

REVISIONS

LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	Remove one vendor - FSCM - 04713. Editorial changes throughout.	84-04-03	N. A. Hauck
B	Table I: Change t_{PLH2} load resistor condition to 1K ohm.	84-09-04	N. A. Hauck
C	Delete vendor CAGE 31019. Add vendor CAGE 18714. Technical changes in 1.3, 1.4, table I, and table II. Add figures 3 and 4. Change to military drawing format. Change drawing CAGE code to 67268. Inactivate case outline F for new design, not available from an approved source. Editorial changes throughout.	89-11-22	M. A. Frye
D	Add device type 02. Add CAGE 04713 as supplier. Editorial changes throughout.	93-08-20	M. L. Poelking
E	Changes in accordance with NOR 5962-R013-94	93-10-21	M. L. Poelking
F	Add device type 03. Add CAGE 27014 as supplier. Editorial changes throughout.	94-01-05	M. L. Poelking

THE ORIGINAL FIRST PAGE OF THIS DRAWING HAS BEEN REPLACED.

CURRENT CAGE CODE 67268

REV																															
SHEET																															
REV	F																														
SHEET	14																														
REV STATUS OF SHEETS				REV		F	F	D	D	F	F	F	F	F	F	F	F	F	F												
				SHEET		1	2	3	4	5	6	7	8	9	10	11	12	13													
PMIC N/A				PREPARED BY Marcia B. Kelleher				DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444																							
STANDARDIZED MILITARY DRAWING THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE AMSC N/A				CHECKED BY Monica L. Poelking																											
				APPROVED BY Michael A. Frye																											
				DRAWING APPROVAL DATE 82-02-04																											
				REVISION LEVEL F																											
				SIZE A		CAGE CODE 14933		81018																							
				SHEET		1		OF		14																					

DESC FORM 193-1

JUL 91

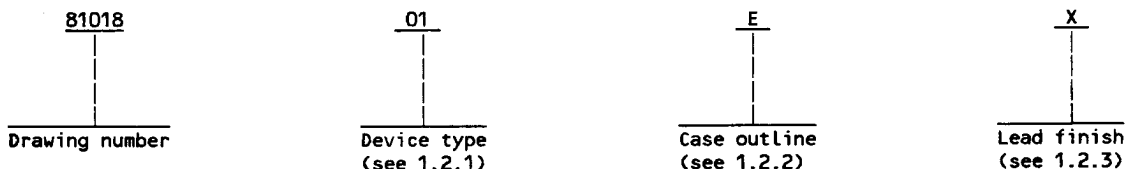
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

5962-E097-94

1. SCOPE

1.1 Scope. This drawing describes device requirements for class B microcircuits in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices".

1.2 Part or Identifying Number (PIN). The complete PIN shall be as shown in the following example:



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

Device type	Generic number	Circuit function
01	4053B	Triple 2-channel analog multiplexer/demultiplexer
02	14053B	Triple 2-channel analog multiplexer/demultiplexer
03	4053B	Triple 2-channel analog multiplexer/demultiplexer

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

Outline letter	Descriptive designator	Terminals	Package style
E	GDIP1-T16 or CDIP2-T16	16	Dual-in-line package
F	GDFP2-F16 or CDFP3-F16	16	Flat pack

1.2.3 Lead finish. The lead finish shall be as specified in MIL-M-38510. Finish letter "X" shall not be marked on the microcircuit or its packaging. The "X" designation is for use in specifications when lead finishes A, B, and C are considered acceptable and interchangeable without preference.

1.3 Absolute maximum ratings.

Supply voltage range (V_{DD}): 1/	
Device type 01	-0.5 V dc to +20 V dc
Device types 02 and 03	-0.5 V dc to +18 V dc
Input voltage range	-0.5 V dc to $V_{DD} + 0.5$ V dc
DC input current	± 10 mA
Storage temperature range	-65°C to +150°C
Maximum power dissipation (P_D): 2/	
Device types 01 and 03	500 mW
Device type 02	300 mW
Lead temperature (soldering, 10 seconds):	
Device types 01 and 02	+300°C
Device type 03	+260°C
Thermal resistance, junction-to-case (θ_{JC})	See MIL-STD-1835
Junction temperature (T_J)	+175°C

1.4 Recommended operating conditions.

Supply voltage range (V_{DD}):	
Device type 01	+3.0 V dc to +18 V dc
Device types 02 and 03	+3.0 V dc to +15 V dc
Case operating temperature range (T_C)	-55°C to +125°C

1/ Voltages referenced to V_{SS} or V_{EE} , whichever is more negative.

2/ For $T_C = +100^\circ\text{C}$ to $+125^\circ\text{C}$, derate linearly at 12 mW/°C to 200 mW.

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE A		81018
		REVISION LEVEL F	SHEET 2

DESC FORM 193A

JUL 91

2. APPLICABLE DOCUMENTS

2.1 Government specification, standards, and bulletin. Unless otherwise specified, the following specification, standards, and bulletin of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this drawing to the extent specified herein.

SPECIFICATION

MILITARY

MIL-M-38510 - Microcircuits, General Specification for.

STANDARDS

MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.

MIL-STD-1835 - Microcircuit Case Outlines.

BULLETIN

MILITARY

MIL-BUL-103 - List of Standardized Military Drawings (SMD's).

(Copies of the specification, standards, and bulletin required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

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.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices" and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510 and herein.

3.2.1 Case outline(s). The case outline(s) shall be in accordance with 1.2.2 herein.

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

3.2.3 Truth table(s). The truth table(s) shall be as specified on figure 2.

3.2.4 Logic diagram(s). The logic diagram(s) shall be as specified on figure 3.

3.2.5 Test circuit and switching waveforms. The test circuit and switching waveforms shall be as specified on figure 4.

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 (case or ambient) 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. Marking shall be in accordance with MIL-STD-883 (see 3.1 herein). 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-BUL-103 (see 6.6 herein).

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE A		81018
		REVISION LEVEL D	SHEET 3

DESC FORM 193A

JUL 91

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_c \leq +125^{\circ}\text{C}$ unless otherwise specified	Device types	Group A subgroups	Limits		Unit
					Min	Max	
Quiescent supply current	I_{DD}	$V_{DD} = 5\text{ V},$ $\frac{1}{}$ $V_{IN} = 0.0\text{ V or } V_{DD}$	ALL	1, 3		5	μA
				2		150	
		$V_{DD} = 10\text{ V},$ $\frac{1}{}$ $V_{IN} = 0.0\text{ V or } V_{DD}$	ALL	1, 3		10	
				2		300	
		$V_{DD} = 15\text{ V},$ $\frac{1}{}$ $V_{IN} = 0.0\text{ V or } V_{DD}$	ALL	1, 3		20	
				2		600	
Low level input voltage	V_{IL}	$V_{DD} = 5\text{ V},$ $ I_{IS} < 2\text{ }\mu\text{A}$ $V_O = 0.5\text{ V or } 4.5\text{ V}$ $V_{EE} = V_{SS}$ $R_L = 1\text{ k}\Omega$ to V_{SS}	ALL	1, 2, 3		1.5	V
		$V_{DD} = 10\text{ V},$ $ I_{IS} < 2\text{ }\mu\text{A}$ $V_O = 1.0\text{ V or } 9.0\text{ V}$ $\frac{1}{}$ $V_{EE} = V_{SS}$ $R_L = 1\text{ k}\Omega$ to V_{SS}	ALL	1, 2, 3		3.0	
		$V_{DD} = 15\text{ V},$ $ I_{IS} < 2\text{ }\mu\text{A}$ $V_O = 1.5\text{ V or } 13.5\text{ V}$ $V_{EE} = V_{SS}$ $R_L = 1\text{ k}\Omega$ to V_{SS}	ALL	1, 2, 3		4.0	
High level input voltage	V_{IH}	$V_{DD} = 5\text{ V},$ $ I_{IS} < 2\text{ }\mu\text{A}$ $V_O = 0.5\text{ V or } 4.5\text{ V}$ $V_{EE} = V_{SS}$ $R_L = 1\text{ k}\Omega$ to V_{SS}	ALL	1, 2, 3	3.5		V
		$V_{DD} = 10\text{ V},$ $ I_{IS} < 2\text{ }\mu\text{A}$ $V_O = 1.0\text{ V or } 9.0\text{ V}$ $\frac{1}{}$ $V_{EE} = V_{SS}$ $R_L = 1\text{ k}\Omega$ to V_{SS}	ALL	1, 2, 3	7.0		
		$V_{DD} = 15\text{ V},$ $ I_{IS} < 2\text{ }\mu\text{A}$ $V_O = 1.5\text{ V or } 13.5\text{ V}$ $V_{EE} = V_{SS}$ $R_L = 1\text{ k}\Omega$ to V_{SS}	ALL	1, 2, 3	11.0		

See footnotes at end of table.

STANDARDIZED
MILITARY DRAWING
DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

SIZE
A

81018

REVISION LEVEL
D

SHEET

4

DESC FORM 193A
JUL 91

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$ unless otherwise specified	Device types	Group A subgroups	Limits		Unit
					Min	Max	
OFF channel leakage current (all channels off)	I_{OFF1}	$V_{\text{DD}} = 18 \text{ V},$ $V_{\text{EE}} = 0.0 \text{ V}$	01	1, 3	-100	+100	nA
				2	-1,000	+1,000	
		$V_{\text{DD}} = 15 \text{ V},$ $V_{\text{EE}} = 0.0 \text{ V}$	02	1, 3	-100	+100	
				2	-1,000	+1,000	
		$V_{\text{DD}} = 15 \text{ V},$ $V_{\text{EE}} = 0.0 \text{ V}$	03	1, 3	-200	+200	
				2	-2,000	+2,000	
OFF channel leakage current (any channels off)	I_{OFF2}	$V_{\text{DD}} = 18 \text{ V},$ $V_{\text{EE}} = 0.0 \text{ V}$	01	1, 3	-100	+100	
				2	-1,000	+1,000	
		$V_{\text{DD}} = 15 \text{ V},$ $V_{\text{EE}} = 0.0 \text{ V}$	02	1, 3	-100	+100	
				2	-1,000	+1,000	
		$V_{\text{DD}} = 15 \text{ V},$ $V_{\text{EE}} = 0.0 \text{ V}$	03	1, 3	-50	+50	
				2	-500	+500	
Input current	I_{IN}	$V_{\text{DD}} = 20 \text{ V},$ $V_{\text{IN}} = 0.0 \text{ V}$ or $V_{\text{DD}} \geq$	01	1, 3	-0.1	+0.1	μA
				2	-1.0	+1.0	
		$V_{\text{DD}} = 15 \text{ V},$ $V_{\text{IN}} = 0.0 \text{ V}$ or V_{DD}	02, 03	1, 3	-0.1	+0.1	
				2	-1.0	+1.0	
Input capacitance	C_{IN}	$V_{\text{IN}} = 0 \text{ V},$ $T_C = +25^{\circ}\text{C},$ See 4.3.1c	01, 02	4		7.5	pF
			Control inputs A, B, C	03	4	7.5	
			Signal (IN/OUT) inputs ax, bx, ay, by, cy, cx			15	
Functional test		See 4.3.1.d	ALL	7			

See footnotes at end of table.

STANDARDIZED
MILITARY DRAWING
DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

SIZE
A

81018

REVISION LEVEL
F

SHEET

5

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$ unless otherwise specified	Device types	Group A subgroups	Limits		Unit
					Min	Max	
On-state resistance	R_{ON}	$V_{DD} = 5\text{ V}$ $V_{EE} = 0\text{ V}$ $V_{SS} = 0\text{ V}$	01, 02	1		1050	Ω
				2		1300	
				3		800	
			03	1		2500	
				2		3500	
				3		2000	
		$V_{DD} = 10\text{ V}$ $V_{EE} = 0\text{ V}$ $V_{SS} = 0\text{ V}$	01	1		400	
				2		550	
				3		310	
			02	1		500	
				2		550	
				3		400	
		$V_{DD} = 15\text{ V}$ $V_{EE} = 0\text{ V}$ $V_{SS} = 0\text{ V}$	03	1		400	
				2		580	
				3		310	
			01	1		240	
				2		320	
				3		200	
			02	1		280	
				2		320	
				3		220	
			03	1		280	
				2		400	
				3		220	

See footnotes at end of table.

STANDARDIZED
MILITARY DRAWING
DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

SIZE
A

81018

REVISION LEVEL
F

SHEET

6

DESC FORM 193A
JUL 91

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C unless otherwise specified	Device types	Group A subgroups	Limits		Unit	
					Min	Max		
Propagation delay time, signal input to output	t _{PHL1} , t _{PLH1}	R _L = 200 kΩ, C _L = 50 pF, t _r = t _f = 20 ns, See figure 4	V _{DD} = 5 V <u>3/</u>	01	9	1.5	60	ns
				10, 11	1.5	78		
			V _{DD} = 10 V <u>3/</u>	01	9	1.5	30	
				10, 11	1.5	39		
			V _{DD} = 15 V <u>3/</u>	01	9	1.5	20	
				10, 11	1.5	26		
Propagation delay time, address to signal output	t _{PHL2} , t _{PLH2}	R _L = 10 kΩ, C _L = 50 pF, t _r = t _f = 20 ns, See figure 4	V _{DD} = 5 V <u>3/</u>	01	9	1.5	720	ns
				10, 11	1.5	936		
			V _{DD} = 10 V <u>3/</u>	01	9	1.5	320	
				10, 11	1.5	416		
			V _{DD} = 15 V <u>3/</u>	01	9	1.5	240	
				10, 11	1.5	312		
Propagation delay time, inhibit to signal out (channel turning ON)	t _{PZH1} , t _{PZL1}	R _L = 10 kΩ, C _L = 50 pF, t _r = t _f = 20 ns, See figure 4	V _{DD} = 5 V	01	9	1.5	720	ns
				10, 11	1.5	936		
			V _{DD} = 10 V <u>1/</u>	01	9	1.5	320	
				10, 11	1.5	416		
			V _{DD} = 15 V <u>1/</u>	01	9	1.5	240	
				10, 11	1.5	312		
Propagation delay time, inhibit to signal out (channel turning OFF)	t _{PHZ1} , t _{PLZ1}	R _L = 1 kΩ, C _L = 50 pF, t _r = t _f = 20 ns, See figure 4	V _{DD} = 5 V	01	9	1.5	450	ns
				10, 11	1.5	585		
			V _{DD} = 10 V <u>1/</u>	01	9	1.5	210	
				10, 11	1.5	273		
			V _{DD} = 15 V <u>1/</u>	01	9	1.5	160	
				10, 11	1.5	208		

See footnotes at end of table.

STANDARDIZED
MILITARY DRAWING
DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

SIZE
A

81018

REVISION LEVEL
F

SHEET
7

DESC FORM 193A
JUL 91

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$ unless otherwise specified	Device types	Group A subgroups	Limits		Unit
					Min	Max	
Propagation delay time, signal input to output	$t_{\text{PHL3}},$ t_{PLH3}	$R_L = 10\text{ k}\Omega,$ $C_L = 50\text{ pF},$ $t_r = t_f = 20\text{ ns},$ See figure 4	$V_{\text{DD}} = 5\text{ V}$	02	9	65	ns
					10, 11	97.5	
			$V_{\text{DD}} = 10\text{ V}$	02	9	30	
					10, 11	39	
			$V_{\text{DD}} = 15\text{ V}$	02	9	20	
					10, 11	26	
Propagation delay time, address to signal output	$t_{\text{PHL4}},$ t_{PLH4}		$V_{\text{DD}} = 5\text{ V}$	02	9	720	ns
					10, 11	936	
			$V_{\text{DD}} = 10\text{ V}$	02	9	320	
					10, 11	416	
			$V_{\text{DD}} = 15\text{ V}$	02	9	240	
					10, 11	312	
Propagation delay time, inhibit to signal out (channel turning ON)	$t_{\text{PZH2}},$ t_{PZL2}	$R_L = 10\text{ k}\Omega,$ $C_L = 50\text{ pF},$ $t_r = t_f = 20\text{ ns},$ See figure 4	$V_{\text{DD}} = 5\text{ V}$	02	9	720	ns
					10, 11	936	
			$V_{\text{DD}} = 10\text{ V}$	02	9	320	
					10, 11	420	
			$V_{\text{DD}} = 15\text{ V}$	02	9	240	
					10, 11	330	
Propagation delay time, inhibit to signal out (channel turning OFF)	$t_{\text{PHZ2}},$ t_{PLZ2}	$R_L = 10\text{ k}\Omega,$ $C_L = 50\text{ pF},$ $t_r = t_f = 20\text{ ns},$ See figure 4	$V_{\text{DD}} = 5\text{ V}$	02	9	550	ns
					10, 11	825	
			$V_{\text{DD}} = 10\text{ V}$	02	9	280	
					10, 11	420	
			$V_{\text{DD}} = 15\text{ V}$	02	9	220	
					10, 11	330	

See footnotes at end of table.

STANDARDIZED
MILITARY DRAWING
DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

SIZE
A

81018

REVISION LEVEL
F

SHEET
8

DESC FORM 193A
JUL 91

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C unless otherwise specified	Device types	Group A subgroups	Limits		Unit	
					Min	Max		
Propagation delay time, signal input to output	t _{PHL5} , t _{PLH5}	R _L = 1 kΩ, C _L = 50 pF, t _r = t _f = 20 ns, See figure 4	V _{DD} = 5 V <u>4/</u>	03	9	1.5	55	ns
				10, 11	1.5	80		
			V _{DD} = 10 V <u>1/</u>	03	9	1.5	35	
				10, 11	1.5	50		
			V _{DD} = 15 V <u>1/</u>	03	9	1.5	25	
				10, 11	1.5	35		
Propagation delay time, address to signal output	t _{PHL6} , t _{PLH6}	R _L = 1 kΩ, C _L = 50 pF, t _r = t _f = 20 ns, See figure 4	V _{DD} = 5 V <u>4/</u>	03	9	1.5	1000	
				10, 11	1.5	1400		
			V _{DD} = 10 V <u>1/</u>	03	9	1.5	360	
				10, 11	1.5	505		
			V _{DD} = 15 V <u>1/</u>	03	9	1.5	240	
				10, 11	1.5	335		
Propagation delay time, inhibit to signal out (channel turning ON)	t _{PZH3} , t _{PZL3}	R _L = 1 kΩ, C _L = 50 pF, t _r = t _f = 20 ns, See figure 4	V _{DD} = 5 V <u>4/</u>	03	9	1.5	1200	ns
				10, 11	1.5	1800		
			V _{DD} = 10 V <u>1/</u>	03	9	1.5	450	
				10, 11	1.5	675		
			V _{DD} = 15 V <u>1/</u>	03	9	1.5	320	
				10, 11	1.5	480		
Propagation delay time, inhibit to signal out (channel turning OFF)	t _{PHZ3} , t _{PLZ3}	R _L = 1 kΩ, C _L = 50 pF, t _r = t _f = 20 ns, See figure 4	V _{DD} = 5 V <u>4/</u>	03	9	1.5	420	
				10, 11	1.5	630		
			V _{DD} = 10 V <u>1/</u>	03	9	1.5	200	
				10, 11	1.5	300		
			V _{DD} = 15 V <u>1/</u>	03	9	1.5	150	
				10, 11	1.5	225		

1/ Guaranteed, if not tested, to the limits specified herein, only for device types 01 and 03.

2/ Subgroup 3 is performed at $V_{\text{DD}} = 18\text{ V}$.3/ Guaranteed by R_{ON} test as specified in table I.

4/ Guaranteed, if not tested, for group A subgroups 10 and 11.

STANDARDIZED
MILITARY DRAWING
DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

SIZE
A

81018

REVISION LEVEL
F

SHEET

9

DESC FORM 193A

JUL 91

Device type	01, 02 and 03
Case outlines	E and F
Terminal number	Terminal symbol
1	IN/OUT by
2	IN/OUT bx
3	IN/OUT cy
4	OUT/IN cx or cy
5	IN/OUT cx
6	INHIBIT
7	V _{EE}
8	V _{SS}
9	C
10	B
11	A
12	IN/OUT ax
13	IN/OUT ay
14	OUT/IN ax or ay
15	OUT/IN bx or by
16	V _{DD}

FIGURE 1. Terminal connections.

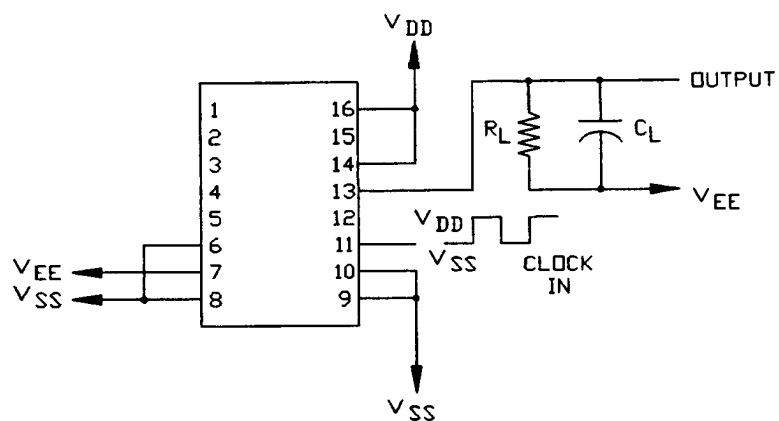
Inhibit	Select			On channels
	A	B	C	
L	L	L	L	ax, bx, cx
L	H	L	L	ay, bx, cx
L	L	H	L	ax, by, cx
L	H	H	L	ay, by, cx
L	L	L	H	ax, bx, cy
L	H	L	H	ay, bx, cy
L	L	H	H	ax, by, cy
L	H	H	H	ay, by, cy
H	X	X	X	NONE

H = High voltage level
L = Low voltage level
X = Irrelevant

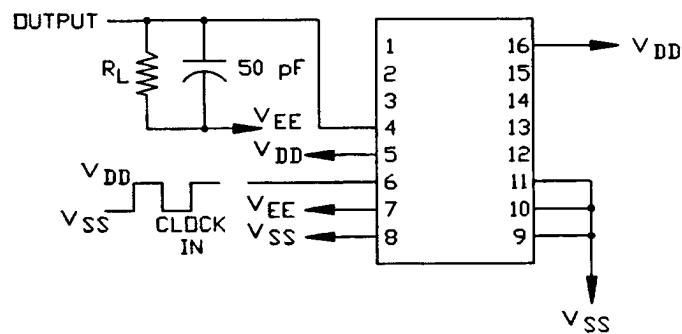
FIGURE 2. Truth table.

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE A		81018
		REVISION LEVEL F	SHEET 10

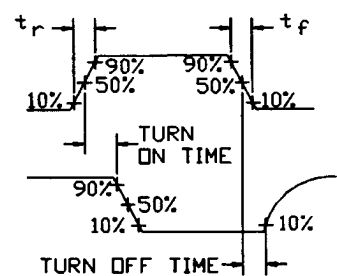
DESC FORM 193A
JUL 91



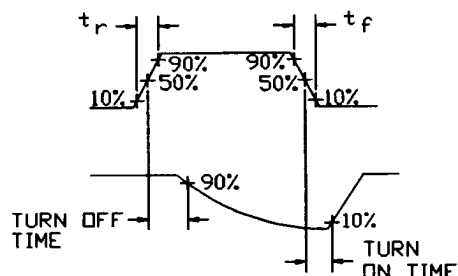
PROPAGATION DELAY, ADDRESS INPUT TO SIGNAL OUTPUT



PROPAGATION DELAY, INHIBIT INPUT TO SIGNAL OUTPUT



WAVEFORMS, CHANNEL BEING TURNED ON.



WAVEFORMS, CHANNEL BEING TURNED OFF.

FIGURE 4. Test circuit and switching waveforms.

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE A		81018
		REVISION LEVEL F	SHEET 12

DESC FORM 193A
JUL 91

3.6 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-BUL-103 (see 6.6 herein). The certificate of compliance submitted to DESC-EC prior to listing as an approved source of supply shall affirm that the manufacturer's product meets the requirements of MIL-STD-883 (see 3.1 herein) and the requirements herein.

3.7 Certificate of conformance. A certificate of conformance as required in MIL-STD-883 (see 3.1 herein) shall be provided with each lot of microcircuits delivered to this drawing.

3.8 Notification of change. Notification of change to DESC-EC shall be required in accordance with MIL-STD-883 (see 3.1 herein).

3.9 Verification and review. DESC, DESC'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.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with section 4 of MIL-M-38510 to the extent specified in MIL-STD-883 (see 3.1 herein).

4.2 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection. 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 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 of MIL-STD-883.

(2) $T_A = +125^{\circ}\text{C}$, minimum.

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 Quality conformance inspection. Quality conformance inspection shall be in accordance with method 5005 of MIL-STD-883 including groups A, B, C, and D inspections. The following additional criteria shall apply.

4.3.1 Group A inspection.

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

b. Subgroups 5, 6, and 8 in table I, method 5005 of MIL-STD-883 shall be omitted.

c. Subgroup 4 (C_{IN} measurement) shall be measured only for the initial test and after process or design changes which may affect input capacitance. Capacitance shall be measured between the designated terminal and ground at a frequency of 1 MHz. Test all applicable pins on five devices with zero failures.

d. Subgroup 7 shall include verification of the truth table as specified on figure 2 herein.

4.3.2 Groups C and D inspections.

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

b. Steady-state life test conditions, 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 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.

(2) $T_A = +125^{\circ}\text{C}$, minimum.

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

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE A		81018
		REVISION LEVEL F	SHEET 13

DESC FORM 193A

JUL 91

TABLE II. Electrical test requirements.

MIL-STD-883 test requirements	Subgroups (in accordance with method 5005, table I)
Interim electrical parameters (method 5004)	---
Final electrical test parameters (method 5004)	1*,2,3,7,9
Group A test requirements (method 5005)	1,2,3,4,7,9 10**,11**
Groups C and D end-point electrical parameters (method 5005)	1,2,3

* PDA applies to subgroup 1.

** Subgroups 10 and 11, if not tested, shall be guaranteed to the specified limits in table I.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510.

6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for original equipment manufacturer application. When a military specification exists and the product covered by this drawing has been qualified for listing on QPL-38510, the device specified herein will be inactivated and will not be used for new design. The QPL-38510 product shall be the preferred item for all applications.

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

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished in accordance with MIL-STD-481 using DD Form 1693, Engineering Change Proposal (Short Form).

6.4 Record of users. Military and industrial users shall inform Defense Electronics Supply Center when a system application requires configuration control and the applicable SMD. DESC 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 microelectronics devices (FSC 5962) should contact DESC-EC, telephone (513) 296-6047.

6.5 Comments. Comments on this drawing should be directed to DESC-EC, Dayton, Ohio 45444, or telephone (513) 296-5377.

6.6 Approved sources of supply. Approved sources of supply are listed in MIL-BUL-103. The vendors listed in MIL-BUL-103 have agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DESC-EC.

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE A		81018
		REVISION LEVEL F	SHEET 14

DESC FORM 193A
JUL 91

40233