501HYA 5962-0920501HYC	57300 57300 57300 57300	AS8FLC1M32BQ-120 AS8FLC1M32BQ-120 AS8FLC1M32BP-120 AS8FLC1M32BP-120
5962-0920502HXA 5962-0920502HXC 5962-0920502HYA 5962-0920502HYC	57300 57300 57300 57300	AS8FLC1M32BQ-100 AS8FLC1M32BQ-100 AS8FLC1M32BP-100 AS8FLC1M32BP-100
5962-0920503HXA 5962-0920503HXC 5962-0920503HYA 5962-0920503HYC	57300 57300 57300 57300	AS8FLC1M32BQ-90 AS8FLC1M32BQ-90 AS8FLC1M32BP-90 AS8FLC1M32BP-90
5962-0920504HXA 5962-0920504HXC 5962-0920504HYA 5962-0920504HYC	57300 57300 57300 57300	AS8FLC1M32BQ-70 AS8FLC1M32BQ-70 AS8FLC1M32BP-70 AS8FLC1M32BP-70

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

STANDARD MICROCIRCUIT DRAWING BULLETIN – Continued.

DATE: 25-08-04

Vendor CAGE
Number

57300

Vendor name
and address

Micross Components
1810 South Orange Blossom Trail
Apopka, FL 32703

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