

REVISIONS			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
F	Added device type 11. Added vendor CAGE code 0EU86 for device types 05 through 09. -sld	99-09-07	Raymond Monnin
G	Add note to paragraph 1.2.2 and table I, conditions. Add case outline 9.	00-04-06	Raymond Monnin
H	Correct figure 1, case outline M diagram, adding dimension "c", lead thickness. Change figure 1, case outline M, A2 maximum dimension from 0.015" to 0.025" and clarify A2 dimension in note 3.	00-06-14	Raymond Monnin
J	Figure 1, case outline 9; changed the min limit for dimensions D2/E2 from 0.990 inches to 0.980 inches. Added vendor cage 88379 for the case outline 9. Updated paragraph 1.2.3 to describe the five class levels. -sld	01-05-06	Raymond Monnin
K	Added device types 12 through 18. -sld	01-11-14	Raymond Monnin
L	Added case outline A -sld	03-02-21	Raymond Monnin
M	Added case outline B. Added note to paragraph 1.2.4. -sld.	03-09-22	Raymond Monnin
N	Re-inserted case outline 9 drawing to figure 1. -sld.	04-01-07	Raymond Monnin

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REV																				
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SHEET																				
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REV	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
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SHEET	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29					
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REV STATUS OF SHEETS	REV			N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	SHEET			1	2	3	4	5	6	7	8	9	10	11	12	13	14			

PMIC N/A	PREPARED BY Steve L. Duncan	DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216 http://www.dsccl.dla.mil
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STANDARD MICROCIRCUIT DRAWING	CHECKED BY Michael C. Jones
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THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE AMSC N/A	APPROVED BY Kendall A. Cottongim	MICROCIRCUIT, HYBRID, MEMORY, DIGITAL, STATIC RANDOM ACCESS MEMORY, CMOS, 128K x 32-BIT
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DRAWING APPROVAL DATE 95-07-19	
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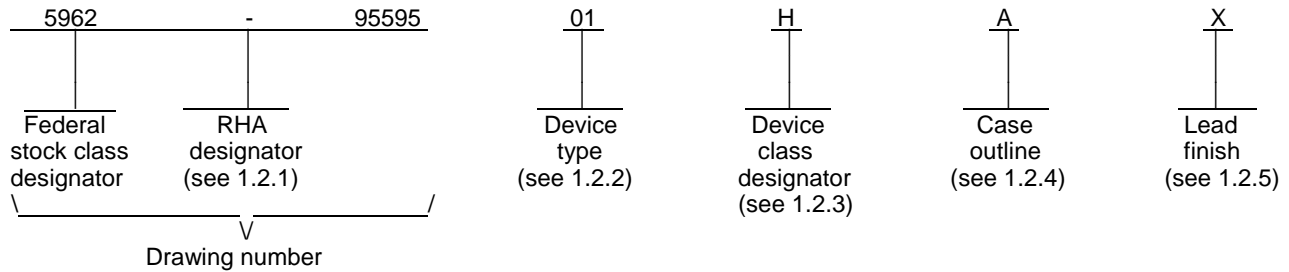
REVISION LEVEL N	SIZE A	CAGE CODE 67268	5962-95595
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1. SCOPE

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 which 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 shall be as shown in the following example:



1.2.1 Radiation hardness assurance (RHA) designator. RHA marked devices shall meet the MIL-PRF-38534 specified RHA levels and shall be marked with the appropriate RHA designator. A dash (-) indicates a non-RHA device.

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

<u>Device type 1/</u>	<u>Generic number</u>	<u>Circuit function</u>	<u>Access time</u>
01	128K32-120	SRAM, 128K x 32-BIT	120 ns
02	128K32-100	SRAM, 128K x 32-BIT	100 ns
03	128K32-85	SRAM, 128K x 32-BIT	85 ns
04	128K32-70	SRAM, 128K x 32-BIT	70 ns
05,12	128K32-55	SRAM, 128K x 32-BIT	55 ns
06,13	128K32-45	SRAM, 128K x 32-BIT	45 ns
07,14	128K32-35	SRAM, 128K x 32-BIT	35 ns
08,15	128K32-25	SRAM, 128K x 32-BIT	25 ns
09,16	128K32-20	SRAM, 128K x 32-BIT	20 ns
10,17	128K32-17	SRAM, 128K x 32-BIT	17 ns
11,18	128K32-15	SRAM, 128K x 32-BIT	15 ns

1.2.3 Device class designator. This device class designator shall be 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).

1/ Due to the nature of the 4 transistor design of the die used in these device types, topologically pure testing is important, particularly for high reliability applications. The device manufacturer should be consulted concerning their testing methods and algorithms.

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- 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.

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

<u>Outline letter</u>	<u>Descriptive designator</u>	<u>Terminals</u>	<u>Package style</u>
A	See figure 1	68	Co-fired ceramic, single cavity, quad flat pack
B	See figure 1	68	Ceramic, quad flatpack
M <u>1/ 2/</u>	See figure 1	68	Ceramic, quad flatpack, single/dual cavity
N	See figure 1	68	Co-fired ceramic, single cavity, ultra low profile, quad flat pack
X	See figure 1	68	Ceramic, quad flatpack
Y	See figure 1	68	Ceramic, quad flatpack, low profile
Z	See figure 1	68	Ceramic, quad flatpack, dual cavity
9 <u>2/</u>	See figure 1	68	Ceramic, quad flatpack

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

1.3 Absolute maximum ratings. 3/

Supply voltage range (V_{CC})	-0.5 V dc to +7.0 V dc
Signal voltage range (any pin)	-0.5 V dc to +7.0 V dc
Power dissipation (P_D):	
Device types 01 through 08, and 12 through 15.....	2.75 W maximum
Device types 09, 10, 11, 16, 17, and 18.....	3.30 W maximum
Thermal resistance junction-to-case (θ_{JC}):	
Case outlines X and Y	6.6°C/W
Case outline M.....	10°C/W
Case outlines A and N.....	2.72°C/W
Case outline Z	8°C/W
Case outlines B and 9	4.9°C/W
Storage temperature	-65°C to +150°C
Lead temperature (soldering, 10 seconds).....	+300°C

1.4 Recommended operating conditions.

Supply voltage (V_{CC})	+4.5 V dc to +5.5 V dc
Input low voltage range (V_{IL})	-0.3 V dc to +0.8 V dc
Input high voltage range (V_{IH})	+2.2 V dc to V_{CC} +0.5 V dc
Output low voltage, maximum (V_{OL}).....	+0.4 V dc
Output high voltage, minimum (V_{OH}).....	+2.4 V dc
Case operating temperature range (T_C).....	-55°C to +125°C

1/ The case outline M is available in either a single or dual cavity package.

2/ Due to the short leads of case outlines M (single cavity) and case outline 9, caution should be taken if the system application is to be used where extreme thermal transitions can occur. Case outline A can be used if longer leads are necessary.

3/ 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.

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2. APPLICABLE DOCUMENTS

2.1 Government specification, standards, and handbooks. The following specification, standards, and handbooks form a part of this drawing to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation.

SPECIFICATION

DEPARTMENT OF DEFENSE

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

STANDARDS

DEPARTMENT OF DEFENSE

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

HANDBOOKS

DEPARTMENT OF DEFENSE

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

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

2.2 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. Nothing in this document, however, supercedes 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 may 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. Therefore, the tests and inspections herein may not be performed for the applicable device class (see MIL-PRF-38534). Furthermore, the manufacturer may take exceptions or use alternate methods to the tests and inspections herein and not perform them. However, the performance requirements as defined in MIL-PRF-38534 shall be met 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 diagram(s). The timing diagram(s) shall be as specified on figures 4 and 5.

3.2.5 Block diagram(s). The block diagram(s) shall be as specified on figure 6.

3.2.6 Output load circuit. The output load circuit shall be as specified on figure 7.

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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 described in table I.

3.5 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 as listed in MIL-HDBK-103 and QML-38534.

3.6 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 (DSCC-VA) upon request.

3.7 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 DSCC-VA shall affirm that the manufacturer's product meets the performance requirements of MIL-PRF-38534 and herein.

3.8 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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TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions 1/ 2/ -55°C ≤ T _C ≤ +125°C V _{SS} = 0 V dc +4.5 V dc ≤ V _{CC} ≤ +5.5 V dc unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
DC parameters							
Supply current 32-bit mode	I _{CC32}	$\overline{CS} = V_{IL}, \overline{OE} = V_{IH},$ V _{CC} = +5.5 V dc f = 5 MHz CMOS compatible	1,2,3	01,02 03,04 05-18		120 120 600	mA
Standby current	I _{SB}	$\overline{CS} = V_{IH}, \overline{OE} = V_{IH},$ V _{CC} = +5.5 V dc f = 5 MHz CMOS compatible	1,2,3	01,02 03,04 05-08 12-15 09-11 16-18		2.4 5.0 60 60 80 80	mA
Input leakage current	I _{LI}	V _{CC} = +5.5 V dc, V _{IN} = GND or V _{CC}	1,2,3	All		10	μA
Output leakage current	I _{LO}	$\overline{CS} = V_{IH}, \overline{OE} = V_{IH},$ V _{IN} = GND or V _{CC}	1,2,3	All		10	μA
Output low voltage	V _{OL}	V _{CC} = +4.5 V dc, I _{OL} = 2.1 mA	1,2,3	01-07, 12-14		0.4	V
		V _{CC} = +4.5 V dc, I _{OL} = 8 mA		08-11, 15-18		0.4	
Output high voltage	V _{OH}	V _{CC} = +4.5 V dc, I _{OL} = -1.0 mA	1,2,3	01-07, 12-14	2.4		V
		V _{CC} = +4.5 V dc, I _{OL} = -4.0 mA		08-11, 15-18	2.4		
Data retention characteristics							
Data retention supply voltage	V _{DR}	$\overline{CS} \geq V_{CC} - 0.2$ V dc	1,2,3	All	2.0	5.5	V
Data retention current	I _{CCDR1}	V _{CC} = 3 V dc	1,2,3	01-04		1.6	mA
				05-11		11.6	
				12-18		20.0	
See footnotes at end of table.							
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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ 2/ -55°C ≤ T _C ≤ +125°C V _{SS} = 0 V dc +4.5 V dc ≤ V _{CC} ≤ +5.5 V dc unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Capacitance							
\overline{OE} capacitance 3/	C _{OE}	V _{IN} = 0 V dc, f = 1.0 MHz, T _A = +25°C	4	All		50	pF
\overline{WE} capacitance 3/	C _{WE}	V _{OUT} = 0 V dc, f = 1.0 MHz, T _A = +25°C, Case outlines X and Y	4	All		50	pF
		V _{OUT} = 0 V dc, f = 1.0 MHz, T _A = +25°C, Case outlines A, B, M, N, Z, and 9				20	
\overline{CS} capacitance 3/	C _{CS}	V _{IN} = 0 V dc, f = 1.0 MHz, T _A = +25°C	4	All		20	pF
D ₀₋₃₁ capacitance 3/	C _{I/O}	V _{OUT} = 0 V dc, f = 1.0 MHz, T _A = +25°C	4	All		20	pF
A ₀₋₁₆ capacitance 3/	C _{AD}	V _{OUT} = 0 V dc, f = 1.0 MHz, T _A = +25°C	4	All		50	pF
Functional tests							
Functional tests		See 4.3.1c	7,8A,8B	All			
Read cycle timing characteristics							
Read cycle timing	t _{RC}	See figure 4	9,10,11	01 02 03 04 05,12 06,13 07,14 08,15 09,16 10,17 11,18	120 100 85 70 55 45 35 25 20 17 15		ns
See footnotes at end of table.							
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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ 2/ -55°C ≤ T _C ≤ +125°C V _{SS} = 0 V dc +4.5 V dc ≤ V _{CC} ≤ +5.5 V dc unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Read cycle timing characteristics - Continued.							
Address access timing	t _{AA}	See figure 4	9,10,11	01 02 03 04 05,12 06,13 07,14 08,15 09,16 10,17 11,18		120 100 85 70 55 45 35 25 20 17 15	ns
Output hold from address change	t _{OH}	See figure 4	9,10,11	01-04 05-18	5 0		ns
Chip select access timing	t _{ACS}	See figure 4	9,10,11	01 02 03 04 05,12 06,13 07,14 08,15 09,16 10,17 11,18		120 100 85 70 55 45 35 25 20 17 15	ns
Output enable to output valid	t _{OE}	See figure 4	9,10,11	01 02 03 04 05,12 06,13 07,14 08,15 09,16 10,11 17,18		60 50 45 35 30 25 20 15 12 10 10	ns

See footnote at end of table.

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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ 2/ -55°C ≤ T _C ≤ +125°C V _{SS} = 0 V dc +4.5 V dc ≤ V _{CC} ≤ +5.5 V dc unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Write cycle AC timing characteristics.							
Write cycle time	t _{wc}	See figure 5	9,10,11	01 02 03 04 05,12 06,13 07,14 08,15 09,16 10,17 11,18	120 100 85 70 55 45 35 25 20 17 15		ns
Chip select to end of write	t _{cw}	See figure 5	9,10,11	01 02 03 04 05,12 06,13 07,14 08,15 09,16 10,11 17,18	100 80 75 60 45 30 25 20 15 14 14		ns
Address valid to end of write	t _{AW}	See figure 5	9,10,11	01 02 03 04 05,12 06,13 07,14 08,15 09,10 16,17 11,18	100 80 75 60 45 30 25 20 15 15 14		ns
Data valid to end of write	t _{DW}	See figure 5	9,10,11	01 02 03 04 05,06 12,13 07,14 08,15 09,16 10,11 17,18	50 40 35 30 25 25 20 15 12 10 10		ns

See footnotes at end of table.

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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions <u>1/</u> <u>2/</u> -55°C ≤ T _C ≤ +125°C V _{SS} = 0 V dc +4.5 V dc ≤ V _{CC} ≤ +5.5 V dc unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Write cycle AC timing characteristics - Continued.							
Address setup time	t _{AS}	See figure 5	9,10,11	01-04 05-18	5 0		ns
Write pulse width	t _{WP}	See figure 5	9,10,11	01 02 03 04 05,12 06,13 07,14 08,15 09,16 10,11 17,18	80 70 55 50 45 30 25 20 15 14 14		ns
Address hold time	t _{AH}	See figure 5	9,10,11	01-04 05-18	5 0		ns
Output active from end of write	t _{OW}	See figure 5	9,10,11	01-04 05-07 12-14 08-11 15-18	5 4 4 3 3		ns
Data hold time	t _{DH}	See figure 5	9,10,11	All	0		ns

1/ Due to the nature of the 4 transistor design of the die used in these device types, topologically pure testing is important, particularly for high reliability applications. The device manufacturer should be consulted concerning their testing methods and algorithms.

2/ 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 level: 1.5 V ± 0.5 V
 Output loading: see figure 7.
 Unless otherwise specified, the DC test conditions are as follows:
 V_{IL} = 0.3 V and V_{IH} = V_{CC} - 0.3 V

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

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Case outline A.

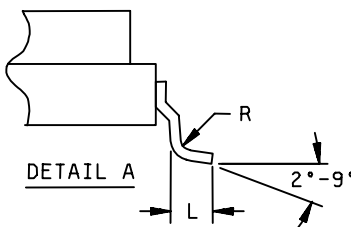
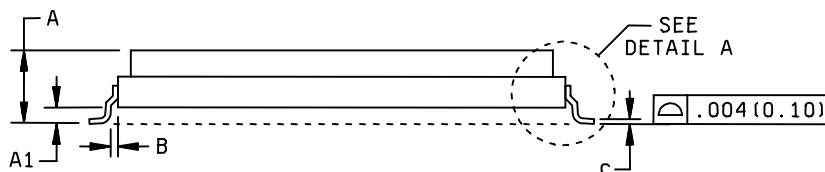
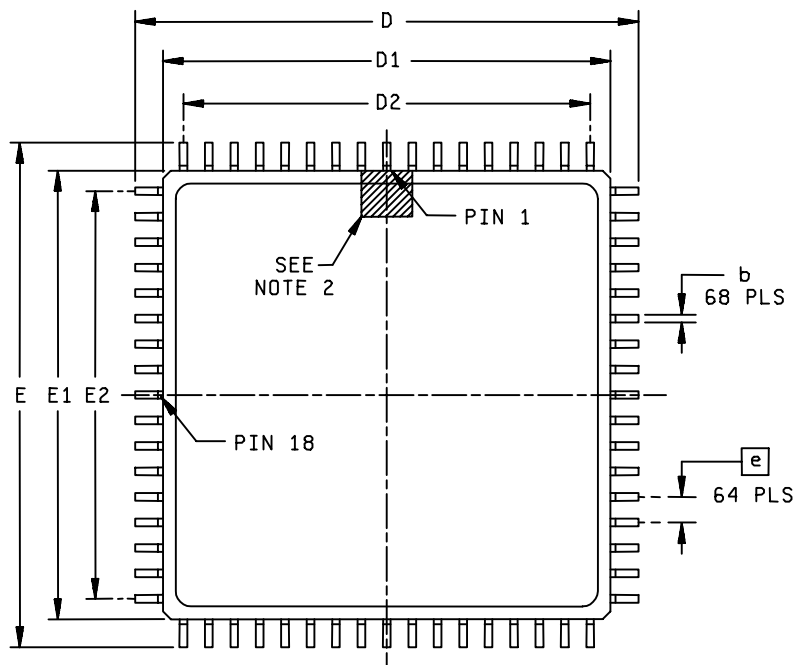


FIGURE 1. Case outlines.

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Case outline A - Continued.

Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A		5.10		.200
A1	1.37		.054	
b	0.33	0.43	.013	.017
B	0.25 TYP		.010 TYP	
c	0.23	0.30	.009	.012
D/E	24.9	25.4	.980	1.000
D1/E1	22.10	22.61	.870	.890
D2/E2	20.32 BSC		.800 BSC	
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.
2. Details of pin 1 identifier are optional, but must be located within the zone indicated.

FIGURE 1. Case outlines - Continued.

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Case outlines M and Z.

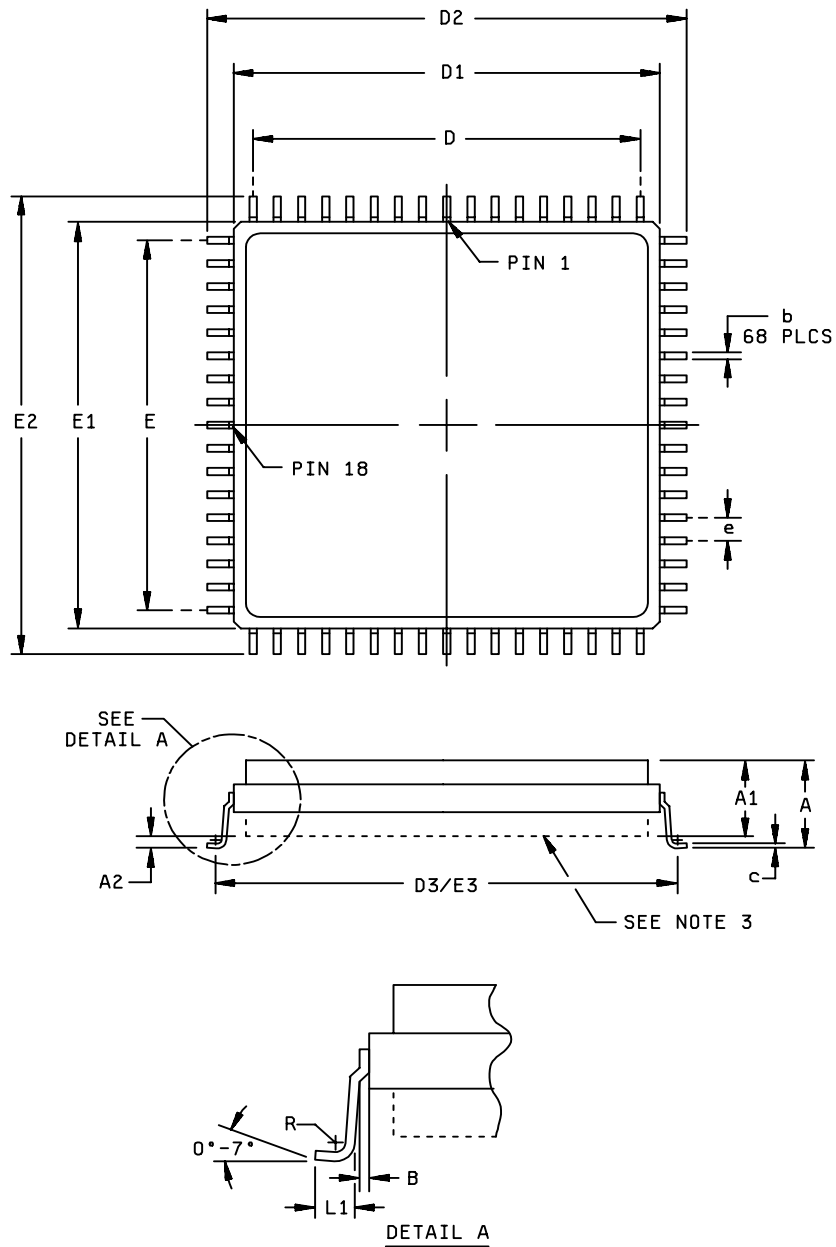


FIGURE 1. Case outline(s).

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Case outline M - Continued.

Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	3.12	5.08	.123	.200
A1	2.30	4.72	.118	.186
A2	0.13	0.64	.005	.025
B	0.25 REF		.010 REF	
b	0.33	0.43	.013	.017
c	0.15	0.30	.006	.012
D/E	20.32 BSC		.800 BSC	
D1/E1	22.10	22.61	.870	.890
D2/E2	24.89	25.40	.980	1.000
D3/E3	23.77	24.28	.936	.956
e	1.27 BSC		.050 BSC	
R	0.13		.005	
L1	0.89	1.14	.035	.045

Case outline Z - Continued.

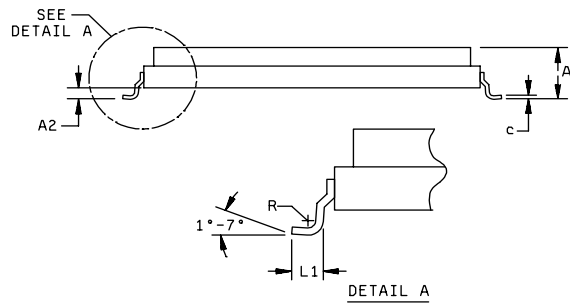
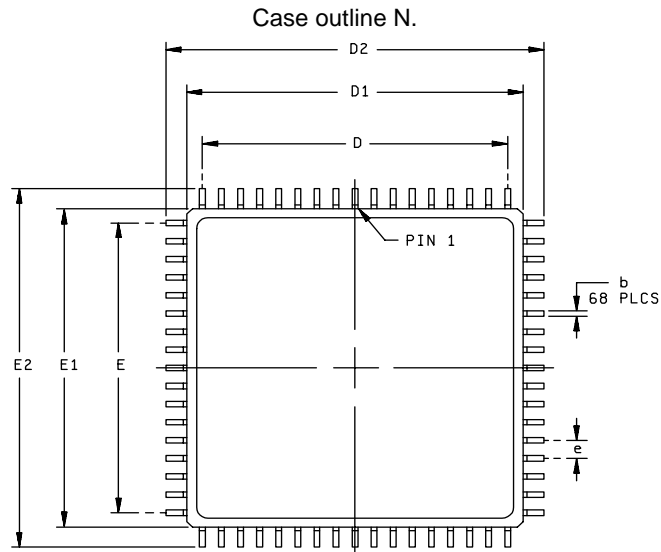
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	3.81	5.08	.150	.200
A1	3.76	4.72	.148	.186
A2	0.00	0.51	.000	.020
B	0.25 REF		.010 REF	
b	0.33	0.43	.013	.017
c	0.15	0.30	.006	.012
D/E	20.32 BSC		.800 BSC	
D1/E1	22.10	22.61	.870	.890
D2/E2	24.89	25.40	.980	1.000
D3/E3	23.77	24.28	.936	.956
e	1.27 BSC		.050 BSC	
R	0.13		.005	
L1	0.89	1.14	.035	.045

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 numbers are for reference only.
3. Case outline M may either be a single cavity or a dual cavity package. Dimension A2 is measured between the lowest horizontal plane of the package to the seating plane of the lead(s).
4. Case outline Z is a dual cavity package, only.

FIGURE 1. Case outline(s) - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 14



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A		3.56		.140
A2	0.36	0.71	.014	.028
b	0.33	0.43	.013	.017
c	0.23	0.30	.009	.012
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 TYP	
L1	0.89	1.14	.035	.045
R	0.13 MIN		.005 MIN	

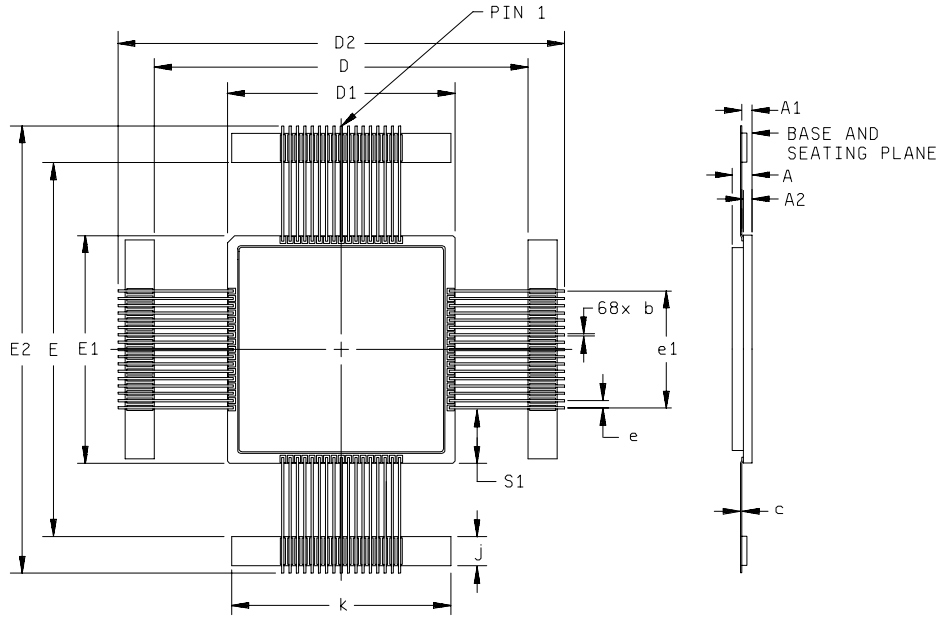
NOTES:

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 numbers are for reference only.

FIGURE 1. Case outline(s) - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 15

Case outline X.



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	2.92	5.08	.115	.200
A1	1.52 BSC		.060 BSC	
A2	1.14	1.39	.045	.055
b	0.31	0.46	.012	.018
c	0.23	0.31	.009	.012
D/E	63.63	66.42	2.505	2.615
D1/E1	39.24	40.01	1.545	1.575
D2/E2	73.28	84.20	2.885	3.315
e	1.27 BSC		.050 BSC	
e1	20.32 BSC		.800 BSC	
j	4.83	5.33	.190	.210
k	37.72	38.48	1.485	1.515
S1	9.65 BSC		.380 BSC	

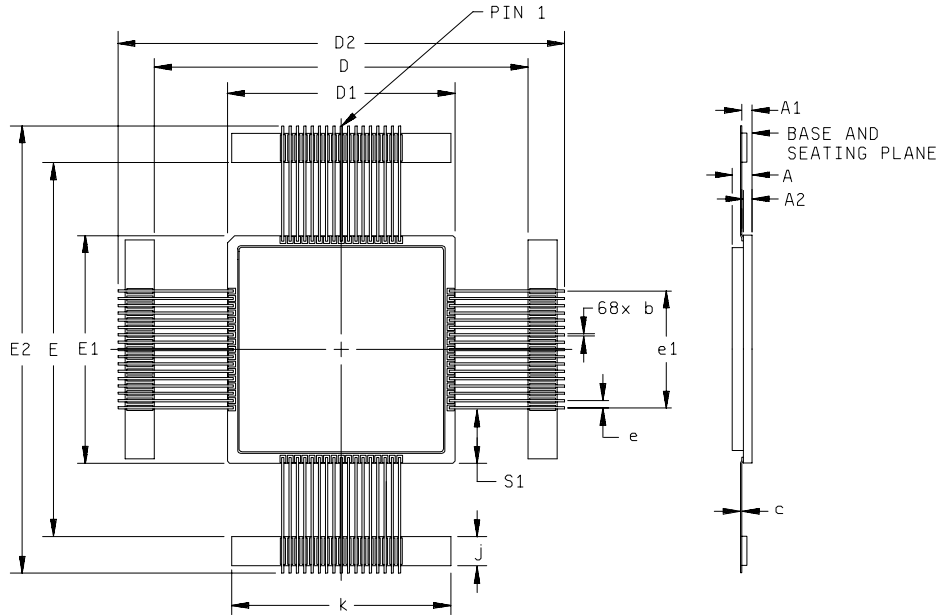
NOTES:

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 numbers are for reference only.

FIGURE 1. Case outline(s) - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 16

Case outline Y.



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	2.92	3.56	.115	.140
A1	1.52 BSC		.060 BSC	
A2	1.14	1.39	.045	.055
b	0.31	0.46	.012	.018
c	0.23	0.31	.009	.012
D/E	63.63	66.42	2.505	2.615
D1/E1	39.24	40.01	1.545	1.575
D2/E2	73.28	84.20	2.885	3.315
e	1.27 BSC		.050 BSC	
e1	20.32 BSC		.800 BSC	
j	4.83	5.33	.190	.210
k	37.72	38.48	1.485	1.515
S1	9.65 BSC		.380 BSC	

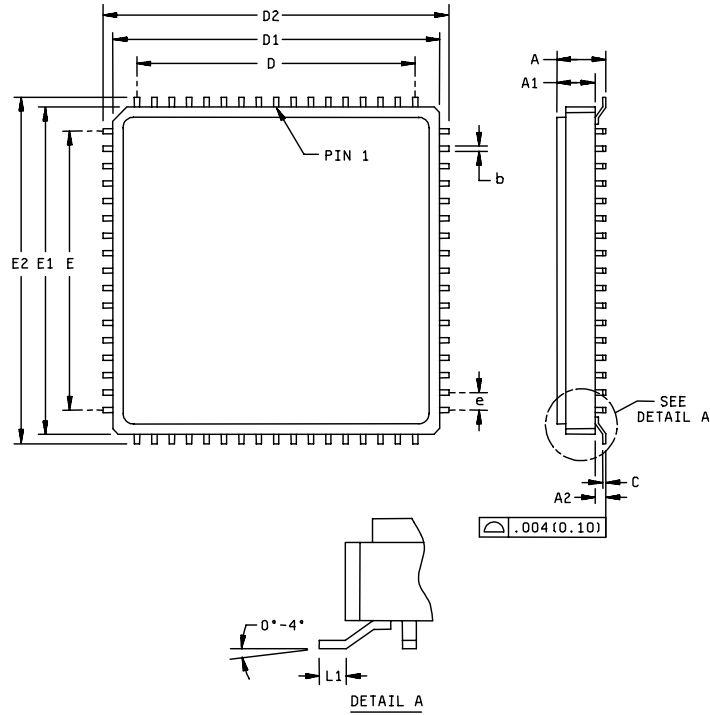
NOTES:

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 numbers are for reference only

FIGURE 1. Case outline(s) - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 17

Case outline B.



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A		4.06		.160
A1		2.79		.110
A2	1.12	1.42	.044	.056
b	0.33	0.43	.013	.017
C	0.15	0.25	.006	.010
D/E	20.32 BSC		.800 BSC	
D1/E1	23.65	24.10	.931	.949
D2/E2	24.89	25.40	.980	1.000
e	1.27 BSC		.050 BSC	
L1	0.51	1.14	.020	.045

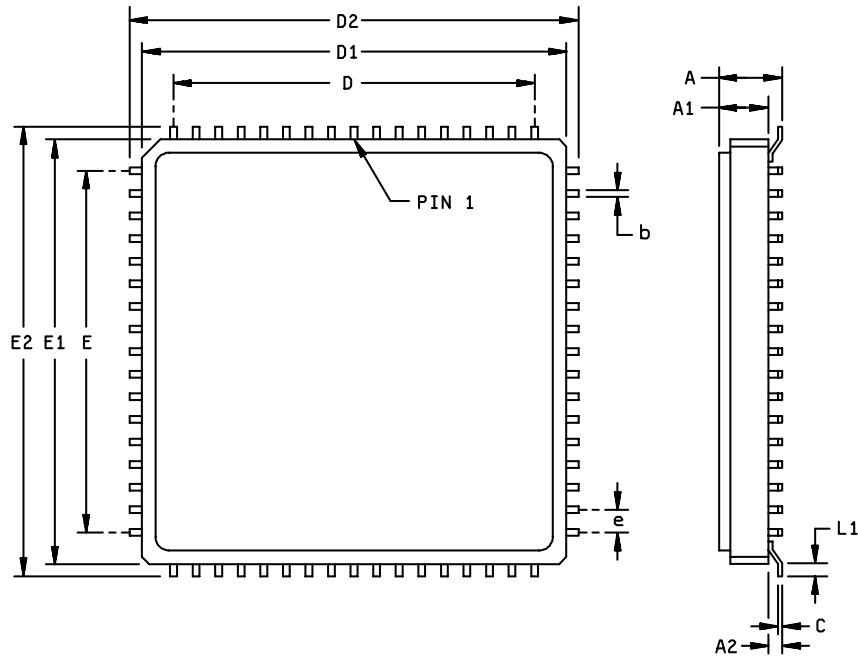
NOTES:

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 numbers are for reference only.

FIGURE 1. Case outline(s) - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 18

Case outline 9.



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A		3.56		.140
A1		2.79		.110
A2	0.46	0.76	.018	.030
b	0.33	0.43	.013	.017
C	0.15	0.25	.006	.010
D/E	20.32 BSC		.800 BSC	
D1/E1	23.65	24.10	.931	.949
D2/E2	24.89	25.40	.980	1.000
e	1.27 BSC		.050 BSC	
L1	0.51	1.14	.020	.045

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 numbers are for reference only.

FIGURE 1. Case outline(s) - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 19

Device types	All	Device types	All	Device types	All	Device types	All
Case outlines	A, B, M, N, 9	Case outlines	A, B, M, N, 9	Case outlines	A, B, M, N, 9	Case outlines	A, B, M, N, 9
Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol
1	GND	18	GND	35	\overline{OE}	52	GND
2	\overline{CS} 3	19	I/O8	36	\overline{CS} 2	53	I/O23
3	A5	20	I/O9	37	NC	54	I/O22
4	A4	21	I/O10	38	\overline{WE} 2	55	I/O21
5	A3	22	I/O11	39	\overline{WE} 3	56	I/O20
6	A2	23	I/O12	40	\overline{WE} 4	57	I/O19
7	A1	24	I/O13	41	NC	58	I/O18
8	A0	25	I/O14	42	NC	59	I/O17
9	NC	26	I/O15	43	NC	60	I/O16
10	I/O0	27	V _{CC}	44	I/O31	61	V _{CC}
11	I/O1	28	A11	45	I/O30	62	A10
12	I/O2	29	A12	46	I/O29	63	A9
13	I/O3	30	A13	47	I/O28	64	A8
14	I/O4	31	A14	48	I/O27	65	A7
15	I/O5	32	A15	49	I/O26	66	A6
16	I/O6	33	A16	50	I/O25	67	\overline{WE} 1
17	I/O7	34	\overline{CS} 1	51	I/O24	68	\overline{CS} 4

FIGURE 2. Terminal connections.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 20

Device types	05-10, 12-17	Device types	05-10, 12-17	Device types	05-10, 12-17	Device types	05-10, 12-17
Case outline	Z	Case outline	Z	Case outline	Z	Case outline	Z
Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol
1	GND	18	GND	35	\overline{OE}	52	GND
2	\overline{CS} 3	19	I/O8	36	\overline{CS} 2	53	I/O23
3	A5	20	I/O9	37	NC	54	I/O22
4	A4	21	I/O10	38	\overline{WE} 2	55	I/O21
5	A3	22	I/O11	39	\overline{WE} 3	56	I/O20
6	A2	23	I/O12	40	\overline{WE} 4	57	I/O19
7	A1	24	I/O13	41	NC	58	I/O18
8	A0	25	I/O14	42	NC	59	I/O17
9	NC	26	I/O15	43	NC	60	I/O16
10	I/O0	27	V _{cc}	44	I/O31	61	V _{cc}
11	I/O1	28	A11	45	I/O30	62	A10
12	I/O2	29	A12	46	I/O29	63	A9
13	I/O3	30	A13	47	I/O28	64	A8
14	I/O4	31	A14	48	I/O27	65	A7
15	I/O5	32	A15	49	I/O26	66	A6
16	I/O6	33	A16	50	I/O25	67	\overline{WE} 1
17	I/O7	34	\overline{CS} 1	51	I/O24	68	\overline{CS} 4

FIGURE 2. Terminal connections - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 21

Device types	All	Device types	All	Device types	All	Device types	All
Case outlines	X,Y	Case outlines	X,Y	Case outlines	X,Y	Case outlines	X,Y
Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol	Terminal number	Terminal symbol
1	GND	18	GND	35	\overline{OE}	52	GND
2	\overline{CS} 1	19	I/O8	36	\overline{CS} 4	53	I/O23
3	A5	20	I/O9	37	NC	54	I/O22
4	A4	21	I/O10	38	NC	55	I/O21
5	A3	22	I/O11	39	NC	56	I/O20
6	A2	23	I/O12	40	NC	57	I/O19
7	A1	24	I/O13	41	NC	58	I/O18
8	A0	25	I/O14	42	NC	59	I/O17
9	NC	26	I/O15	43	NC	60	I/O16
10	I/O0	27	V _{CC}	44	I/O31	61	V _{CC}
11	I/O1	28	A11	45	I/O30	62	A10
12	I/O2	29	A12	46	I/O29	63	A9
13	I/O3	30	A13	47	I/O28	64	A8
14	I/O4	31	A14	48	I/O27	65	A7
15	I/O5	32	A15	49	I/O26	66	A6
16	I/O6	33	A16	50	I/O25	67	\overline{WE}
17	I/O7	34	\overline{CS} 2	51	I/O24	68	\overline{CS} 3

FIGURE 2. Terminal connections - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 22

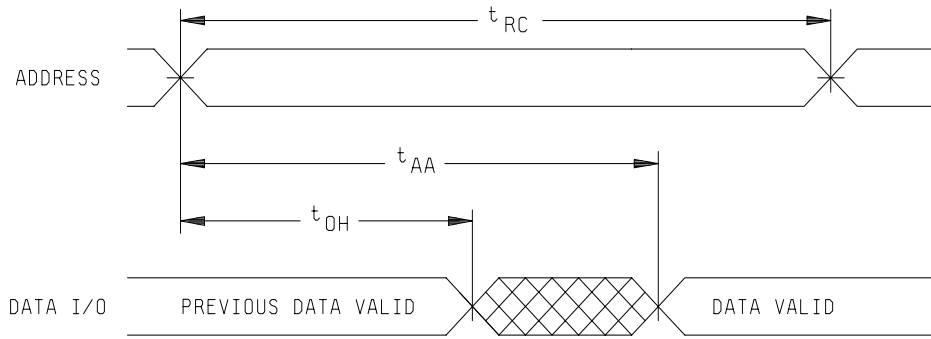
\overline{CS}	\overline{OE}	\overline{WE}	Mode	Data I/O	Power
H	X	X	Standby	High Z	Standby
L	L	H	Read	Data out	Active
L	H	H	Output disable	High Z	Active (deselect)
L	X	L	Write	Data in	Active

NOTES:

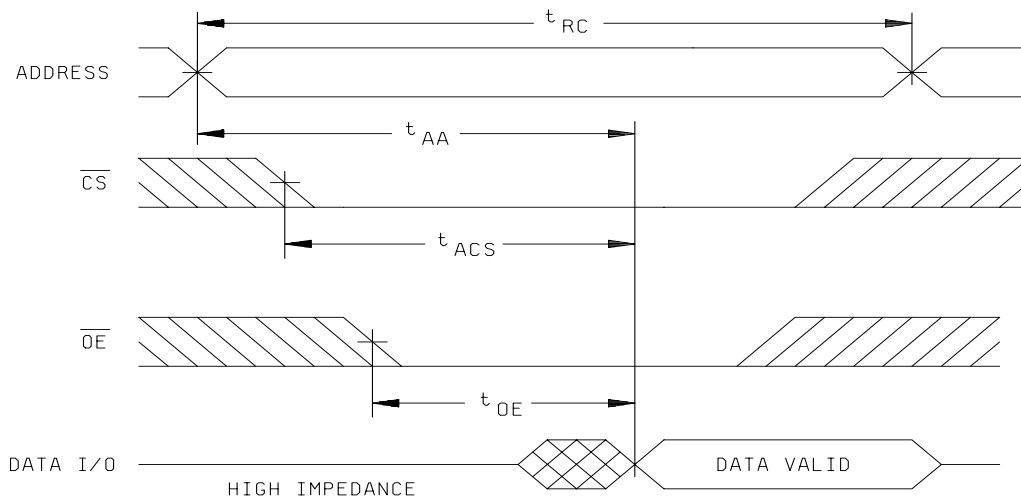
1. H = V_{IH} = High logic level.
2. L = V_{IL} = Low logic level.
3. X = Do not care (either high or low).
4. High Z = High impedance state.

FIGURE 3. Truth table.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
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READ CYCLE 1 ($\overline{CS} = \overline{OE} = V_{IL}, \overline{WE} = V_{IH}$)



READ CYCLE 2 ($\overline{WE} = V_{IH}$)

FIGURE 4. Read cycle timing diagram.

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		REVISION LEVEL N	SHEET 24

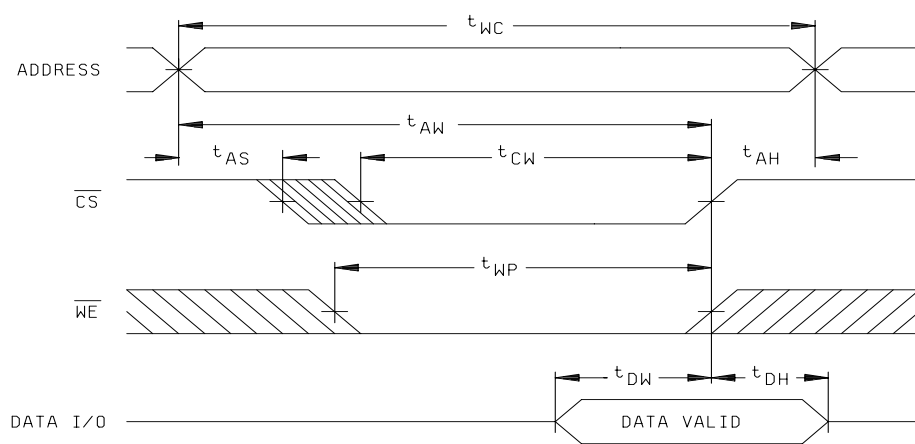
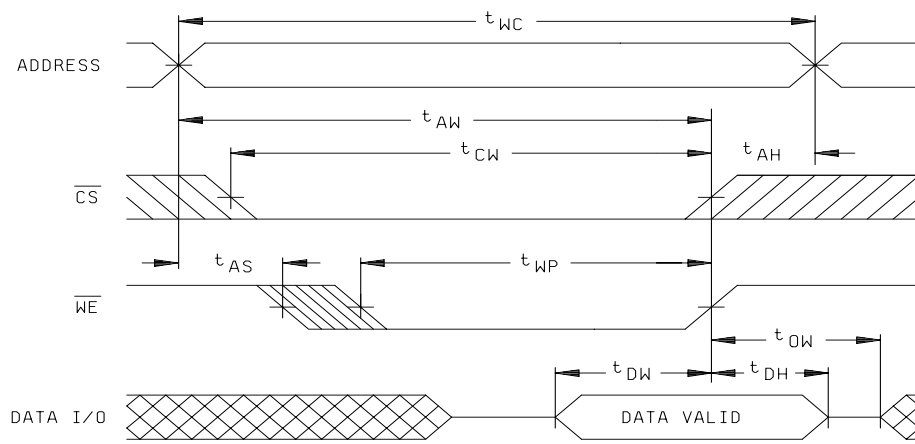
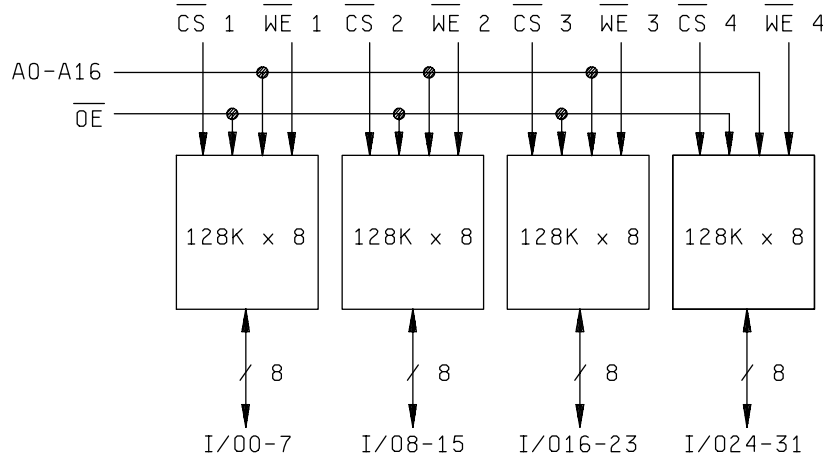


FIGURE 5. Write cycle timing diagram.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
		REVISION LEVEL N	SHEET 25

Case outlines A, B, M, N, Z, and 9.



Case outlines X and Y.

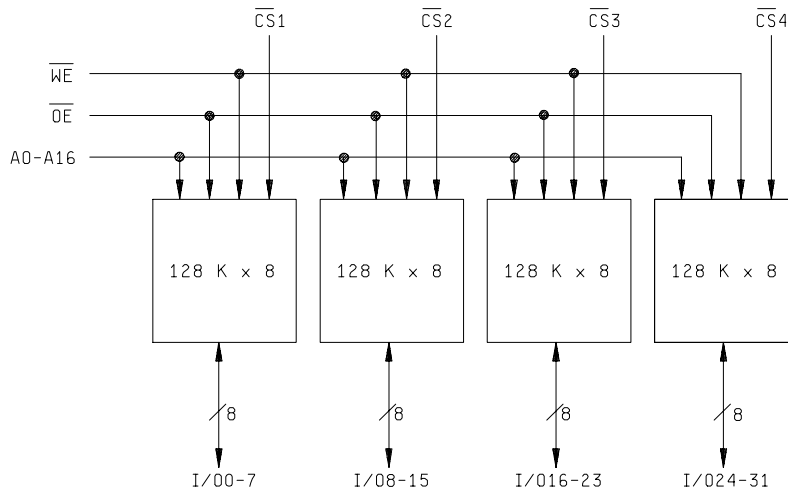
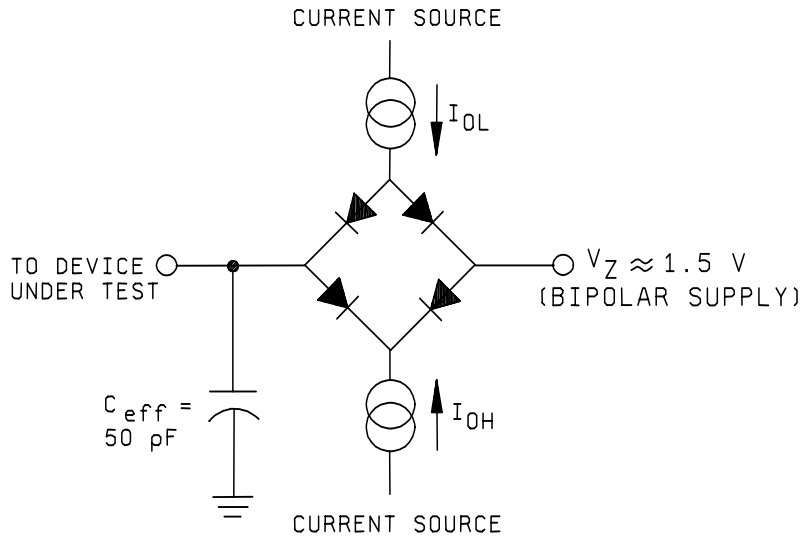


FIGURE 6. Block diagram(s) .

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
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Parameter	Typical	Unit
Input pulse level	0 - 3.0	V
Input rise and fall	5	ns
Input and output reference level	1.5	V
Output load capacitance	50	pF

NOTES:

1. V_Z is programmable from -2 V to +7 V.
2. I_{OL} and I_{OH} are programmable from 0 to 16mA.
3. Tester impedance is $Z_O = 75$ ohms.
4. V_Z is typically the midpoint of V_{OH} and V_{OL} .
5. I_{OL} and I_{OH} are adjusted to simulate a typical resistive load circuit.
6. ATE tester includes jig capacitance.

FIGURE 7. 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. QUALITY ASSURANCE PROVISIONS

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 DSCC-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) T_A 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.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000	SIZE A		5962-95595
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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 DSCC-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) T_A 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 as specified in MIL-PRF-38534.

6.4 Record of users. Military and industrial users shall inform Defense Supply Center Columbus when a system application requires configuration control and the applicable SMD. DSCC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronic devices (FSC 5962) should contact DSCC-VA, telephone (614) 692-0544.

6.5 Comments. Comments on this drawing should be directed to DSCC-VA, Post Office Box 3990, Columbus, Ohio 43216-5000, 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 DSCC-VA and have agreed to this drawing.

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STANDARD MICROCIRCUIT DRAWING BULLETIN

DATE: 04-01-07

Approved sources of supply for SMD 5962-95595 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 DSCC-VA. This bulletin is superseded by the next dated revisions of MIL-HDBK-103 and QML-38534.

Standard microcircuit drawing PIN <u>1</u> /	Vendor CAGE number	Vendor similar PIN <u>2</u> /
5962-9559501HMA	54230	WS128K32-120G2Q, WS128K32-120G2UQ
5962-9559501HMC	54230	WS128K32-120G2Q, WS128K32-120G2UQ
5962-9559501HNA	54230	WS128K32-120G2UQ
5962-9559501HNC	54230	WS128K32-120G2UQ
5962-9559501HXC	54230	WS128K32-120G4Q
5962-9559501HYC	54230	WS128K32-120G4TQ
5962-9559501H9A	54230	WS128K32-120G1UQ
5962-9559501H9C	54230	WS128K32-120G1UQ
5962-9559501HBA	54230	WS128K32-120G1TQ
5962-9559501HBC	54230	WS128K32-120G1TQ
5962-9559502HMA	54230	WS128K32-100G2Q, WS128K32-100G2UQ
5962-9559502HMC	54230	WS128K32-100G2Q, WS128K32-100G2UQ
5962-9559502HNA	54230	WS128K32-100G2UQ
5962-9559502HNC	54230	WS128K32-100G2UQ
5962-9559502HXC	54230	WS128K32-100G4Q
5962-9559502HYC	54230	WS128K32-100G4TQ
5962-9559502H9A	54230	WS128K32-100G1UQ
5962-9559502H9C	54230	WS128K32-100G1UQ
5962-9559502HBA	54230	WS128K32-100G1TQ
5962-9559502HBC	54230	WS128K32-100G1TQ
5962-9559503HMA	54230	WS128K32-85G2Q, WS128K32-85G2UQ
5962-9559503HMC	54230	WS128K32-85G2Q, WS128K32-85G2UQ
5962-9559503HNA	54230	WS128K32-85G2UQ
5962-9559503HNC	54230	WS128K32-85G2UQ
5962-9559503HXC	54230	WS128K32-85G4Q
5962-9559503HYC	54230	WS128K32-85G4TQ
5962-9559503H9A	54230	WS128K32-85G1UQ
5962-9559503H9C	54230	WS128K32-85G1UQ
5962-9559503HBA	54230	WS128K32-85G1TQ
5962-9559503HBC	54230	WS128K32-85G1TQ
5962-9559504HMA	54230	WS128K32-70G2Q, WS128K32-70G2UQ
5962-9559504HMC	54230	WS128K32-70G2Q, WS128K32-70G2UQ
5962-9559504HNA	54230	WS128K32-70G2UQ
5962-9559504HNC	54230	WS128K32-70G2UQ
5962-9559504HXC	54230	WS128K32-70G4Q
5962-9559504HYC	54230	WS128K32-70G4TQ
5962-9559504H9A	54230	WS128K32-70G1UQ
5962-9559504H9C	54230	WS-128K32-70G1UQ
5962-9559504HBA	54230	WS128K32-70G1TQ
5962-9559504HBC	54230	WS128K32-70G1TQ

See footnotes at end of table.

STANDARD MICROCIRCUIT DRAWING BULLETIN - Continued.

DATE: 04-01-07

Standard microcircuit drawing PIN <u>1</u> /	Vendor CAGE number	Vendor similar PIN <u>2</u> /
5962-9559505HAA	0EU86	AS8S128K32Q1-55/883C
5962-9559505HAC	0EU86	AS8S128K32Q1-55/883C
5962-9559505HAA	54230	WS128K32-55G2LQ
5962-9559505HAC	54230	WS128K32-55G2LQ
5962-9559505HMA	0EU86	AS8S128K32Q-55/883C
5962-9559505HMC	0EU86	AS8S128K32Q-55/883C
5962-9559505HMA	54230	WS128K32-55G2, WS128K32-55G2UQ
5962-9559505HMC	54230	WS128K32-55G2, WS128K32-55G2UQ
5962-9559505HMA	88379	ACT-S128K32N-055F2Q
5962-9559505HMC	88379	ACT-S128K32N-055F2Q
5962-9559505HNA	0EU86	AS8S128K32QT-55/883C
5962-9559505HNC	0EU86	AS8S128K32QT-55/883C
5962-9559505HNA	54230	WS128K32-55G2UQ
5962-9559505HNC	54230	WS128K32-55G2UQ
5962-9559505HXC	54230	WS128K32-55G4Q
5962-9559505HXA	88379	ACT-S128K32N-055F1Q
5962-9559505HXC	88379	ACT-S128K32N-055F1Q
5962-9559505HYC	54230	WS128K32-55G4TQ
5962-9559505HYA	88379	ACT-S128K32N-055F1Q
5962-9559505HYC	88379	ACT-S128K32N-055F1Q
5962-9559505HZA	88379	ACT-S128K32N-055F2Q
5962-9559505HZC	88379	ACT-S128K32N-055F2Q
5962-9559505H9A	54230	WS128K32-55G1UQ
5962-9559505H9C	54230	WS128K32-55G1UQ
5962-9559505H9A	88379	ACT-S128K32N-055F18Q
5962-9559505H9C	88379	ACT-S128K32N-055F18Q
5962-9559505HBA	54230	WS128K32-55G1TQ
5962-9559505HBC	54230	WS128K32-55G1TQ
5962-9559506HAA	0EU86	AS8S128K32Q1-45/883C
5962-9559506HAC	0EU86	AS8S128K32Q1-45/883C
5962-9559506HAA	54230	WS128K32-45G2LQ
5962-9559506HAC	54230	WS128K32-45G2LQ
5962-9559506HMA	0EU86	AS8S128K32Q-45/883C
5962-9559506HMC	0EU86	AS8S128K32Q-45/883C
5962-9559506HMA	54230	WS128K32-45G2Q, WS128K32-45G2UQ
5962-9559506HMC	54230	WS128K32-45G2Q, WS128K32-45G2UQ
5962-9559506HMA	88379	ACT-S128K32N-045F2Q
5962-9559506HMC	88379	ACT-S128K32N-045F2Q
5962-9559506HNA	0EU86	AS8S128K32QT-45/883C
5962-9559506HNC	0EU86	AS8S128K32QT-45/883C
5962-9559506HNA	54230	WS128K32-45G2UQ
5962-9559506HNC	54230	WS128K32-45G2UQ
5962-9559506HXC	54230	WS128K32-45G4Q
5962-9559506HXA	88379	ACT-S128K32N-045F1Q
5962-9559506HXC	88379	ACT-S128K32N-045F1Q
5962-9559506HYC	54230	WS128K32-45G4TQ
5962-9559506HYA	88379	ACT-S128K32N-045F1Q
5962-9559506HYC	88379	ACT-S128K32N-045F1Q
5962-9559506HZC	88379	ACT-S128K32N-045F2Q
5962-9559506HZA	88379	ACT-S128K32N-045F2Q
5962-9559506H9A	54230	WS128K32-45G1UQ
5962-9559506H9C	54230	WS128K32-45G1UQ
5962-9559506H9A	88379	ACT-S128K32N-045F18Q
5962-9559506H9C	88379	ACT-S128K32N-045F18Q
5962-9559506HBA	54230	WS128K32-45G1TQ
5962-9559506HBC	54230	WS128K32-45G1TQ

See footnotes at end of table.

STANDARD MICROCIRCUIT DRAWING BULLETIN - Continued.

DATE: 04-01-07

Standard microcircuit drawing PIN <u>1</u> /	Vendor CAGE number	Vendor similar PIN <u>2</u> /
5962-9559507HAA	0EU86	AS8S128K32Q1-35/883C
5962-9559507HAC	0EU86	AS8S128K32Q1-35/883C
5962-9559507HAA	54230	WS128K32-35G2LQ
5962-9559507HAC	54230	WS128K32-35G2LQ
5962-9559507HMA	0EU86	AS8S128K32Q-35/883C
5962-9559507HMC	0EU86	AS8S128K32Q-35/883C
5962-9559507HMA	54230	WS128K32-35G2Q, WS128K32-35G2UQ
5962-9559507HMC	54230	WS128K32-35G2Q, WS128K32-35G2UQ
5962-9559507HMA	88379	ACT-S128K32N-035F2Q
5962-9559507HMC	88379	ACT-S128K32N-035F2Q
5962-9559507HNA	0EU86	AS8S128K32QT-35/883C
5962-9559507HNC	0EU86	AS8S128K32QT-35/883C
5962-9559507HNA	54230	WS128K32-35G2UQ
5962-9559507HNC	54230	WS128K32-35G2UQ
5962-9559507HXC	54230	WS128K32-35G4Q
5962-9559507HXA	88379	ACT-S128K32N-035F1Q
5962-9559507HXC	88379	ACT-S128K32N-035F1Q
5962-9559507HYC	54230	WS128K32-35G4TQ
5962-9559507HYA	88379	ACT-S128K32N-035F1Q
5962-9559507HYC	88379	ACT-S128K32N-035F1Q
5962-9559507HZA	88379	ACT-S128K32N-035F2Q
5962-9559507HZA	88379	ACT-S128K32N-035F2Q
5962-9559507H9A	54230	WS128K32-35G1UQ
5962-9559507H9C	54230	WS128K32-35G1UQ
5962-9559507H9A	88379	ACT-S128K32N-035F18Q
5962-9559507H9C	88379	ACT-S128K32N-035F18Q
5962-9559507HBA	54230	WS128K32-35G1TQ
5962-9559507HBC	54230	WS128K32-35G1TQ
5962-9559508HAA	0EU86	AS8S128K32Q1-25/883C
5962-9559508HAC	0EU86	AS8S128K32Q1-25/883C
5962-9559508HAA	54230	WS128K32-25G2LQ
5962-9559508HAC	54230	WS128K32-25G2LQ
5962-9559508HMA	0EU86	AS8S128K32Q-25/883C
5962-9559508HMC	0EU86	AS8S128K32Q-25/883C
5962-9559508HMA	54230	WS128K32-25G2Q, WS128K32-25G2UQ
5962-9559508HMC	54230	WS128K32-25G2Q, WS128K32-25G2UQ
5962-9559508HMA	88379	ACT-S128K32N-025F2Q
5962-9559508HMC	88379	ACT-S128K32N-025F2Q
5962-9559508HNA	0EU86	AS8S128K32QT-25/883C
5962-9559508HNC	0EU86	AS8S128K32QT-25/883C
5962-9559508HNA	54230	WS128K32-25G2UQ
5962-9559508HNC	54230	WS128K32-25G2UQ
5962-9559508HXC	54230	WS128K32-25G4Q
5962-9559508HXA	88379	ACT-S128K32N-025F1Q
5962-9559508HXC	88379	ACT-S128K32N-025F1Q
5962-9559508HYC	54230	WS128K32-25G4TQ
5962-9559508HYA	88379	ACT-S128K32N-025F1Q
5962-9559508HYC	88379	ACT-S128K32N-025F1Q
5962-9559508HZA	88379	ACT-S128K32N-025F2Q
5962-9559508HZA	88379	ACT-S128K32N-025F2Q
5962-9559508H9A	54230	WS128K32-25G1UQ
5962-9559508H9C	54230	WS128K32-25G1UQ
5962-9559508H9A	88379	ACT-S128K32N-025F18Q
5962-9559508H9C	88379	ACT-S128K32N-025F18Q
5962-9559508HBA	54230	WS128K32-25G1TQ
5962-9559508HBC	54230	WS128K32-25G1TQ

See footnotes at end of table.

STANDARD MICROCIRCUIT DRAWING BULLETIN - Continued.

DATE: 04-01-07

Standard microcircuit drawing PIN <u>1</u> /	Vendor CAGE number	Vendor similar PIN <u>2</u> /
5962-9559509HAA	0EU86	AS8S128K32Q1-20/883C
5962-9559509HAC	0EU86	AS8S128K32Q1-20/883C
5962-9559509HAA	54230	WS128K32-20G2LQ
5962-9559509HAC	54230	WS128K32-20G2LQ
5962-9559509HMA	0EU86	AS8S128K32Q-20/883C
5962-9559509HMC	0EU86	AS8S128K32Q-20/883C
5962-9559509HMA	54230	WS128K32-20G2Q, WS128K32-20G2UQ
5962-9559509HMC	54230	WS128K32-20G2Q, WS128K32-20G2UQ
5962-9559509HMA	88379	ACT-S128K32N-020F2Q
5962-9559509HMC	88379	ACT-S128K32N-020F2Q
5962-9559509HNA	0EU86	AS8S128K32QT-20/883C
5962-9559509HNC	0EU86	AS8S128K32QT-20/883C
5962-9559509HNA	54230	WS128K32-20G2UQ
5962-9559509HNC	54230	WS128K32-20G2UQ
5962-9559509HXC	54230	WS128K32-20G4Q
5962-9559509HXA	88379	ACT-S128K32N-020F1Q
5962-9559509HXC	88379	ACT-S128K32N-020F1Q
5962-9559509HYC	54230	WS128K32-20G4TQ
5962-9559509HYA	88379	ACT-S128K32N-020F1Q
5962-9559509HYC	88379	ACT-S128K32N-020F1Q
5962-9559509HZA	88379	ACT-S128K32N-020F2Q
5962-9559509HZA	88379	ACT-S128K32N-020F2Q
5962-9559509H9A	54230	WS128K32-20G1UQ
5962-9559509H9C	54230	WS128K32-20G1UQ
5962-9559509H9A	88379	ACT-S128K32N-F18Q
5962-9559509H9C	88379	ACT-S128K32N-F18Q
5962-9559509HBA	54230	WS128K32-20G1TQ
5962-9559509HBC	54230	WS128K32-20G1TQ
5962-9559510HAA	0EU86	AS8S128K32Q1-17/883C
5962-9559510HAC	0EU86	AS8S128K32Q1-17/883C
5962-9559510HAA	54230	WS128K32-17G2LQ
5962-9559510HAC	54230	WS128K32-17G2LQ
5962-9559510HMA	0EU86	AS8S128K32Q-17/883C
5962-9559510HMC	0EU86	AS8S128K32Q-17/883C
5962-9559510HMA	54230	WS128K32-17G2Q, WS128K32-17G2UQ
5962-9559510HMC	54230	WS128K32-17G2Q, WS128K32-17G2UQ
5962-9559510HMA	88379	ACT-S128K32N-017F2Q
5962-9559510HMC	88379	ACT-S128K32N-017F2Q
5962-9559510HNA	0EU86	AS8S128K32QT-17/883C
5962-9559510HNC	0EU86	AS8S128K32QT-17/883C
5962-9559510HNA	54230	WS128K32-17G2UQ
5962-9559510HNC	54230	WS128K32-17G2UQ
5962-9559510HXC	54230	WS128K32-17G4Q
5962-9559510HXA	88379	ACT-S128K32N-017F1Q
5962-9559510HXC	88379	ACT-S128K32N-017F1Q
5962-9559510HYC	54230	WS128K32-17G4TQ
5962-9559510HYA	88379	ACT-S128K32N-017F1Q
5962-9559510HYC	88379	ACT-S128K32N-017F1Q
5962-9559510HZC	88379	ACT-S128K32N-017F2Q
5962-9559510HZA	88379	ACT-S128K32N-017F2Q
5962-9559510H9A	54230	WS128K32-17G1UQ
5962-9559510H9C	54230	WS128K32-17G1UQ
5962-9559510H9A	88379	ACT-S128K32N-017F18Q
5962-9559510H9C	88379	ACT-S128K32N-017F18Q
5962-9559510HBA	54230	WS128K32-17G1TQ
5962-9559510HBC	54230	WS128K32-17G1TQ

See footnotes at end of table.

STANDARD MICROCIRCUIT DRAWING BULLETIN - Continued.

DATE: 04-01-07

Standard microcircuit drawing PIN <u>1</u> /	Vendor CAGE number	Vendor similar PIN <u>2</u> /
5962-9559511HAA	54230	WS128K32-15G2LQ
5962-9559511HAC	54230	WS128K32-15G2LQ
5962-9559511HMA	54230	WS128K32-15G2Q, WS128K32-15G2UQ
5962-9559511HMC	54230	WS128K32-15G2Q, WS128K32-15G2UQ
5962-9559511HNA	54230	WS128K32-15G2UQ
5962-9559511HNC	54230	WS128K32-15G2UQ
5962-9559511HXA	54230	WS128K32-15G4Q
5962-9559511HXC	54230	WS128K32-15G4Q
5962-9559511HYA	54230	WS128K32-15G4TQ
5962-9559511HYP	54230	WS128K32-15G4TQ
5962-9559511H9A	54230	WS128K32-15G1UQ
5962-9559511H9C	54230	WS128K32-15G1UQ
5962-9559511HBA	54230	WS128K32-15G1TQ
5962-9559511HBC	54230	WS128K32-15G1TQ
5962-9559512HAA	0EU86	AS8S128K32Q1-55/883C
5962-9559512HAC	0EU86	AS8S128K32Q1-55/883C
5962-9559512HAA	54230	WS128K32H-55G2LQ
5962-9559512HAC	54230	WS128K32H-55G2LQ
5962-9559512HMA	0EU86	AS8S128K32Q-55/883C
5962-9559512HMC	0EU86	AS8S128K32Q-55/883C
5962-9559512HMA	54230	WS128K32H-55G2, WS128K32H-55G2UQ
5962-9559512HMC	54230	WS128K32H-55G2, WS128K32H-55G2UQ
5962-9559512HNA	0EU86	AS8S128K32QT-55/883C
5962-9559512HNC	0EU86	AS8S128K32QT-55/883C
5962-9559512HNA	54230	WS128K32H-55G2UQ
5962-9559512HNC	54230	WS128K32H-55G2UQ
5962-9559512HXC	54230	WS128K32H-55G4Q
5962-9559512HYC	54230	WS128K32H-55G4TQ
5962-9559512H9A	54230	WS128K32H-G1UQ
5962-9559512H9C	54230	WS128K32H-G1UQ
5962-9559512H9A	88379	ACT-S128K32N-055F18Q-R
5962-9559512H9C	88379	ACT-S128K32N-055F18Q-R
5962-9559512HBA	54230	WS128K32H-55G1TQ
5962-9559512HBC	54230	WS128K32H-55G1TQ
5962-9559513HAA	0EU86	AS8S128K32Q1-45/883C
5962-9559513HAC	0EU86	AS8S128K32Q1-45/883C
5962-9559513HAA	54230	WS128K32H-45G2LQ
5962-9559513HAC	54230	WS128K32H-45G2LQ
5962-9559513HMA	0EU86	AS8S128K32Q-45/883C
5962-9559513HMC	0EU86	AS8S128K32Q-45/883C
5962-9559513HMA	54230	WS128K32H-45HG2Q, WS128K32H-45HG2UQ
5962-9559513HMC	54230	WS128K32H-45HG2Q, WS128K32H-45HG2UQ
5962-9559513HNA	0EU86	AS8S128K32QT-45/883C
5962-9559513HNC	0EU86	AS8S128K32QT-45/883C
5962-9559513HNA	54230	WS128K32H-45G2UQ
5962-9559513HNC	54230	WS128K32H-45G2UQ
5962-9559513HXC	54230	WS128K32H-45G4Q
5962-9559513HYC	54230	WS128K32H-45G4TQ
5962-9559513H9A	54230	WS128K32H-45G1UQ
5962-9559513H9C	54230	WS128K32H-45G1UQ
5962-9559513H9A	88379	ACT-S128K32N-045F18Q-R
5962-9559513H9C	88379	ACT-S128K32N-045F18Q-R
5962-9559513HBA	54230	WS128K32H-45G1TQ
5962-9559513HBC	54230	WS128K32H-45G1TQ

See footnotes at end of table.

STANDARD MICROCIRCUIT DRAWING BULLETIN - Continued.

DATE: 04-01-07

Standard microcircuit drawing PIN <u>1</u> /	Vendor CAGE number	Vendor similar PIN <u>2</u> /
5962-9559514HAA	0EU86	AS8S128K32Q1-35/883C
5962-9559514HAC	0EU86	AS8S128K32Q1-35/883C
5962-9559514HAA	54230	WS128K32H-35G2LQ
5962-9559514HAC	54230	WS128K32H-35G2LQ
5962-9559514HMA	0EU86	AS8S128K32Q-35/883C
5962-9559514HMC	0EU86	AS8S128K32Q-35/883C
5962-9559514HMA	54230	WS128K32H-35G2Q, WS128K32H-35G2UQ
5962-9559514HMC	54230	WS128K32H-35G2Q, WS128K32H-35G2UQ
5962-9559514HNA	0EU86	AS8S128K32QT-35/883C
5962-9559514HNC	0EU86	AS8S128K32QT-35/883C
5962-9559514HNA	54230	WS128K32H-35G2UQ
5962-9559514HNC	54230	WS128K32H-35G2UQ
5962-9559514HXC	54230	WS128K32H-35G4Q
5962-9559514HYC	54230	WS128K32H-35G4TQ
5962-9559514H9A	54230	WS128K32H-35G1UQ
5962-9559514H9C	54230	WS128K32H-35G1UQ
5962-9559514H9A	88379	ACT-S128K32N-035F18Q-R
5962-9559514H9C	88379	ACT-S128K32N-035F18Q-R
5962-9559514HBA	54230	WS128K32H-35G1TQ
5962-9559514HBC	54230	WS128K32H-35G1TQ
5962-9559515HAA	0EU86	AS8S128K32Q1-25/883C
5962-9559515HAC	0EU86	AS8S128K32Q1-25/883C
5962-9559515HAA	54230	WS128K32H-25G2LQ
5962-9559515HAC	54230	WS128K32H-25G2LQ
5962-9559515HMA	0EU86	AS8S128K32Q-25/883C
5962-9559515HMC	0EU86	AS8S128K32Q-25/883C
5962-9559515HMA	54230	WS128K32H-25G2Q, WS128K32H-25G2UQ
5962-9559515HMC	54230	WS128K32H-25G2Q, WS128K32H-25G2UQ
5962-9559515HNA	0EU86	AS8S128K32QT-25/883C
5962-9559515HNC	0EU86	AS8S128K32QT-25/883C
5962-9559515HNA	54230	WS128K32H-25G2UQ
5962-9559515HNC	54230	WS128K32H-25G2UQ
5962-9559515HXC	54230	WS128K32H-25G4Q
5962-9559515HYC	54230	WS128K32H-25G4TQ
5962-9559515H9A	54230	WS128K32H-25G1UQ
5962-9559515H9C	54230	WS128K32H-25G1UQ
5962-9559515H9A	88379	ACT-S128K32N-025F18Q-R
5962-9559515H9C	88379	ACT-S128K32N-025F18Q-R
5962-9559515HBA	54230	WS128K32H-25G1TQ
5962-9559515HBC	54230	WS128K32H-25G1TQ
5962-9559516HAA	0EU86	AS8S128K32Q1-20/883C
5962-9559516HAC	0EU86	AS8S128K32Q1-20/883C
5962-9559516HAA	54230	WS128K32H-20G2LQ
5962-9559516HAC	54230	WS128K32H-20G2LQ
5962-9559516HMA	0EU86	AS8S128K32Q-20/883C
5962-9559516HMC	0EU86	AS8S128K32Q-20/883C
5962-9559516HMA	54230	WS128K32H-20G2Q, WS128K32H-20G2UQ
5962-9559516HMC	54230	WS128K32H-20G2Q, WS128K32H-20G2UQ
5962-9559516HNA	0EU86	AS8S128K32QT-20/883C
5962-9559516HNC	0EU86	AS8S128K32QT-20/883C
5962-9559516HNA	54230	WS128K32H-20G2UQ
5962-9559516HNC	54230	WS128K32H-20G2UQ
5962-9559516HXC	54230	WS128K32H-20G4Q
5962-9559516HYC	54230	WS128K32H-20G4TQ
5962-9559516H9A	54230	WS128K32H-20G1UQ
5962-9559516H9C	54230	WS128K32H-20G1UQ
5962-9559516H9A	88379	ACT-S128K32N-020F18Q-R
5962-9559516H9C	88379	ACT-S128K32N-020F18Q-R
5962-9559516HBA	54230	WS128K32H-20G1TQ
5962-9559516HBC	54230	WS128K32H-20G1TQ

See footnotes at end of table.

STANDARD MICROCIRCUIT DRAWING BULLETIN - Continued.

DATE: 04-01-07

Standard microcircuit drawing PIN <u>1</u> /	Vendor CAGE number	Vendor similar PIN <u>2</u> /
5962-9559517HAA	0EU86	AS8S128K32Q1-17/883C
5962-9559517HAC	0EU86	AS8S128K32Q1-17/883C
5962-9559517HAA	54230	WS128K32H-17G2LQ
5962-9559517HAC	54230	WS128K32H-17G2LQ
5962-9559517HMA	0EU86	AS8S128K32Q-17/883C
5962-9559517HMC	0EU86	AS8S128K32Q-17/883C
5962-9559517HMA	54230	WS128K32H-17G2Q, WS128K32H-17G2UQ
5962-9559517HMC	54230	WS128K32H-17G2Q, WS128K32H-17G2UQ
5962-9559517HNA	0EU86	AS8S128K32QT-17/883C
5962-9559517HNC	0EU86	AS8S128K32QT-17/883C
5962-9559517HNA	54230	WS128K32H-17G2UQ
5962-9559517HNC	54230	WS128K32H-17G2UQ
5962-9559517HXC	54230	WS128K32H-17G4Q
5962-9559517HYC	54230	WS128K32H-17G4TQ
5962-9559517H9A	54230	WS128K32H-17G1UQ
5962-9559517H9C	54230	WS128K32H-17G1UQ
5962-9559517H9A	88379	ACT-S128K32N-017F18Q-R
5962-9559517H9C	88379	ACT-S128K32N-017F18Q-R
5962-9559517HBA	54230	WS128K32H-17G1TQ
5962-9559517HBC	54230	WS128K32H-17G1TQ
5962-9559518HAA	54230	WS128K32H-15G2LQ
5962-9559518HAC	54230	WS128K32H-15G2LQ
5962-9559518HMA	54230	WS128K32H-15G2Q, WS128K32H-15G2UQ
5962-9559518HMC	54230	WS128K32H-15G2Q, WS128K32H-15G2UQ
5962-9559518HNA	54230	WS128K32H-15G2UQ
5962-9559518HNC	54230	WS128K32H-15G2UQ
5962-9559518HXC	54230	WS128K32H-15G4Q
5962-9559518HYC	54230	WS128K32H-15G4TQ
5962-9559518H9A	54230	WS128K32H-15G1UQ
5962-9559518H9C	54230	WS128K32H-15G1UQ
5962-9559518HBA	54230	WS128K32H-15G1TQ
5962-9559518HBC	54230	WS128K32H-15G1TQ

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 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.

Vendor CAGE
number

Vendor name
and address

0EU86

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8701 Cross Park Drive
Austin, TX 78754-4566

54230

White Electronic Designs Corporation
3601 East University Drive
Phoenix, AZ 85034

88379

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35 South Service Road
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