REVISIONS			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	Added radiation hardness assurance requirements. Table I: sheet 6, under the Group A subgroups column added footnote 4 for the Address input currents and Enable input current tests. Table I: sheet 7, under the Group A subgroups column added footnote 4 for all current tests. Updated drawing paragraphs. -sld	13-05-06	Charles F. Saffle

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

REV STATUS	REV	A	A	A	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
Steve Duncan

CHECKED BY
Greg Cecil

APPROVED BY
Charles F. Saffle

DRAWING APPROVAL DATE
10-02-23

REVISION LEVEL
A

STANDARD MICROCIRCUIT DRAWING

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

AMSC N/A

DLA LAND AND MARITIME
COLUMBUS, OHIO 43218-3990
http://www.landandmaritime.dla.mil/

MICROCIRCUIT, HYBRID, LINEAR, DUAL 16 CHANNEL, ANALOG MULTIPLEXER

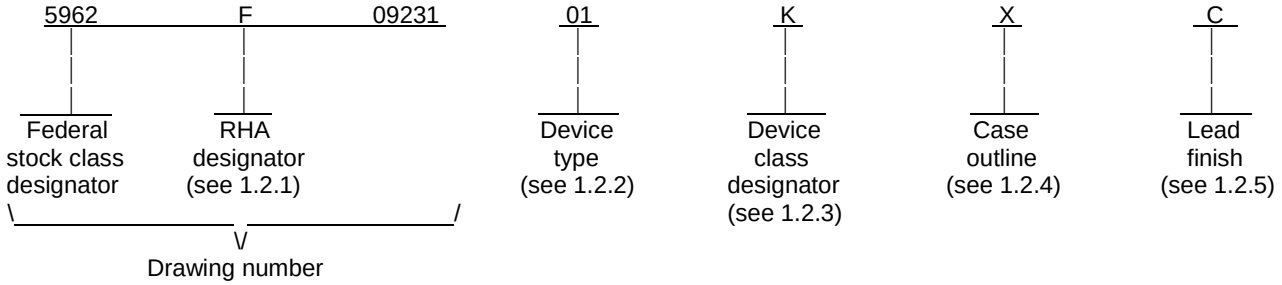
SIZE	CAGE CODE	
A	**67268**	**5962-09231**

SHEET 1 OF 19

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) identify the circuit function as follows:

Device type	Generic number	Circuit function
01	MUX8522	Dual 16 channel analog multiplexer, high impedance analog input
02	MUX8523	Dual 16 channel analog multiplexer, high impedance analog input with ESD protection

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:

Device class	Device performance documentation
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.

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	See figure 1	56	Ceramic quad flat pack

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

1.3 Absolute maximum ratings. 1/

Positive supply voltage between $+V_{EE}$ and GND	+16.5 V dc
Negative supply voltage between $-V_{EE}$ and GND	-16.5 V dc
V_{REF} to GND	+16.5 V dc
Digital input overvoltage range:	
V_{EN} (pins 13 and 44)	($< V_{REF}$ + 4)V, (> GND - 4)V
V_A (pins 14, 15, 16, and 17)	($< V_{REF}$ + 4)V, (> GND - 4)V
V_B (Pins 40,41,42, and 43)	($< V_{REF}$ + 4)V, (> GND - 4)V
Analog input overvoltage range:	
Device type 01	-35 V dc ≤ V_{IN} ≤ +35 V dc
Device type 02	-18 V dc ≤ V_{IN} ≤ +18 V dc
Power dissipation (P_D), T_C = -55°C to +125°C	33 mW
Thermal resistance junction-to-case (θ_{JC})	10°C/W 2/
Storage temperature	-65°C to +150°C
Lead temperature (soldering, 10 seconds)	+300°C

1.4 Recommended operating conditions.

Positive supply voltage ($+V_{EE}$)	+15 V dc 3/
Negative supply voltage ($-V_{EE}$)	-15 V dc 3/
V_{REF}	+5 V dc 3/
Logic low level voltage (V_{AL})	+0.8 V dc
Logic high level voltage (V_{AH})	+4.0 V dc
Case operating temperature range (T_C)	-55°C to +125°C

1.5 Radiation features. 4/

Maximum Total Ionizing Dose (TID) (dose rate = 50 - 300 rad(Si)/s)	300 krad(Si) 5/ 6/
Enhanced Low Dose Rate Sensitvity (ELDRS)	150 krad(Si) 5/
Single Event Phenomenon (SEP) effective linear energy transfer (LET):	
Single Event Latchup (SEL)	Immune 5/
Single Event Upset (SEU)	≤ 86 MeV-cm2/mg 7/
Single Event Transient (SET)	≤ 86 MeV-cm2/mg 7/

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/ Based on the maximum power dissipation spread over the multiplexer die.
3/ Recommended power supply turn on sequence : $+V_{EE}$, $-V_{EE}$, followed by V_{REF}.
4/ See section 4.3.5 for the manufacturer's radiation hardness assurance analysis and testing.
5/ The only active element in these devices are purchased as SMD 5962F9563002V9A which assures TID, ELDRS, and SEL.
6/ The package in this drawing is a larger version of the same type (flat package) as the one in SMD 5962-95630, the lid underside is nickel plate (no gold), and RGA data shows negligible amounts of hydrogen.
7/ SEU and SET testing performed at 86 MeV-cm2/mg with no upsets or single event transients. These devices will be re-tested after design or process changes that can affect RHA response of these devices.

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.

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 http://quicksearch.dla.mil or 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.

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 Switching waveform(s). The switching waveform(s) shall be as specified on figure 4.

3.2.5 Block diagram. The block diagram shall be as specified on figure 5.

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 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.

3.6 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 (DLA Land and Maritime -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 DLA Land and Maritime -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.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions 1/ 2/ $-55°C \le T_C \le +125°C$ unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Supply currents	$+I_{EE}$	$V_{EN(0-15)} = V_{EN(16-31)} = V_{A(0-3)} = V_{B(0-3)} = 0$	1,2,3	All	0.1	1	mA
	$-I_{EE}$	$V_{EN(0-15)} = V_{EN(16-31)} = V_{A(0-3)} = V_{B(0-3)} = 0$	1,2,3	All	-1	-0.1	mA
	$+I_{SBY}$	$V_{EN(0-15)} = V_{EN(16-31)} = 4$ V, $V_{A(0-3)} = V_{B(0-3)} = 0$ 3/	1,2,3	All	0.1	1	mA
	$-I_{SBY}$	$V_{EN(0-15)} = V_{EN(16-31)} = 4$ V, $V_{A(0-3)} = V_{B(0-3)} = 0$ 3/	1,2,3	All	-1	-0.1	mA
Address input currents	$I_{AL(0-3)A}$	$V_A = 0$ V	1,2,3 4/	All	-1	1	µA
	$I_{AH(0-3)A}$	$V_A = 5$ V	1,2,3 4/	All	-1	1	µA
	$I_{AL(0-3)B}$	$V_B = 0$ V	1,2,3 4/	All	-1	1	µA
	$I_{AH(0-3)B}$	$V_B = 5$ V	1,2,3 4/	All	-1	1	µA
Enable input current	$I_{ENL(0-15)}$	$V_{EN(0-15)} = 0$ V	1,2,3 4/	All	-1	1	µA
	$I_{ENH(0-15)}$	$V_{EN(0-15)} = 5$ V	1,2,3 4/	All	-1	1	µA
	$I_{ENL(16-31)}$	$V_{EN(16-31)} = 0$ V	1,2,3 4/	All	-1	1	µA
	$I_{ENH(16-31)}$	$V_{EN(16-31)} = 5$ V	1,2,3 4/	All	-1	1	µA

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ 2/ $-55°C \le T_C \le +125°C$ unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Positive input leakage current (CH0-CH31)	$+I_{SOFFOUTPUT(ALL)}$	V_{IN} = +10 V, V_{EN} = 4 V, output and all unused inputs = -10 V 5/ 6/	1,2,3 4/	01	-100	+100	nA
				02	-100	+700	
Negative input leakage current (CH0-CH31)	$-I_{SOFFOUTPUT(ALL)}$	V_{IN} = -10 V, V_{EN} = 4 V, output and all unused inputs = +10 V 5/ 6/	1,2,3 4/	01	-100	+100	nA
				02	-100	+700	
Positive output leakage current outputs (pins 12 and 45)	$+I_{DOFFOUTPUT(ALL)}$	V_{OUT} = +10 V, V_{EN} = 4 V, output and all unused inputs = -10 V 6/ 7/	1,2,3 4/	All	-100	+100	nA
Negative output leakage current outputs (pins 12 and 45)	$-I_{DOFFOUTPUT(ALL)}$	V_{OUT} = -10 V, V_{EN} = 4 V, output and all unused inputs = +10 V 6/ 7/	1,2,3 4/	All	-100	+100	nA
Input clamped voltage (CH0-CH31)	+VCLMP	V_{EN} = 4 V, all unused inputs are open 6/	1	02	18.0	23.0	V
			2		18.0	23.5	
			3		17.5	22.5	
	-VCLMP	V_{EN} = 4 V, all unused inputs are open 6/	1	02	-23.0	-18.0	V
			2		-23.5	-18.0	
			3		-22.5	-17.5	

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ 2/ $-55°C \le T_C \le +125°C$ unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
Switch ON resistance outputs (pins 12 and 45)	$R_{DS(ON)(0-31)A}$	V_{IN} = +15 V, V_{EN} = 0.8 V, I_{OUT} = -1 mA 5/ 6/ 8/	1,2,3	All	500	3000	Ω
	$R_{DS(ON)(0-31)B}$	V_{IN} = +5 V, V_{EN} = 0.8 V, I_{OUT} = -1 mA 5/ 6/ 8/	1,2,3	All	500	3000	Ω
	$R_{DS(ON)(0-31)C}$	V_{IN} = -5 V, V_{EN} = 0.8 V, I_{OUT} = +1 mA 5/ 6/ 8/	1,2,3	All	500	3000	Ω
Switching tests	t_AHL	R_L = 10 kΩ, C_L = 50 pF, See figure 4	9,10,11	All	10	1500	ns
	t_ALH	R_L = 10 kΩ, C_L = 50 pF, See figure 4	9,10	All	10	2000	ns
			11		10	5000	
	$t_{ON}EN$	R_L = 1 kΩ, C_L = 50 pF, See figure 4	9,10,11	All	10	1500	ns
	$t_{OFF}EN$	R_L = 1 kΩ, C_L = 50 pF, See figure 4	9,10,11	All	10	1000	ns

1/ $+V_{EE}$ = +15 V dc, $-V_{EE}$ = -15 V dc, and V_{REF} = +5 V dc, unless otherwise specified. Recommended power supply turn on sequence : $+V_{EE}$, $-V_{EE}$, followed by V_{REF}.

2/ Measure inputs sequentially. Ground all unused inputs.

3/ If not tested, shall be guaranteed to the limits specified in table I.

4/ Subgroup 3 for these parameters is guaranteed, but not production tested.

5/ V_{IN} is the applied input voltage to the input channels (CH0-CH31).

6/ V_{EN} is the applied input voltage to the enable lines $\overline{EN}$(0- 5) and $\overline{EN}$(16-31).

7/ V_{OUT} is the applied input voltage to the output lines OUTPUT1(0-15) and OUTPUT2(16-31).

8/ Negative current is the current flowing out of each of the pins. Positive current is the current flowing into each of the pins.

Case outline X.

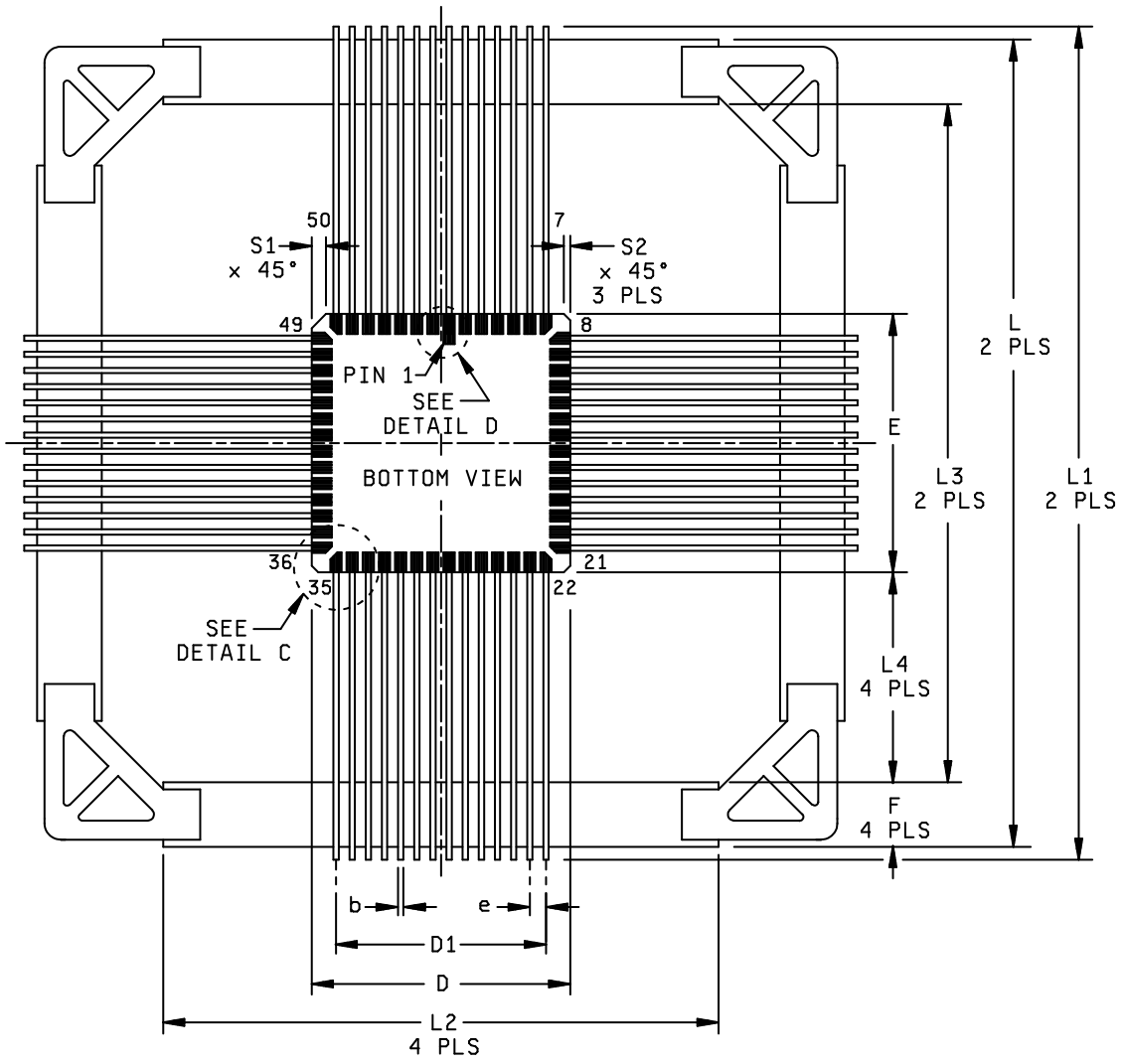


FIGURE 1. Case outline(s).

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-09231
DLA LAND AND MARITIME COLUMBUS, OHIO 43218-3990		REVISION LEVEL A	SHEET 9

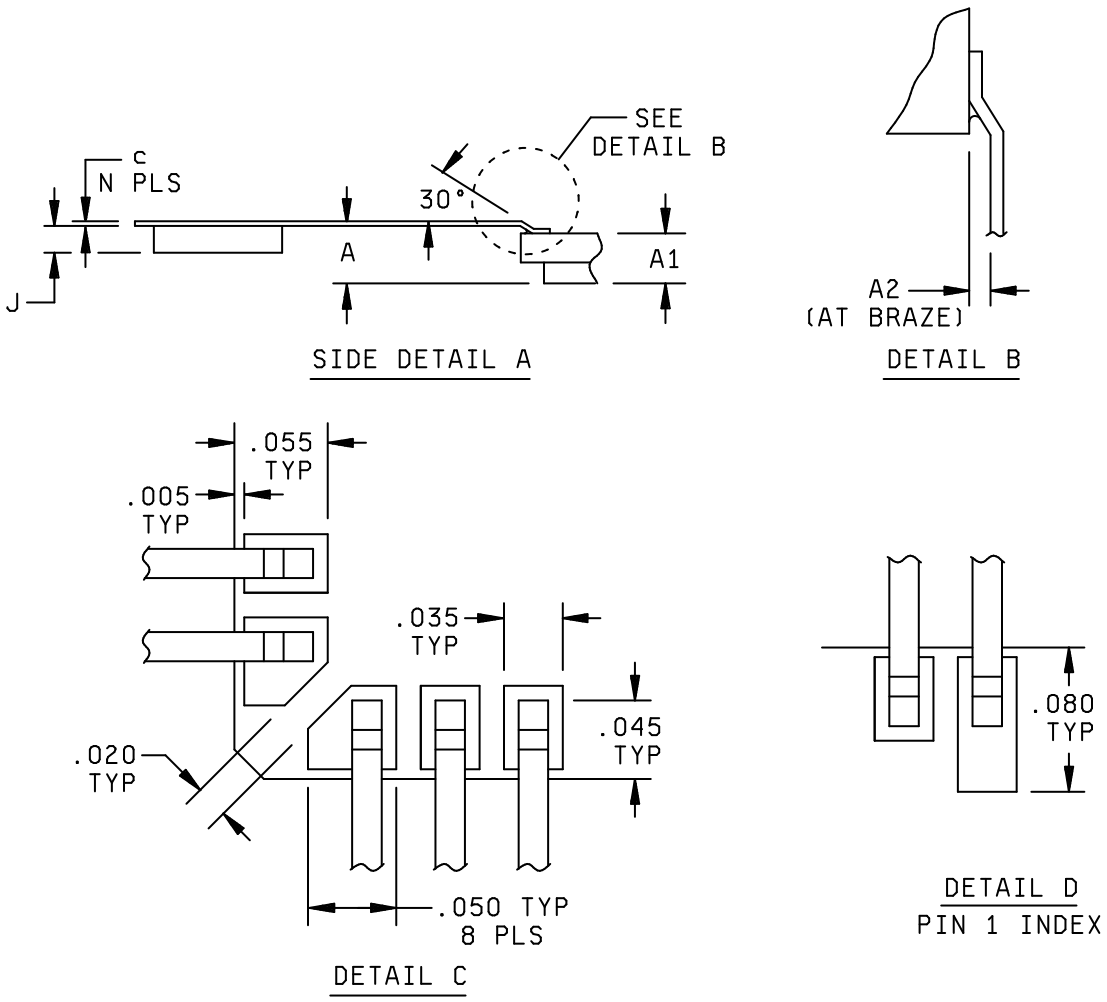


FIGURE 1. Case outline(s) - Continued.

Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A		.190		4.83
A1	.139	.170	3.53	4.32
A2	.005	.011	0.13	0.28
b	.0135	.0195	0.34	0.50
c	.005	.008	0.13	0.20
D/E	.790	.810	20.07	20.57
D1	.645	.655	16.38	16.64
e	.050 BSC		1.27 BSC	
F	.200 TYP		5.08 TYP	
J	.035 TYP		0.89 TYP	
L	2.490	2.510	63.25	63.75
L1		2.580		65.53
L2	1.700	1.740	43.18	44.20
L3	2.090	2.110	53.09	53.59
L4	.650 TYP		16.51 TYP	
N	56		56	
S1	.030 TYP		0.76 TYP	
S2	.015 TYP		0.38 TYP	

NOTES:
1. Pin 1 is indicated by an ESD triangle on top of the package and by an index on the bottom of the package.
2. 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.
3. N equals 56, the total number of leads on the package.
4. Pin numbers are for reference only.

FIGURE 1. Case outline(s) - Continued.

Device types	01 and 02		
Case outline	X		
Terminal number	Terminal symbol	Terminal number	Terminal symbol
1	CH0	29	CH31
2	CH1	30	CH30
3	CH2	31	CH29
4	CH3	32	CH28
5	CH4	33	CH27
6	CH5	34	CH26
7	GND	35	GND
8	GND	36	GND
9	CH6	37	CH25
10	CH7	38	CH24
11	CASE GND	39	V_{REF}
12	OUTPUT1(0-15)	40	B3
13	$\overline{EN}$ (0 – 15)	41	B2
14	A0	42	B1
15	A1	43	B0
16	A2	44	$\overline{EN}$ (16 – 31)
17	A3	45	OUTPUT2(16-31)
18	$+V_{EE}$	46	$-V_{EE}$
19	CH15	47	CH16
20	CH14	48	CH17
21	GND	49	GND
22	GND	50	GND
23	CH13	51	CH18
24	CH12	52	CH19
25	CH11	53	CH20
26	CH10	54	CH21
27	CH9	55	CH22
28	CH8	56	CH23

NOTE:
1. Package lid is internally connected to circuit ground (Pins 7, 8, 11, 21, 22, 35, 36, 49, and 50).

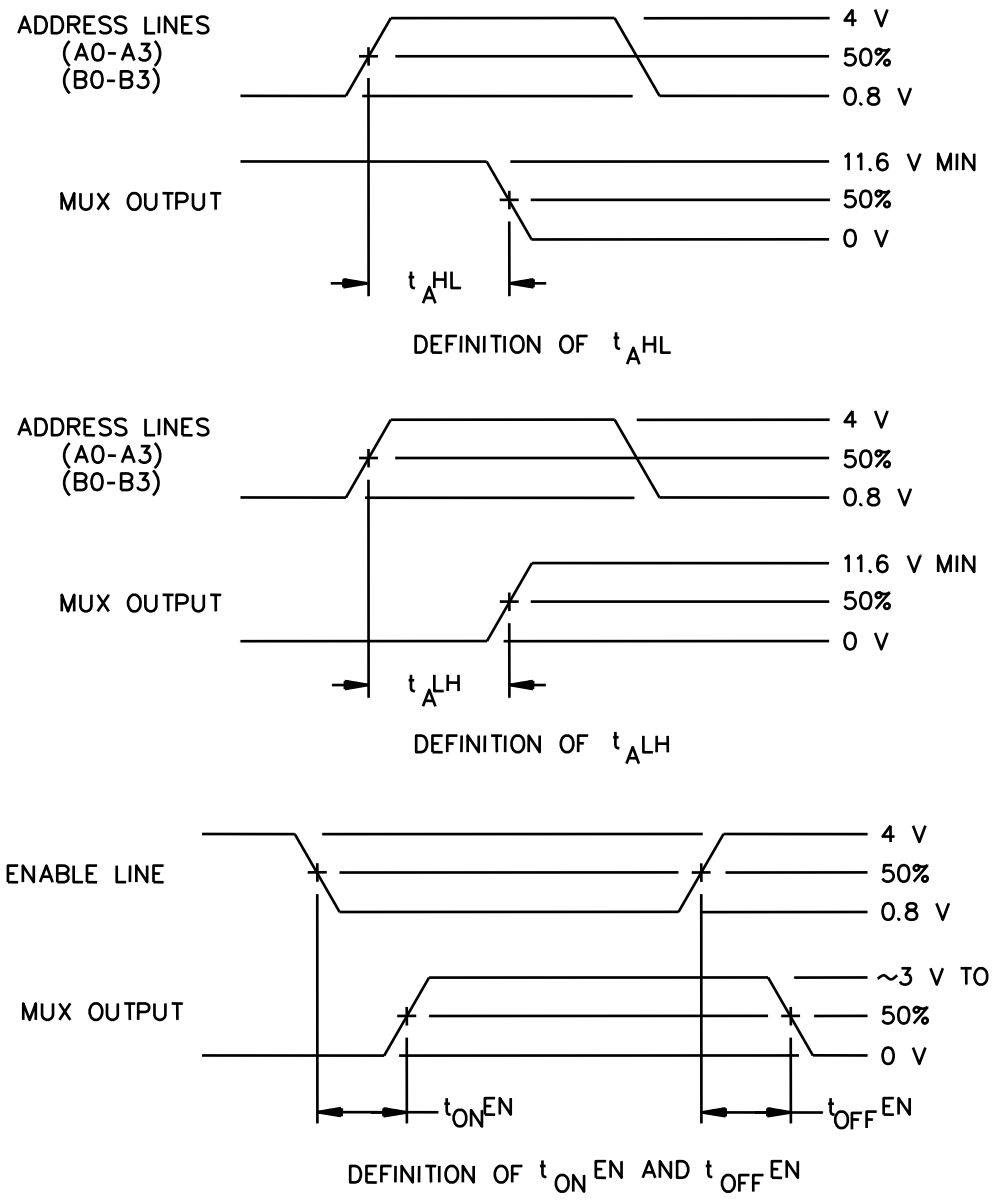
FIGURE 2. Terminal connections.

Truth table (CH0-CH15)					
A3	A2	A1	A0	$\overline{EN}$ (0-15)	"ON" Channel OUTPUT1 1/
X	X	X	X	H	None
L	L	L	L	L	CH0
L	L	L	H	L	CH1
L	L	H	L	L	CH2
L	L	H	H	L	CH3
L	H	L	L	L	CH4
L	H	L	H	L	CH5
L	H	H	L	L	CH6
L	H	H	H	L	CH7
H	L	L	L	L	CH8
H	L	L	H	L	CH9
H	L	H	L	L	CH10
H	L	H	H	L	CH11
H	H	L	L	L	CH12
H	H	L	H	L	CH13
H	H	H	L	L	CH14
H	H	H	H	L	CH15

Truth table (CH16-CH31)					
B3	B2	B1	B0	$\overline{EN}$ (16-31)	"ON" Channel OUTPUT2 2/
X	X	X	X	H	None
L	L	L	L	L	CH16
L	L	L	H	L	CH17
L	L	H	L	L	CH18
L	L	H	H	L	CH19
L	H	L	L	L	CH20
L	H	L	H	L	CH21
L	H	H	L	L	CH22
L	H	H	H	L	CH23
H	L	L	L	L	CH24
H	L	L	H	L	CH25
H	L	H	L	L	CH26
H	L	H	H	L	CH27
H	H	L	L	L	CH28
H	H	L	H	L	CH29
H	H	H	L	L	CH30
H	H	H	H	L	CH31

1/ Between (CH0-CH15) and OUTPUT1(0-15).
2/ Between (CH16-CH31) and OUTPUT2(16-31).

FIGURE 3. Truth table.



NOTE: f = 10 kHz, duty cycle = 50%.

FIGURE 4. Switching test waveform(s).

DEVICE TYPE 01

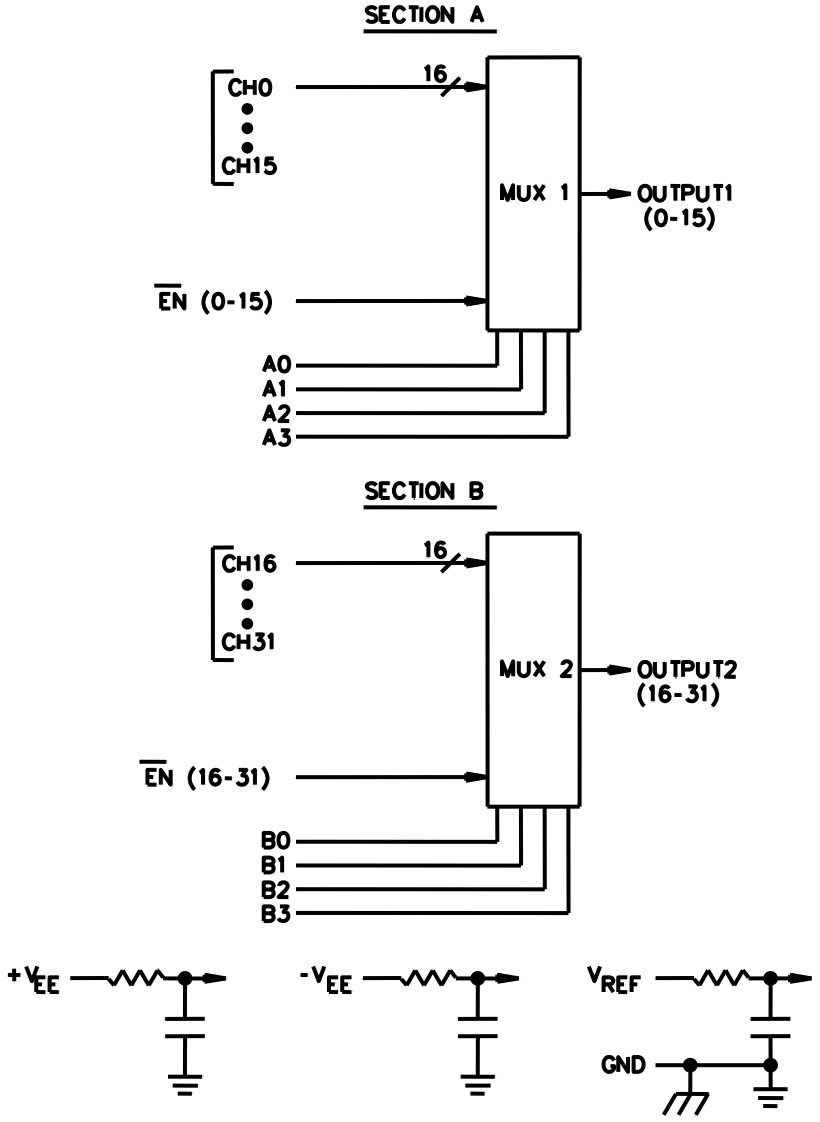


FIGURE 5. Block Diagram.

DEVICE TYPE 02

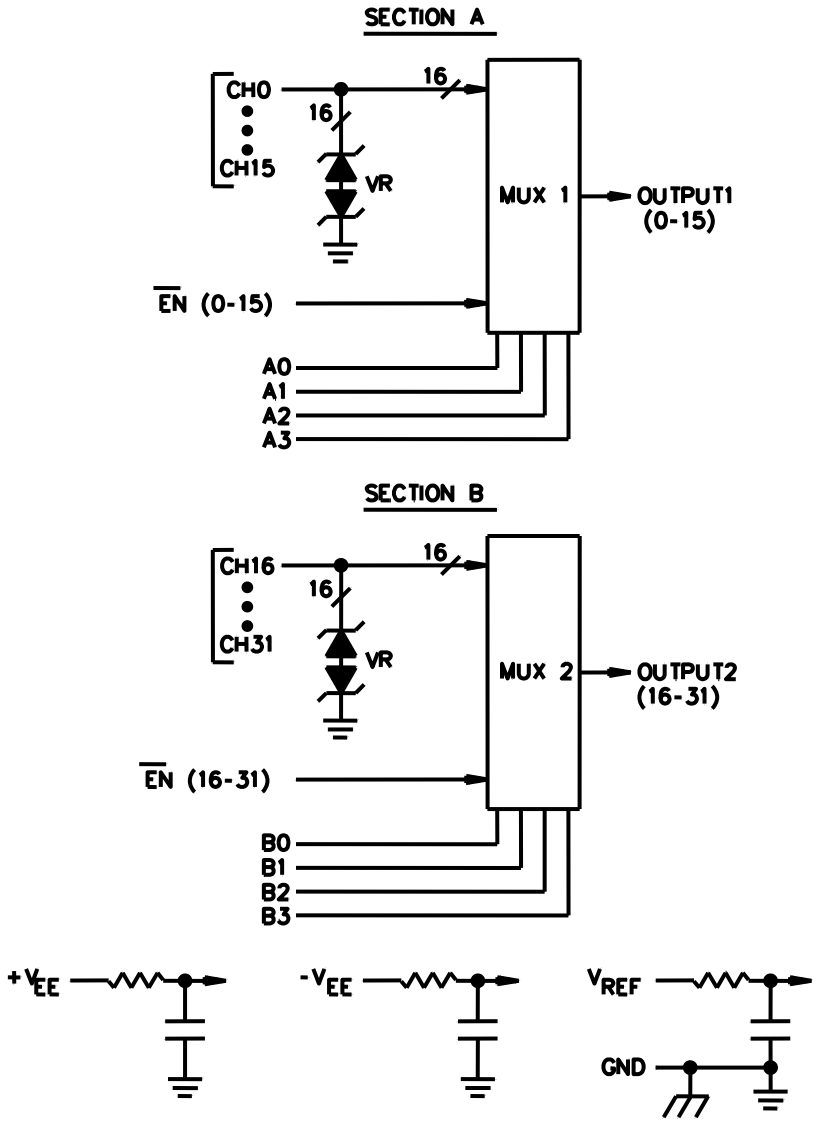


FIGURE 5. Block diagram - Continued.

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, 9
Final electrical parameters	1*, 2, 3, 9, 10, 11
Group A test requirements	1, 2, 3, 9, 10, 11
Group C end-point electrical parameters	1, 2, 3, 9, 10, 11
End-point electrical parameter 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 A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to 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) 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 4, 5, 6, 7, and 8 shall be omitted.

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 A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to 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) 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). RHA qualification is required only for those devices with the RHA designator as specified herein.

4.3.5.1 Radiation Hardness Assurance (RHA) inspection. RHA qualification is required for those devices with the RHA designator as specified herein. End-point electrical parameters for radiation hardness assurance (RHA) devices shall be specified in table II. Radiation testing will be in accordance with the qualifying activity (DLA Land and Maritime -VQ) approved plan and with MIL-PRF-38534, Appendix G.

a. The hybrid device manufacturer shall establish procedures controlling component radiation testing, and shall establish radiation test plans used to implement component lot qualification during procurement. Test plans and test reports shall be filed and controlled in accordance with the manufacturer's configuration management system.

b. The hybrid device manufacturer shall designate a RHA program manager to oversee component lot qualification, and to monitor design changes for continued compliance to RHA requirements.

4.3.5.1.1 Hybrid level RHA qualification. Hybrid level testing is not performed since the only active element other than diodes is a QML class V RHA-Radhard to level F (300 krad(Si) ELDRS and SEL free device. The hybrid package is a larger version of the class V flat package on 5962-95630 with a nickel underside lid, seam-sealed and with residual gas analysis data supporting negligible amounts of hydrogen in the package.

4.3.5.2 Qualification by similarity. The devices on this SMD are considered similar differing only in the number of 5962F9563002V9A die and the supporting diodes, capacitors, and resistors that go with each one.

4.3.5.3 Element level qualification.

4.3.5.3.1 Total ionizing dose irradiation. See SMD 5962-95630.

4.3.5.3.1.1 Single Event Phenomena (SEP). See SMD 5962-95630.

4.3.5.3.1.2 Radiation Lot Acceptance Testing (RLAT). The only active element other than diodes in these devices are purchased as 5962F9563002V9A. The radiation performance and post radiation electrical specifications in table I of this drawing are reflective of those specified in 5962-95630 device type 02.

4.3.5.4 Technologies not tested. Testing is not performed on device technologies including diodes, that the manufacturer considers to be radiation hardened.

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 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 dra

STANDARD MICROCIRCUIT DRAWING BULLETIN

DATE: 13-05-06

Approved sources of supply for SMD 5962-09231 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 at http://www.landandmaritime.dla.mil/Programs/Smcr/.

Standard microcircuit drawing PIN 1/	Vendor CAGE number	Vendor similar PIN 2/
5962-0923101KXC 5962F0923101KXC	88379 88379	MUX8522-201-1S MUX8522-901-1S
5962-0923102KXC 5962F0923102KXC	88379 88379	MUX8523-201-1S MUX8523-901-1S

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.

Vendor CAGE number	Vendor name and address
88379	Aeroflex Plainview Incorporated, (Aeroflex Microelectronic Solutions) 35 South Service Road Plainview, NY 11803-4193