REVISIONS			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	Add case outline Z and correct errors in figure 1. phn	Thomas M. Hess	02-07-24

REV																				
SHEET																				
REV	A	A	A	A	A	A														
SHEET	15	16	17	18	19	20														

REV STATUS	REV	A	A	A				A	A	A	A	A	A	A	A
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

PMIC N/A

PREPARED BY
Phu H. Nguyen

DEFENSE SUPPLY CENTER COLUMBUS
COLUMBUS, OHIO 43216
http://www.dscc.dla.mil

STANDARD MICROCIRCUIT DRAWING

THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

AMSC N/A

CHECKED BY
Phu H. Nguyen

APPROVED BY
Thomas M. Hess

DRAWING APPROVAL DATE
01-08-08

REVISION LEVEL
A

MICROCIRCUIT, DIGITAL, ASIC, ERROR DETECTION AND CORRECTION UNIT, MONOLITHIC SILICON

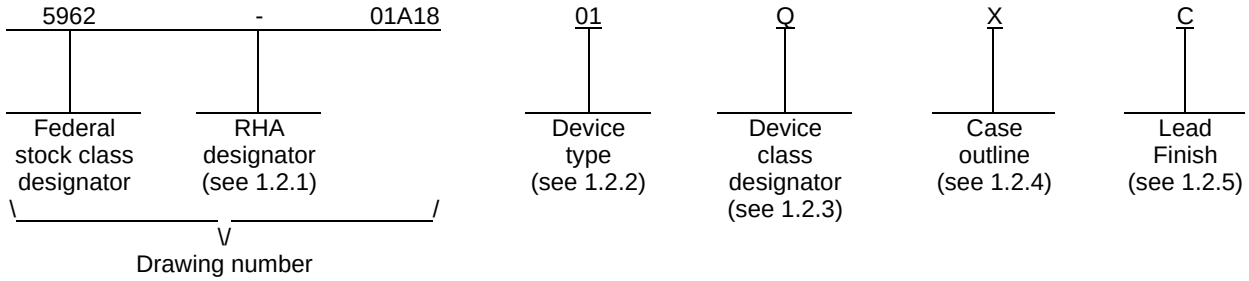
SIZE	CAGE CODE	
A	**67268**	**5962-01A18**

SHEET 1 OF 20

1. SCOPE

1.1 Scope. This drawing documents two product assurance class levels consisting of high reliability (device classes Q and M) and space application (device class V). A choice of case outlines and lead finishes are available and are reflected in the Part or Identifying Number (PIN). When available, a choice of Radiation Hardness Assurance (RHA) levels are reflected in the PIN.

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



1.2.1 RHA designator. Device classes Q and V RHA marked devices meet the MIL-PRF-38535 specified RHA levels and are marked with the appropriate RHA designator. Device class M RHA marked devices meet the MIL-PRF-38535, appendix A specified RHA levels and are marked with the appropriate RHA designator. A dash (-) indicates a non-RHA device.

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

Device type	Generic number	Circuit function
01	29C516E	Error Detection And Correction Unit (EDAC) 16 bit flow-through

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

Device class	Device requirements documentation
M	Vendor self-certification to the requirements for MIL-STD-883 compliant, non-JAN class level B microcircuits in accordance with MIL-PRF-38535, appendix A
Q or V	Certification and qualification to MIL-PRF-38535

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

Outline letter	Descriptive designator	Terminals	Package style
X 1/	See figure 1	100	Multilayer pack unformed leads
Y	See figure 1	100	Multilayer pack gull wings leads
Z	See figure 1	100	Rectangular Multilayer Quad Pack with Flat leads

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

1.3 Absolute maximum ratings. 2/ 3/

Supply voltage range (V_{DD}) ..... -0.5 V to 7.0 V
Input voltage range (V_{IN}) ..... V_{SS} -0.5 V to V_{DD} +0.5 V 4/
Input current (I_{IN})
Signal pin ..... -10.0 mA to 10.0 mA
Power pin ..... -50.0 mA to 50.0 mA
Output short circuit current 5/
$V_{OUT} = V_{DD}$
$V_{OUT} = V_{SS}$
Storage temperature range (T_s) ..... -65°C to +150°C
Lead temperature (soldering, 10 sec) ..... +300°C 6/
Maximum junction temperature (T_J) ..... +175°C

1.4 Recommended operating conditions.

Supply voltage range (V_{DD}) ..... 4.5 V to 5.5 V
Case temperature (T_C) ..... -55°C to 125°C

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-38535 - Integrated Circuits, Manufacturing, 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 takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

1/ This case outline is no longer available from an approved source.
2/ 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.
3/ All voltages referenced to Ground unless otherwise specified.
4/ V_{DD} + 0.5 V shall not exceed 7.0 V
5/ The maximum output current of any single output in a shorted condition for a maximum duration of 1 second.
6/ Duration 10 sec maximum at a distance not less than 1.6 mm.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements for device classes Q, and V shall be in accordance with MIL-PRF-38535 and as specified herein or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein. The individual item requirements for device class M shall be in accordance with MIL-PRF-38535, appendix A for non-JAN class level B devices and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535 and herein for device classes Q and V or MIL-PRF-38535, appendix A and herein for device class M.

3.2.1 Case outline(s). The case outline(s) shall be in accordance with 1.2.4 herein 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 test patterns defined and controlled in Atmel Device-spec. 29C516 Rev. Dec 97 which have been developed from customer provided vectors and simulations specific to this device.

3.2.4 Block diagram(s). The block diagram shall be defined in figure 3.

3.2.5 Timing Waveforms. The timing waveforms shall be specified in figure 4.

3.3 Electrical performance characteristics and postirradiation parameter limits. Unless otherwise specified herein, the electrical performance characteristics and postirradiation parameter limits are as specified in table I and shall apply over the full case operating temperature range.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are defined in table I.

3.5 Marking. The part shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked as listed in MIL-HDBK-103. For packages where marking of the entire SMD PIN number is not feasible due to space limitations, the manufacturer has the option of not marking the "5962-" on the device. For RHA product using this option, the RHA designator shall still be marked. Marking for device classes Q, and V shall be in accordance with MIL-PRF-38535. Marking for device class M shall be in accordance with MIL-PRF-38535, appendix A.

3.5.1 Certification/compliance mark. The certification mark for device classes Q and V shall be a "QML" or "Q" as required in MIL-PRF-38535. The compliance mark for device class M shall be a "C" as required in MIL-PRF-38535, appendix A.

3.6 Certificate of compliance. For device classes Q and V, a certificate of compliance shall be required from a QML-38535 listed manufacturer in order to supply to the requirements of this drawing (see 6.6.1 herein). For device class M, a certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-HDBK-103 (see 6.6.2 herein). The certificate of compliance submitted to DSCC-VA prior to listing as an approved source of supply for this drawing shall affirm that the manufacturer's product meets, for device classes Q and V, the requirements of MIL-PRF-38535 and herein or for device class M, the requirements of MIL-PRF-38535, appendix A and herein.

3.7 Certificate of conformance. A certificate of conformance as required for device classes Q and V in MIL-PRF-38535 or for device class M in MIL-PRF-38535, appendix A shall be provided with each lot of microcircuits delivered to this drawing.

3.8 Notification of change for device class M. For device class M, notification to DSCC-VA of change of product (see 6.2 herein) involving devices acquired to this drawing is required for any change as defined in MIL-PRF-38535.

3.9 Verification and review for device class M. For device class M, DSCC, DSCC's agent, and the acquiring activity retain the option to review the manufacturer's facility and applicable required documentation. Offshore documentation shall be made available onshore at the option of the reviewer.

3.10 Microcircuit group assignment for device class M. Device classes M devices covered by this drawing shall be in microcircuit group number 123 (see MIL-PRF-38535, appendix A).

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55°C \le T_C \le 125°C$ V_{DD} = 5.0 V ± 10% unless otherwise specified	Group A Subgroups	Limits		Units
				Min.	Max.	
Input clamp voltage to GND 1/	V_{IC}	I_{OH} = -300 µA	1,2,3	-1.2	-0.2	V
Low level input current, pull-up 2/	I_{ILPU}	V_{IN} = GND, V_{DD} = 5.5 V	1,2,3	-100		µA
High level input current 2/	I_{IH}	V_{IN} = V_{DD} = 5.5 V	1,2,3		10	µA
Output leakage low current Pull-up output 2/	I_{OZLPU}	Output disabled, V_{OUT} = GND	1,2,3	-100		µA
Output leakage high current 2/	I_{OZH}	Output disabled, V_{OUT} = V_{DD}	1,2,3		10	µA
Low level input voltage 1/	V_{IL}	Functional verification	1,2,3		0.8	V
Low level output voltage BUF 2/	V_{OL}	V_{DD} = 5.5 V, I_{OL} = 3 mA	1,2,3		0.4	V
High level output voltage BUF 2/	V_{OH}	V_{DD} = 4.5 V, I_{OH} = -3 mA	1,2,3	3.9		V
High level input voltage 1/	V_{IH}	Functional verification	1,2,3	2.2		V
Supply current standby 2/	I_{DDSB}	VDD = 5.5 V, Static mode, Output = 0 mA	1,2,3		20	µA
Supply current operating 2/	I_{DDOP}	VDD = 5.5 V, F = 10 MHz Output = 0 mA	1,2,3		20	µA
Input capacitance 3/	C_I	V_{DD} = 0 V	4		8	pF
Output capacitance 3/	C_{IO}	V_{DD} = 0 V	4		12	pF

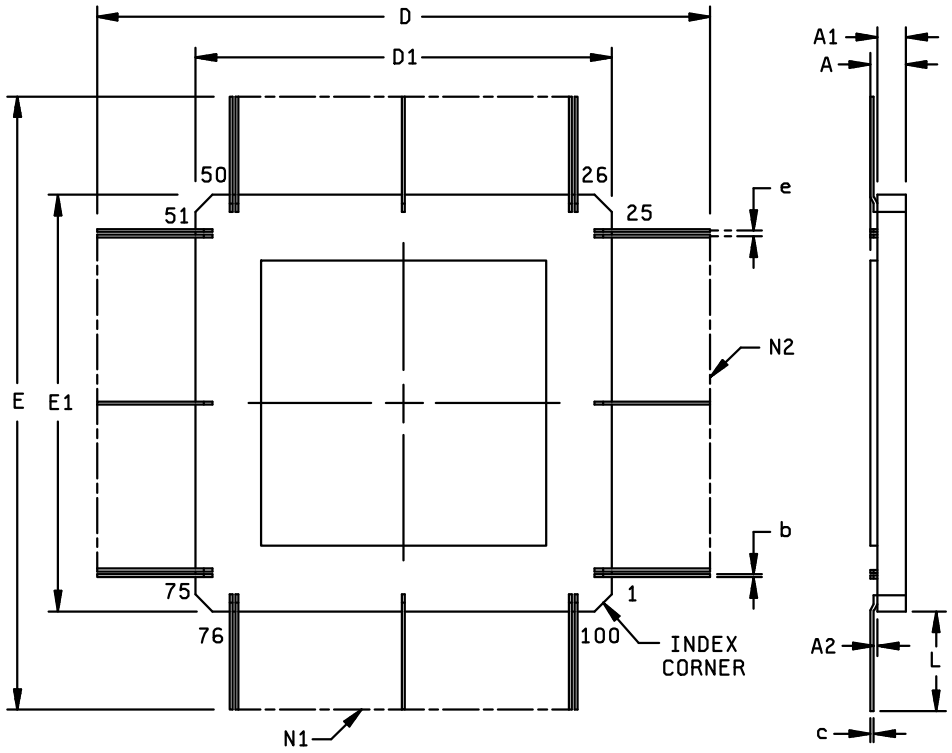
See footnotes at end of table.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55°C \le T_C \le 125°C$ V_{DD} = 5.0 V ± 10% unless otherwise specified	Group A Subgroups	Limits		Units
				Min.	Max.	
Propagation delay U1D to MC	TPBUS_MC		9,10,11		26	ns
Propagationg delay MD to CERRN	TPCERRN		9,10,11		33	ns
Propagationg delay MD to U1D	TPBUS_U1		9,10,11		33	ns
Propagationg delay U1D to MD	TPBUS_MD		9,10,11		15	ns
Propagationg delay Correct, Syn to U2D	TPBU_U2		9,10,11		22	ns
Enable time from TN to U1D	TPZ1BUS_U1		9,10,11		23	ns
Disable time from TN to U1D	TPZ2BUS_U1		9,10,11		23	ns
Enable time from U2X1N to MC	TPZ1BUS_MC		9,10,11		22	ns
Disable time from TN to MC	TPZ2BUS_MC		9,10,11		22	ns
Enable time from U2X1N to MD	TPZ1BUS_MD		9,10,11		22	ns
Disable time from TN to MD	TPZ2BUS_MD		9,10,11		22	ns
Enable time from U2X1N to U2D	TPZ1BUS_U2		9,10,11		22	ns
Disable time from TN to U2D	TPZ2BUS_U2		9,10,11		23	ns

Notes:
1/ Forcing conditions of the functional test, assure that these limits are met, but they will not be individually recorded.
2/ Read and record measurements in accordance with MIL-PRF-38535.
3/ Tested at initial design and after major process changes, otherwise guaranteed.

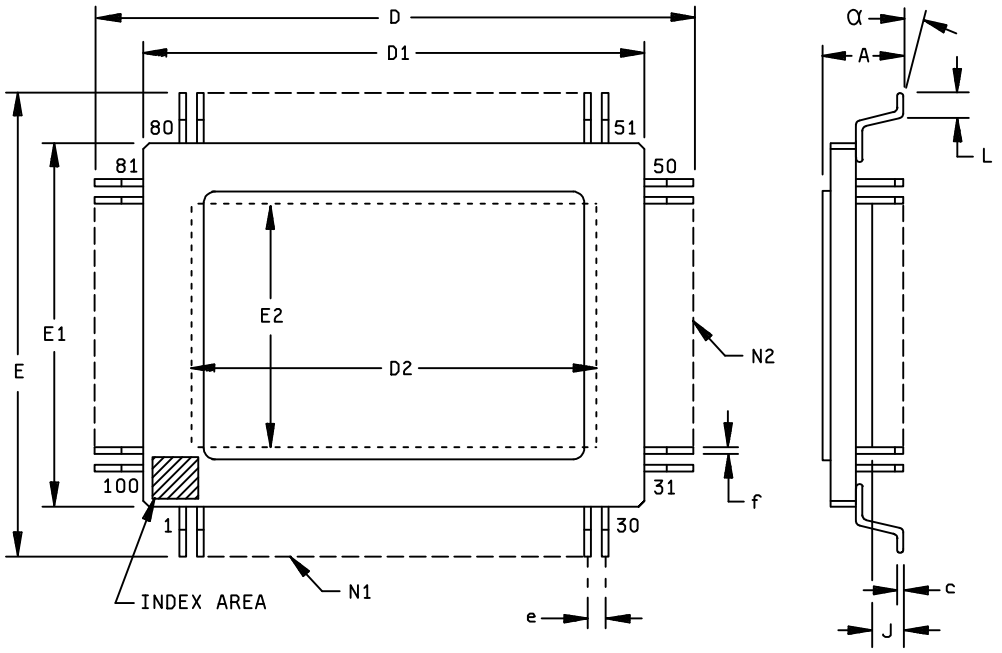
CASE X



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	2.21	2.67	0.087	0.105
c	0.15	0.20	0.006	0.008
D/E	31.80	32.80	1.252	1.291
D1/E1	18.80	19.30	0.740	0.760
e	0.635 BSC		0.025 BSC	
f	0.254 REF		0.010 REF	
A1	1.83	2.24	0.072	0.088
A2	0.203 REF		0.008 REF	
L	6.50	6.75	0.256	0.266
N1/N2	25		25	

Figure 1. Case Outline

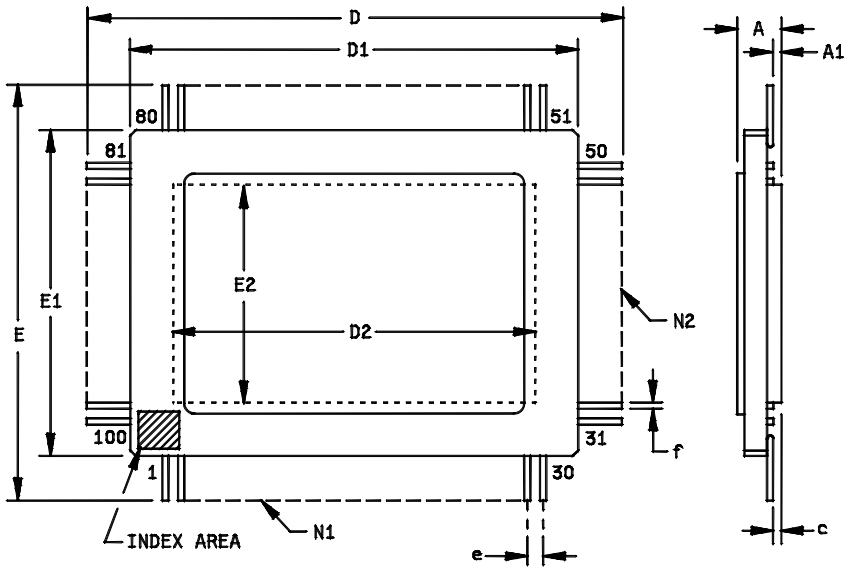
CASE Y



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A		3.81		0.150
c	0.15 TYP		0.006 TYP	
D	23.76	24.48	0.935	0.964
D1	19.80	20.20	0.780	0.795
E	17.80	18.44	0.701	0.725
E1	13.85	14.15	0.545	0.557
e	0.65 BSC		0.0256 BSC	
f	0.17	0.33	0.0067	0.013
J	0.10	0.36	0.004	0.014
L	0.61	1.01	0.024	0.040
D2	15.87	16.13	0.624	0.635
E2	9.87	10.13	0.388	0.399
	$\sigma = 4° \pm 4°$			
	N1 = 30		N2 = 20	

Figure 1. Case Outline – Continued.

CASE Z



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A		3.30		0.130
A1	0.90	1.10	0.035	0.043
c	0.15 TYP		0.006 TYP	
D	27.50	28.50	1.08	1.12
D1	19.80	20.20	0.780	0.795
E	21.50	22.50	0.846	0.886
E1	13.85	14.15	0.545	0.557
e	0.65 BSC		0.0256 BSC	
f	0.22	0.38	0.008	0.015
L	3.70	4.30	0.146	0.170
D2	15.87	16.13	0.624	0.635
E2	9.87	10.13	0.388	0.399
	N1 = 30		N2 = 20	

Figure 1. Case Outline – Continued.

Terminal number	Signal name	Burn-in connection	Terminal number	Signal name	Burn-in connection
1	NC	NC	26	CERRN	R V_{DD}
2	NC	NC	27	N22	R GND
3	M2N	S5	28	U1D(15)	S1
4	V_{SS}	GND	29	NC	NC
5	U2D(15)	S4	30	NC	NC
6	U2D(14)	S3	31	NC	NC
7	U2D(13)	S4	32	V_{DD}	V_{DD}
8	U2D(12)	S3	33	U1D(14)	S2
9	V_{DD}	V_{DD}	34	U1D(13)	S3
10	U2D(11)	S2	35	U1D(12)	S4
11	U2D(10)	S1	36	V_{SS}	GND
12	U2D(9)	S1	37	U1D(11)	S3
13	U2D(8)	S1	38	U1D(10)	S2
14	V_{SS}	GND	39	U1D(9)	S1
15	U2D(7)	S1	40	U1D(8)	S1
16	U2D(6)	S2	41	V_{DD}	V_{DD}
17	U2D(5)	S2	42	U1D(7)	S2
18	U2D(4)	S2	43	U1D(6)	S2
19	V_{DD}	V_{DD}	44	U1D(5)	S4
20	U2D(3)	S1	45	U1D(4)	S3
21	U2D(2)	S1	46	V_{SS}	GND
22	U2D(1)	S3	47	U1D(3)	S2
23	U2D(0)	S1	48	U1D(2)	S1
24	V_{SS}	GND	49	U1D(1)	S2
25	NCERRN	R V_{DD}	50	NC	NC

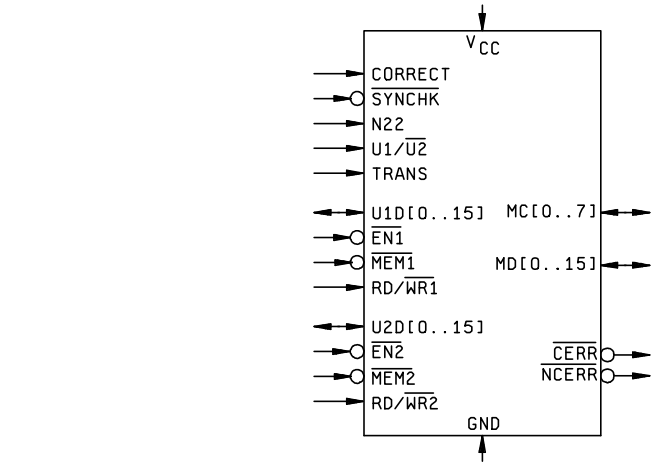
Note: S1 to S10 are connected to a square wave generator (10 KHz) through a resistor R = 1 KΩ

Figure 2. Terminal connections.

Terminal number	Signal name	Burn-in connection	Terminal number	Signal name	Burn-in connection
51	NC	NC	76	MD(14)	S2
52	NC	NC	77	MD(15)	S2
53	U1D(0)	S1	78	V_{SS}	GND
54	V_{DD}	V_{DD}	79	NC	NC
55	RxW1N	S8	80	NC	NC
56	EN1N	R GND	81	NC	NC
57	M1N	S7	82	NC	NC
58	V_{SS}	GND	83	MC0	S2
59	MD(0)	S1	84	MC1	S2
60	MD(1)	S2	85	MC2	S1
61	MD(2)	S2	86	MC3	S3
62	MD(3)	S3	87	V_{DD}	V_{DD}
63	V_{DD}	V_{DD}	88	MC4	S4
64	MD(4)	S4	89	MC5	S1
65	MD(5)	S2	90	MC6	S2
66	MD(6)	S1	91	MC7	S3
67	MD(7)	S4	92	V_{SS}	GND
68	V_{SS}	GND	93	V_{SS}	GND
69	MD(8)	S3	94	EN2	R GND
70	MD(9)	S1	95	U2xU1	S10
71	MD(10)	S3	96	IN	S9
72	MD(11)	S1	97	SYC	R V_{DD}
73	V_{DD}	V_{DD}	98	CORR	R V_{DD}
74	MD(12)	S1	99	RxW2N	S6
75	MD(13)	S4	100	V_{DD}	V_{DD}

Note: S1 to S10 are connected to a square wave generator (10 KHz) through a resistor R = 1 KΩ

Figure 2. Terminal connections - Continued.



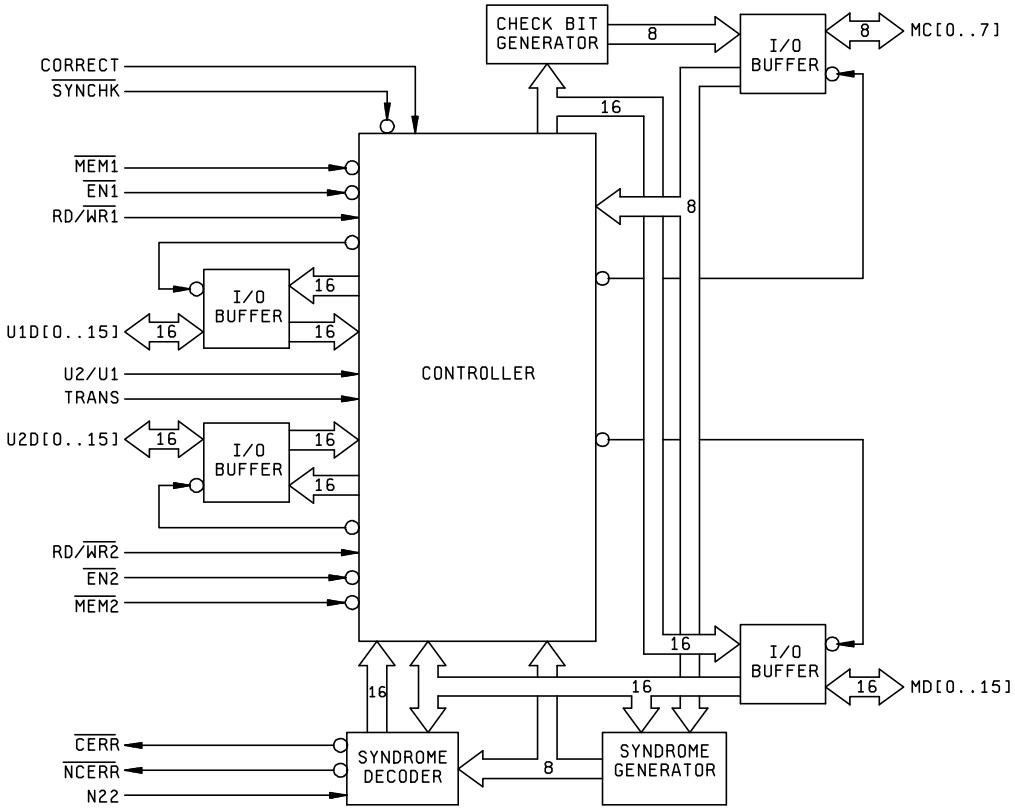
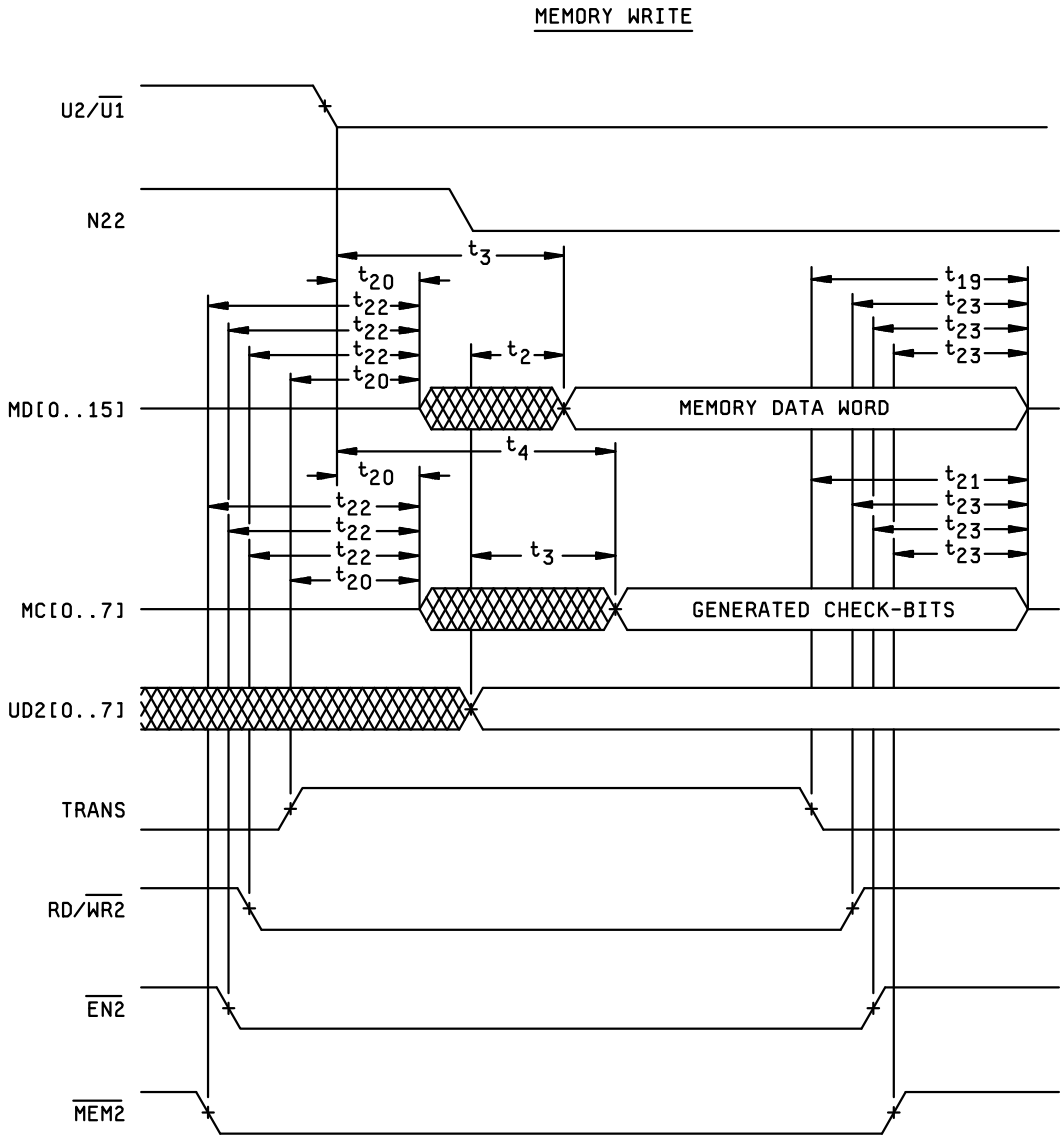


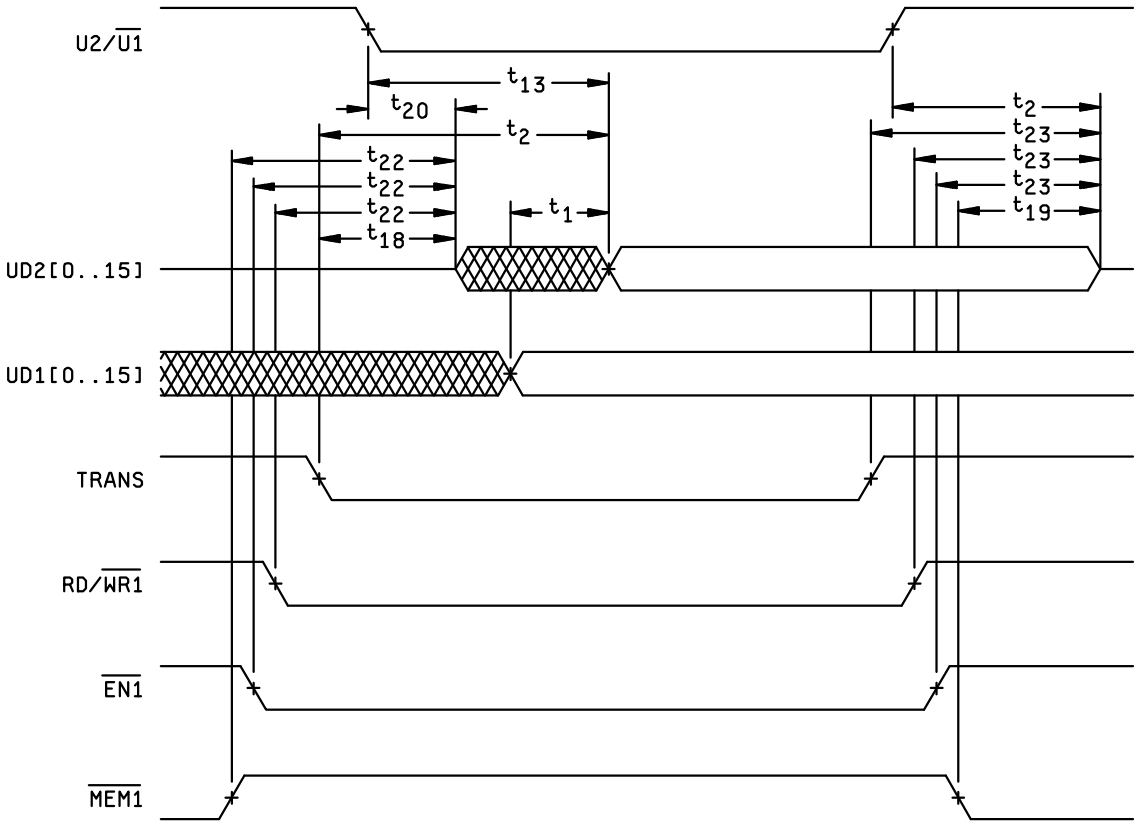
Figure 3. Block diagram and functional diagram.



Propagation delays	t2	t3	t13	t4
	13 ns	26 ns	18 ns	14 ns
Output enable/	t18	t20	t21	t22
Disable time	23 ns	22 ns	22 ns	19 ns

Figure 4. Timing waveforms.

TRANSFER WRITE TIMING DIAGRAM

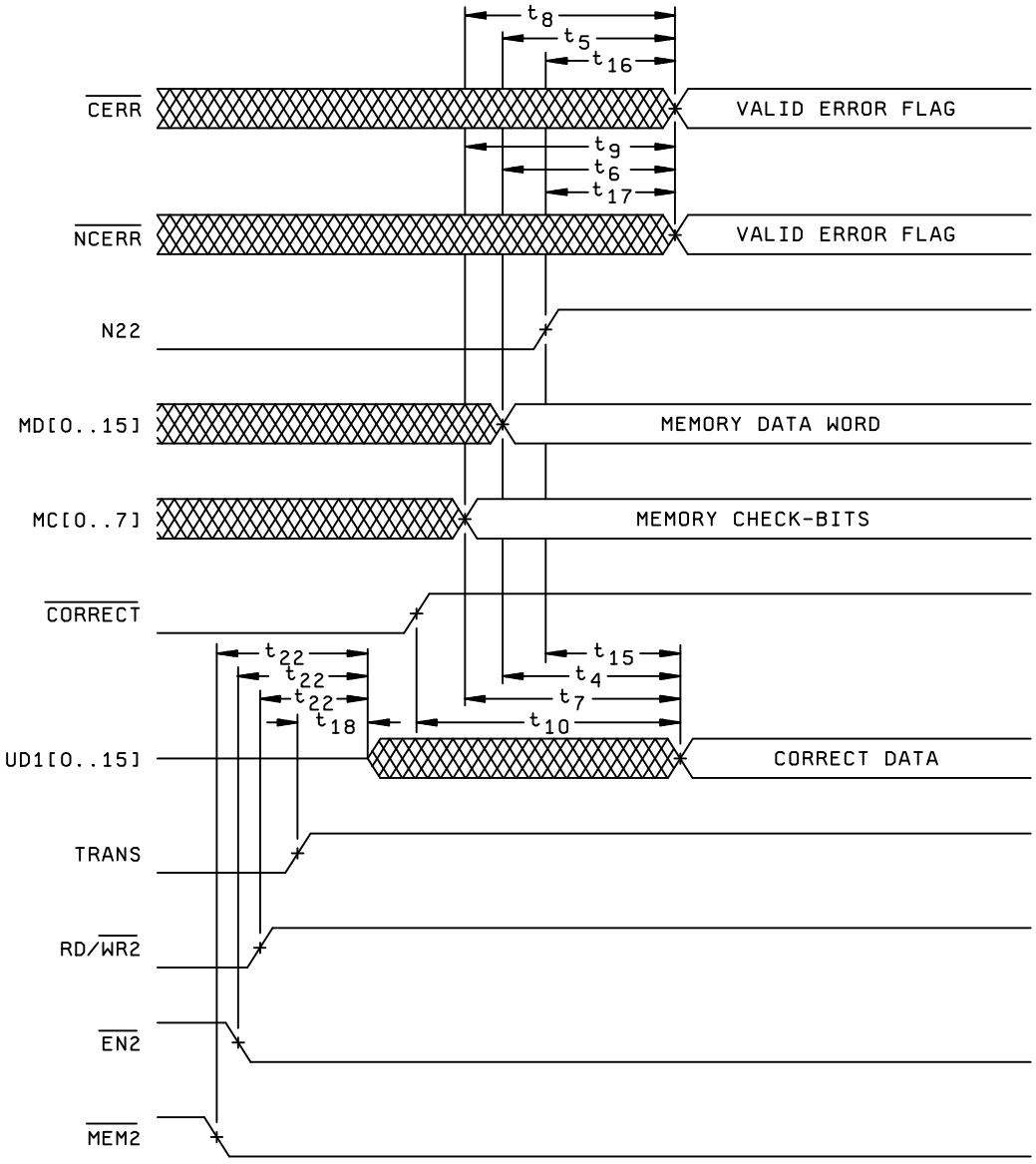


Propagation delays	t1	t12	t13			
	14 ns	20 ns	18 ns			
Output enable/	t18	t19	t20	t21	t22	t23
Disable time	23 ns	23 ns	22 ns	22 ns	19 ns	19 ns

Figure 4. Timing waveforms - Continued.

.

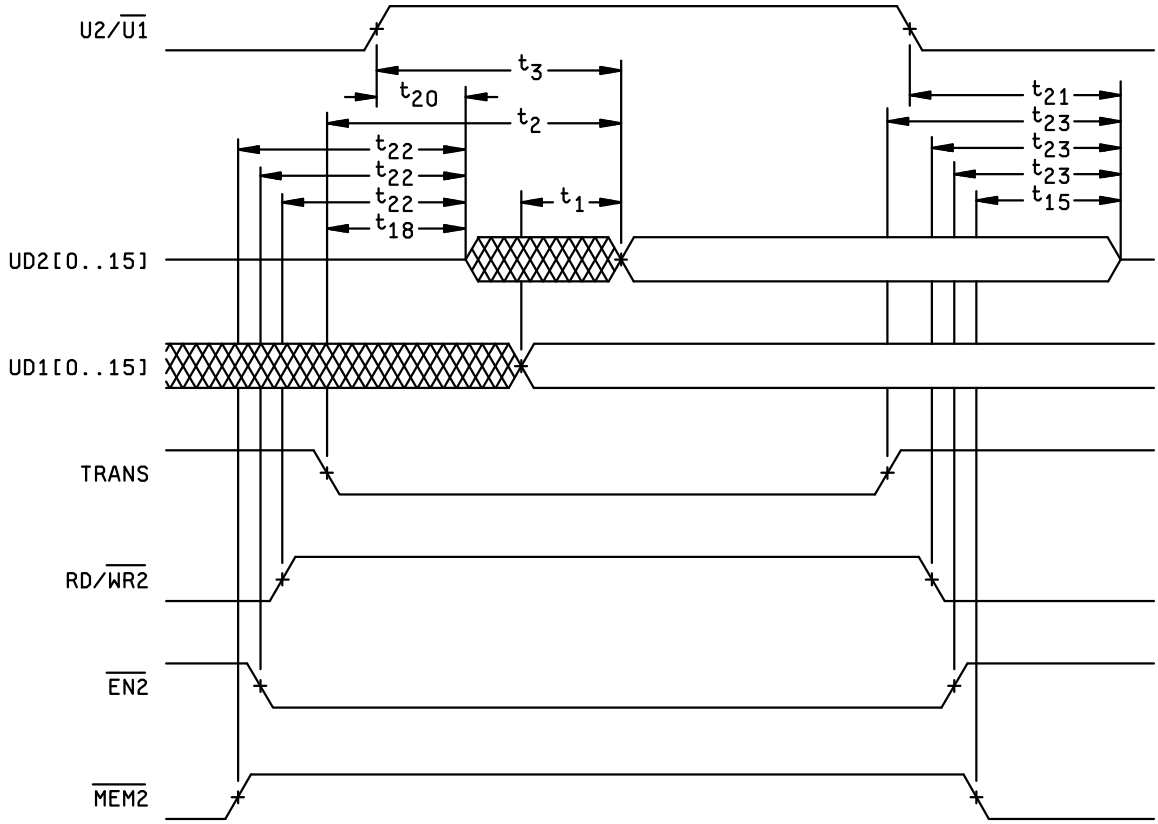
MEMORY READ TIMING DIAGRAM



Propagation delays	t4	t5	t6	t7	t8	t9	t10	t15	t16	t17
	24 ns	22 ns	24 ns	32 ns	31 ns	32 ns	19 ns	24 ns	24 ns	24 ns
Output enable/ Disable time	t18	t22								
	21 ns	19 ns								

Figure 4. Timing waveforms - Continued.

TRANSFER READ TIMING DIAGRAM



Propagation delays	t1	t12	t13			
	14 ns	20 ns	18 ns			
Output enable/	t18	t19	t20	t21	t22	t23
Disable time	23 ns	23 ns	22 ns	22 ns	19 ns	19 ns

Figure 4. Timing waveforms - Continued.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. For device classes Q, and V, sampling and inspection procedures shall be in accordance with MIL-PRF-38535 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein. For device class M, sampling and inspection procedures shall be in accordance with MIL-PRF-38535, appendix A.

4.2 Screening. For device classes Q and V, screening shall be in accordance with MIL-PRF-38535, and shall be conducted on all devices prior to qualification and technology conformance inspection. For device class M, screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection.

4.2.1 Additional criteria for device class M.

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

(1) Test condition A, B, C, D or E. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015.

(2) T_A = +125°C, minimum.

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

4.2.2 Additional criteria for device classes Q and V.

a. The burn-in test duration, test condition and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document revision level control of the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.

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

c. Additional screening for device class V beyond the requirements of device class Q shall be as specified in MIL-PRF-38535 appendix B.

4.3 Qualification inspection for device classes Q and V. Qualification inspection for device classes Q and V shall be in accordance with MIL-PRF-38535. Inspections to be performed shall be those specified in MIL-PRF-38535 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.4).

4.4 Conformance inspection. Technology conformance inspection for classes Q and V shall be in accordance with MIL-PRF-38535 including groups A, B, C, D, and E inspections and as specified herein except where option 2 of MIL-PRF-38535 permits alternate in-line control testing. Quality conformance inspection for device class M shall be in accordance with MIL-PRF-38535, appendix A and as specified herein. Inspections to be performed for device class M shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.4).

4.4.1 Group A inspection.

a. Tests shall be as specified in table II herein.

b. For device class M, subgroups 7 and 8 tests shall be sufficient to verify the functionality of the device. For device classes Q and V, subgroups 7 and 8 shall include verifying the functionality of the device.

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

TABLE II. Electrical test requirements.

Test requirements	Subgroups (in accordance with MIL-STD-883, method 5005, table I)	Subgroups (in accordance with MIL-PRF-38535, table III)	
	Device class M	Device class Q	Device class V
Interim electrical parameters (see 4.2)	1,7,9	1,7,9	1,7,9
Final electrical parameters (see 4.2)	1,2,3,7,8,9,10,11 1/	1,2,3,7,8,9, 10,11 1/ 3/	1,2,3,7,8,9, 10,11 2/ 3/
Group A test requirements (see 4.4)	1,2,3,4,7,8,9,10,11	1,2,3,4,7,8, 9,10,11	1,2,3,4,7,8, 9,10,11
Group C end point electrical parameters (see 4.4)	1,7,9	1,2,3,7,8,9, 10,11 3/	1,2,3,7,8,9, 10,11 3/
Group D end point electrical parameters (see 4.4)	1,7,9	1,7,9	1,7,9
Group E end point electrical parameters (see 4.4)	1,7,9	1,7,9	1,7,9

1/ PDA applies to subgroup 1.
2/ PDA applies to subgroups 1 and 7.
3/ Delta limits are as specified in table IIB herein and shall be required where specified in table I.

TABLE IIB Delta limits.

Parameter 1/	Symbol	Test method	Test conditions	Change limit	Unit
High level input current 2/	I_{IH}			±0.1	µA
Output leakage high current 2/	I_{OZH}			±0.1	µA
Supply current stand-by for array	I_{DDSBA}	As per Table I		±2	µA
Low level output voltage	V_{OL}	As per Table I		±100	mV
High level output voltage	V_{OH}			±100	mV

1/ The parameters shall be recorded before and after the required burn-in and life test to determine the delta limits.
2/ Only for inputs and I/O without pull up or pull down.

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

a. Test condition A, B, C, D, or E. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.

b. T_A = +125°C, minimum.

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

4.4.2.2 Additional criteria for device classes Q and V. The steady-state life test duration, test condition and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The test circuit shall be maintained under document revision level control by the device manufacturer's TRB in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.

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

4.4.4 Group E inspection. Group E inspection is required only for parts intended to be marked as radiation hardness assured (see 3.5 herein).

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

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

c. When specified in the purchase order or contract, a copy of the RHA delta limits shall be supplied.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-PRF-38535 for device classes Q and V or MIL-PRF-38535, appendix A for device class M.

6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use for Government microcircuit applications (original equipment), design applications, and logistics purposes.

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

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

6.3 Record of users. Military and industrial users shall inform Defense Supply Center Columbus when a system application requires configuration control and which SMD's are applicable to that system. 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.

6.4 Comments. Comments on this drawing should be directed to DSCC-VA, Columbus, Ohio 43216-5000, or telephone (614) 692-0547.

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

6.6 Sources of supply.

6.6.1 Sources of supply for device classes Q and V. Sources of supply for device classes Q and V are listed in QML-38535. The vendors listed in QML-38535 have submitted a certificate of compliance (see 3.6 herein) to DSCC-VA and have agreed to this drawing.

6.6.2 Approved sources of supply for device class M. Approved sources of supply for class M are listed in MIL-HDBK-103. The vendors listed in MIL-HDBK-103 have agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DSCC.

STANDARD MICROCIRCUIT DRAWING BULLETIN

DATE: 02-07-24

Approved sources of supply for SMD 5962-01A19 are listed below for immediate acquisition information only and shall be added to MIL-HDBK-103 and QML-38535 during the next revision. MIL-HDBK-103 and QML-38535 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 revision of MIL-HDBK-103 and QML-38535.

Standard microcircuit drawing PIN 1/	Vendor CAGE number	Vendor similar PIN 2/
5962-01A1801QXC	3/	MMKR-29C516EMQ
5962-01A1801VXC	3/	SMKR-29C516ESV
5962-01A1801QYC	F7400	MMFR-29C516EMQ
5962-01A1801VYC	F7400	SMFR-29C516ESV
5962-01A1801QZC	F7400	MMKR-29C516EMQ
5962-01A1801VZC	F7400	SMKR-29C516ESV

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/ This case outline is no longer available from an approved source.

Vendor CAGE number	Vendor name and address
F7400	Atmel Nantes S.A. Part of Atmel Wireless & Microcontrollers La Chantrerie BP 70602 44306 Nantes Cedex 3 France