INCH-POUND
MIL-M-38510/60B
8 December 2004
SUPERSEDING
MIL-M-38510/60A
5 August 1985

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, ECL, MULTIPLE NOR GATES, MONOLITHIC SILICON

Inactive for new design after 8 July 1997.

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product herein shall consist of this specification sheet and MIL-PRF 38535.

- 1. SCOPE
- 1.1 <u>Scope.</u> This specification covers the detail requirements for monolithic silicon, ECL, logic gating microcircuits. Two product assurance classes and a choice of case outlines and lead finishes are provided for each type and are reflected in the complete part number. For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.3).
 - 1.2 Part or Identifying Number (PIN). The PIN is in accordance with MIL-PRF-38535, and as specified herein.
 - 1.2.1 Device types. The device types are as follows:

Device type	<u>Circuit</u>
01	Quad OR/NOR gate with strobe
02	Triple NOR gate, single OR/NOR gate
03	Triple 2-3-2 OR/NOR gate
04	Triple 3-4-3 NOR gate
05	Triple exclusive OR/NOR gate
06	Dual 4-5 OR/NOR gate

- 1.2.2 <u>Device class</u>. The device class is the product assurance level as defined in MIL-PRF-38535.
- 1.2.3 <u>Case outlines.</u> The case outlines are as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	<u>Terminals</u>	Package style
E	GDIP1-T16 or CDIP2-T16	16	Dual-in-line
E	GDFP2-F16 or CDFP3-F16	16	Flat
2	CQCC1-N20	20	Square chip carrier

Comments, suggestions, or questions on this document should be addressed to: Commander, Defense Supply Center, Columbus, ATTN: DSCC-VAS, P.O. Box 3990, Columbus, OH 43218-3990, or emailed to bipolar@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.daps.dla.mil.

AMSC N/A FSC 5962

1.3 Absolute maximum ratings.

Supply voltage range	0 V dc to -7.0 V dc
Input voltage range	0 V dc to -5.2 V dc
Storage temperature range	-65° to +150°C
Maximum power dissipation, (P _D) 1/	55 mW
Lead temperature (soldering, 10 seconds)	+260°C
Junction temperature (T _J) <u>2</u> /	165°C
Maximum output current	-50 mA
Thermal resistance, junction to case (θ_{JC}) :	
Cases E, F, and 2	(See MIL-STD-1835)

1.4 Recommended operating conditions.

Supply voltage (V _{EE})	1.105 V at T _C = 25°C 1.000 V at T _C = 125°C
Maximum low level input voltage (at 500 linear ft/min)	1.475 V at T _C = 25°C 1.400 V at T _C = 125°C
Normalized fanout (each output)	

2. APPLICABLE DOCUMENTS

2.1 <u>General</u>. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 <u>Specifications and Standards</u>. The following specifications and standards form a part of this specification 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-38535 - Integrated Circuits (Microcircuits) Manufacturing, General Specification for.

^{1/} Must withstand the added P_D due to short-circuit test (e.g., los).

^{2/} Maximum junction temperature should not be exceeded except in accordance with allowable short duration burn-in screening condition in accordance with MIL-PRF-38535.

^{3/} Device will fanout in both high and low levels to the specified number of data inputs on the same device type as that being tested.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard for Microelectronics.

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

(Copies of these documents are available online at http://assist.daps.dla.mil/quicksearch/ or http://assist.daps.dla.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

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

3. REQUIREMENTS

- 3.1 <u>Qualification</u>. Microcircuits furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturers list before contract award (see 4.3 and 6.4).
- 3.2 <u>Item requirements</u>. The individual item requirements 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.
- 3.3 <u>Design, construction, and physical dimensions.</u> The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535 and herein.
- 3.3.1 <u>Terminal connections and logic diagrams.</u> The terminal connections and logic diagrams shall be as specified on figure 1.
 - 3.3.2 Truth tables and logic equations. The truth tables and logic equations shall be as specified on figure 2.
- 3.3.3 <u>Schematic circuits.</u> The schematic circuits shall be maintained by the manufacturer and made available to the qualifying activity and the preparing activity upon request.
 - 3.3.4 <u>Case outlines</u>. Case outlines shall be in accordance with 1.2.3.
 - 3.4 Lead material and finish. Lead material and finish shall be in accordance with MIL-PRF-38535 (see 6.6).
- 3.5 <u>Electrical performance characteristics</u>. The electrical performance characteristics are as specified and table I and apply over the full recommended case operating range unless otherwise specified.

TABLE I. <u>Electrical performance characteristics.</u>
(Limits are valid provided circuit is in a test socket and transverse air flow of 500 linear ft/min is maintained.)

	Test	Symbol	Conditions			Device	vice Limits		Unit	
			-55°C	$\leq T_C \leq +$	125°C		types	Min	Max	
				T _C	V_{IH1}	V_{IL1}				
	High level output	V _{OH}	V _{EE} = -5.2 V,	25°C	-0.780 V	-1.850 V		-0.930	-0.780	
	voltage		$V_{CC} = 0 V$	125°C	-0.630 V	-1.820 V	All	-0.825	-0.630	V
			Load = 100Ω to –2V	-55°C	-0.880 V	-1.920 V		-1.080	-0.880	
				T _C	V _{IH1}	V _{IL1}				
	Low level output	V_{OL}	V _{EE} = -5.2 V,	25°C	-0.780 V	-1.850 V		-1.850	-1.620	
	voltage		V _{CC} = 0 V,	125°C	-0.630 V	-1.820 V	All	-1.820	-1.545	V
			Load = 100Ω to $-2V$	-55°C	-0.880 V	-1.920 V		-1.920	-1.655	
				T _C	V _{ITH}	V _{ITL}				
	High level threshold	V _{OTH}	V _{EE} = -5.2 V,	25°C	-1.105 V	-1.475 V		-0.950		
	output voltage		$V_{CC} = 0 V$,	125°C	-1.000 V	-1.400 V	All	-0.845		V
			Load = 100Ω to $-2V$	-55°C	-1.255 V	-1.510 V		-1.100		
				T _C	V _{ITH}	V _{ITL}				
	Low level threshold	V _{OTL}	V _{EE} = -5.2 V,	25°C	-1.105 V	-1.475 V			-1.600	
	output voltage		$V_{CC} = 0 V$,	125°C	-1.000 V	-1.400 V	All		-1.525	V
			Load = 100Ω to –2V	-55°C	-1.255 V	-1.510 V			-1.635	
				•			01, 02	-29		
	Power supply drain	I _{EE}	V _{EE} = -5.2 V,				03, 04	-24		mA
	current		V _{CC} = 0 V				05	-31		
							06	-16		
		I _{IH1}	V _{EE} = -5.2 V, V _{CC} = 0 \	/ ,			All		450 <u>1</u> /	μА
	High level input		V _{IH1} = -0.780 V at 25°0	C, -0.630	V at 125°C	,				
	current	I _{IH2}	-0.880 V at -55°	С			01		935 <u>2</u> /	μА
							05		375	
	Low level input	I _{IL}	$V_{EE} = -5.2 \text{ V}, V_{CC} = 0 \text{ V}$	/,			All	0.3		μА
	current		V _{IL1} = -1.850 V at 25°0	C, -1.820	V at 125°C,					
			-1.920 V at -55°	С						
	See footnotes at er	nd of tabl	е.							
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TABLE I. <u>Electrical performance characteristics</u> – Continued.

Test	Symbol	Conditions	Device	Lin	nits	Unit
		-55°C ≤ T _C ≤ +125°C	types	Min	Max	
		$V_{EEL} = -3.2 \text{ V}, V_{CC} = +2.0 \text{ V},$	01, 02,			
Transition time,	t _{TLH}	RL = 50Ω, CL ≤ 5 pF (output under test)	03, 04,	1.0	4.0	ns
low to high level		2 - 5002, CL \(\leq \) pr (output under test)	06			
		Load = 100Ω to GND (outputs not				
		under test)	05	1.0	4.3	ns
		Device type 05 only : V_{IH2} = +1.11 V				
		$V_{IL2} = +0.31 \text{ V}$	01, 02,			
Transition time,	t _{THL}		03, 04,	1.0	4.0	ns
high to low level			06			
			05	1.0	4.3	ns
			01, 02,	4.0	0.7	
Propagation delay time,			03, 04,	1.0	3.7	ns
low to high level	t _{PLH}		06			
			05	1.0	4.5	no
			05	1.0	4.5	ns
			01, 02,			
Propagation delay time,			01, 02,	1.0	3.7	ns
high to low level	t _{PHL}		06	1.0	5.7	115
Ingrito low level	PHL		00			
			05	1.0	4.5	ns
				1.0	7.5	113

Notes apply to device types 01-05 only.

 $[\]underline{1}/$ Not applicable to "B" inputs of device types 01 and 05. $\underline{2}/$ Applicable to "B" inputs only.

3.6 <u>Electrical test requirements</u>. The electrical test requirements for each device class shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table III.

TABLE II. Electrical test requirements.

	Subgroups	(see table III)
MIL-PRF-38535	Class S	Class B
test requirements	devices	devices
Interim electrical parameters	1	1
Final electrical test parameters	1*, 2, 3, 9	1*, 2, 3, 9
Group A test requirements	1, 2, 3, 9, 10, 11	1, 2, 3, 9, 10, 11
Group B electrical test parameters when using the method 5005 QCI option	1, 2, 3	N/A
Group C end-point electrical parameters	1, 2, 3	1, 2, 3
Group D end-point electrical parameters	1, 2, 3	1, 2, 3

^{*}PDA applies to subgroup 1.

- 3.7 Marking. Marking shall be in accordance with MIL-PRF-38535.
- 3.8 <u>Microcircuit group assignment.</u> The devices covered by this specification shall be in microcircuit group number 8 see MIL-PRF-38535, appendix A).

4. VERIFICATION

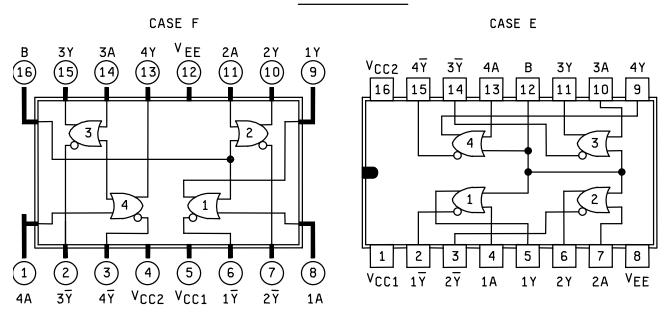
- 4.1 <u>Sampling and inspection</u>. Sampling and inspection procedures shall be in accordance with MIL-PRF-38535 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not effect the form, fit, or function as described herein.
- 4.2 <u>Screening.</u> Screening shall be in accordance with MIL-PRF-38535 and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:
 - 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 control by 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, except interim electrical parameters test prior to burn-in is optional at the discretion of the manufacturer.

- c. Additional screening for space level product shall be as specified in MIL-PRF-38535.
- 4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-38535.
- 4.4 <u>Technology Conformance inspection (TCI)</u>. Technology conformance inspection shall be in accordance with MIL-PRF-38535 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).
- 4.4.1 <u>Group A inspection.</u> Group A inspection shall be in accordance with table III of MIL-PRF-38535 and as follows:
 - a. Tests shall be as specified in table II herein.
 - b. Subgroups 4, 5, 6, 7, and 8 shall be omitted.
 - 4.4.2 Group B inspection. Group B inspection shall be in accordance with table II MIL-PRF-38535.
- 4.4.3 Group C inspection. Group C inspection shall be in accordance with table IV of MIL-PRF-38535 and as follows:
 - a. End-point electrical parameters shall be as specified in table II herein.
 - b. 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 burn-in test circuit shall be maintained under document control by 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 1005 of MIL-STD-883.
- 4.4.4 <u>Group D inspection.</u> Group D inspection shall be in accordance with table V of MIL-PRF-38535. Endpoint electrical parameters shall be as specified in table II herein.
 - 4.5 Methods of inspection. Methods of inspection shall be as specified and as follows:
- 4.5.1 <u>Voltage and current.</u> All voltages given are referenced to the microcircuit ground terminal. Currents given are conventional and positive when flowing into the referenced terminal.

TABLE IIIA. Test conditions for all devices, group A inspection

Symbol	V _{IH1}	V _{IL1}	V _{IH2}	V _{IL2}	V _{ITL}	V _{ITH}	E ₁	E ₂	E ₃	LD ₁	LD ₂	IN /
	(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)	(V)			OUT
T _C = 25°C	-0.780	-1.850	+1.11	+0.31	-1.475	-1.105	-5.2	-3.2	+2.0	100Ω to	100Ω to	See
										-2 V	GND	Fig 3
T _C = 125°C	-0.630	-1.820	+1.24	+0.36	-1.400	-1.000	-5.2	-3.2	+2.0	100Ω to	100Ω to	See
										-2 V	GND	Fig 3
$T_C = -55^{\circ}C$	-0.880	-1.920	+1.01	+0.28	-1.510	-1.255	-5.2	-3.2	+2.0	100Ω to	100Ω to	See
										-2 V	GND	Fig 3

DEVICE TYPE 01



DEVICE TYPE 02

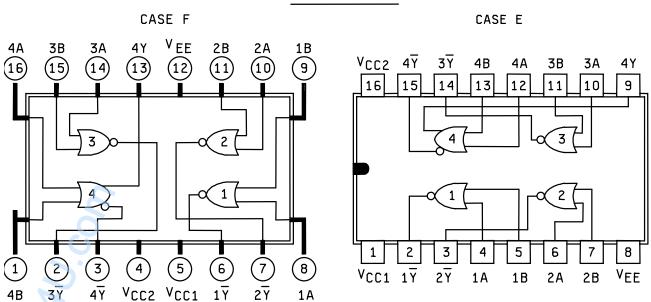


FIGURE 1. Terminal connections and logic diagrams.

DEVICE TYPE 03 CASE F CASE E v_{EE} 2<u>Y</u> (10) 2A 2 Y 20 2B 1B 3A V_{CC2} 3Y $3\overline{Y}$ (11) 3B 20 (9) 3A 2B 2Α (16)(15)(14)(13)(12)16 15 14 13 11 10 12 9 2 3 6 2 6 ٧EE $1\overline{Y}$ $2\overline{Y}$ V_{CC1 1Y} 2 Y 1A 1B V_{CC2} V_{CC1} 3 Y

1A

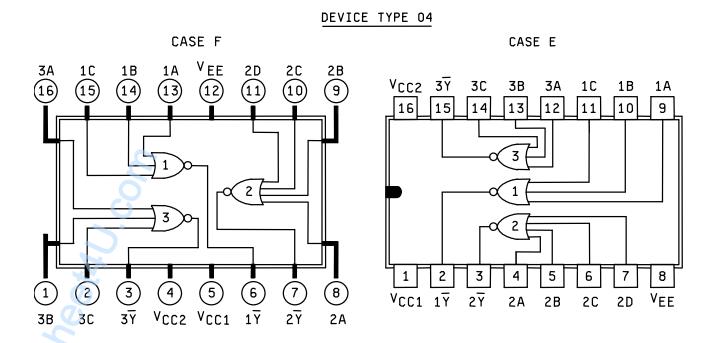
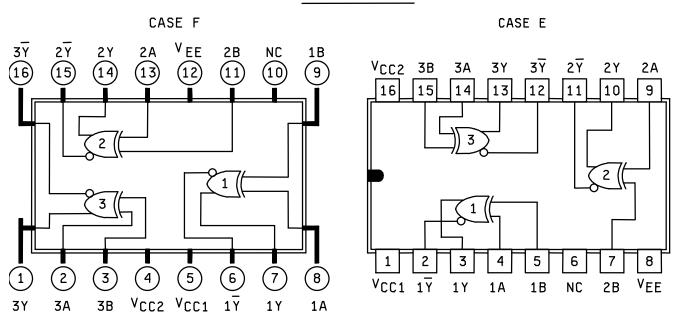


FIGURE 1. Terminal connections and logic diagrams - Continued.

DEVICE TYPE 05



DEVICE TYPE 06

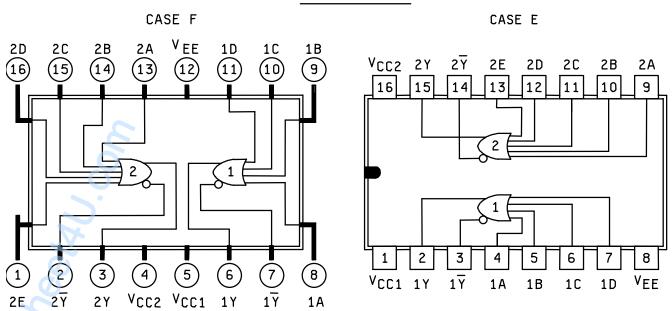
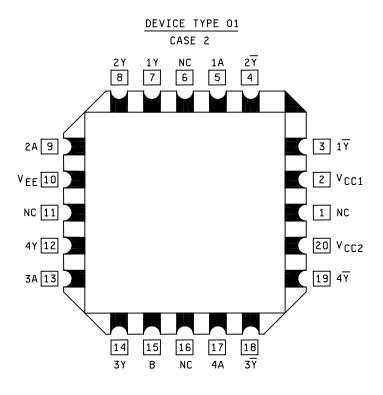


FIGURE 1. Terminal connections and logic diagrams - Continued.



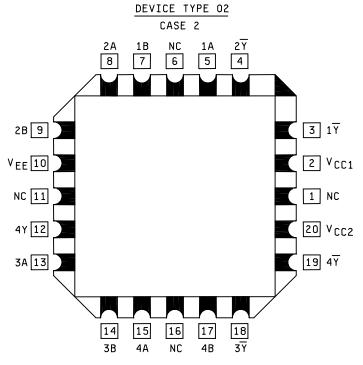
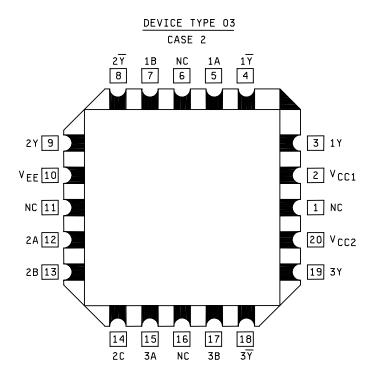


FIGURE 1. Terminal connections and logic diagrams - Continued.



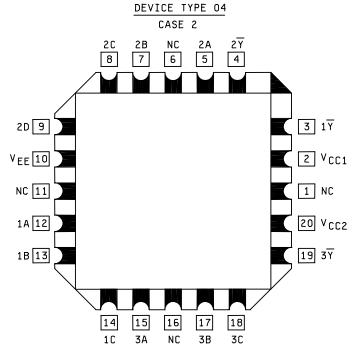
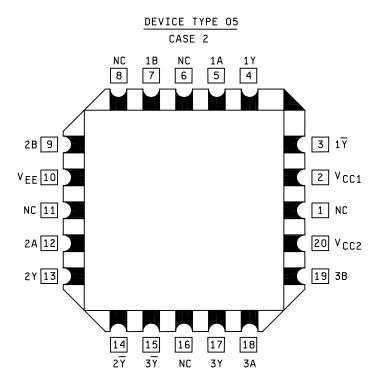


FIGURE 1. <u>Terminal connections and logic diagrams</u> - Continued.



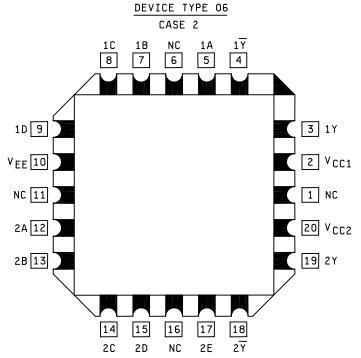


FIGURE 1. Terminal connections and logic diagrams - Continued.

Device type 01
Truth Table (EACH GATE)

Hutti	Table (I		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
INP	JTS	OUTPUTS		
Α	В	Υ	Ÿ	
L	L	L	Н	
Н	Χ	Н	L	
Χ	Н	Н	L	

High level Low level = Irrelevent Positive logic: Y = A + B $\overline{Y} = \overline{A + B}$

> Device type 03 Truth Table (EACH GATE)

l!	NPUT	S	OUTI	PUTS
Α	В	C↑	Υ	\overline{Y}
L	L	L	L	Н
Н	X	X	Н	L
X	Н	X	Н	L
Χ	Χ	Н	Н	L

H = High level L = Low level X = Irrelevent

† C input and last line are applicable for Gate 2 only

> Positive logic: Y = A + B + C↑ $\overline{Y} = \overline{A + B + C} \uparrow$

Device type 05 Truth Table (FACH GATE)

IIuu	i i abie (i	LACIT GA	\ 	
INPL	JTS	OUTPUTS		
A	В	Υ	Ÿ	
	L	L	Н	
H	L	Н	L	
	Н	Н	L	
Н	Н	L	Н	

= High level Low level Positive logic: $Y = A\overline{B} + \overline{A}B$ $\overline{Y} = AB + \overline{AB}$

Device type 02 Truth Table (EACH GATE)

	114111 14515 (2,1511 5,112)							
INPU	JTS	OUTF	PUTS					
Α	В	Y↑	Ÿ					
L	L	L	Н					
Н	X	Н	L					
X	Н	Н	L					

H = High level L = Low level X = Irrelevent ↑ Y output is applicable for Gate 4 only.

> Positive logic: $Y = A + B\uparrow$ $\overline{Y} = \overline{A + B}$

Device type 04 Truth Table (EACH GATE)

	INP	UTS		OUTPUTS
Α	В	С	D↑	Ÿ
L	L	L	L	Н
Н	Χ	Χ	Χ	L
Χ	Н	Χ	Χ	L
X	Χ	Н	Χ	L
Χ	Χ	Χ	Н	L

H = High level L = Low level X = Irrelevent

↑ D input and last line are applicable for Gate 2 only

Positive logic: $Y = \overline{A + B + C + D}$

Device type 06 Truth Table (EACH GATE)

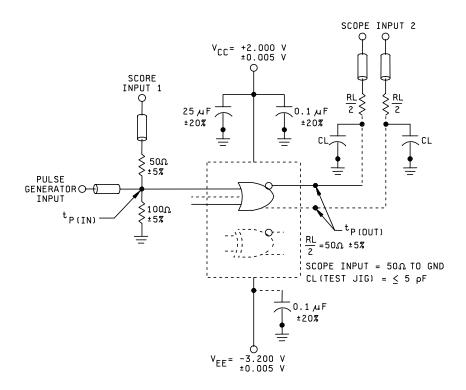
		INPUTS			OUTI	PUTS
Α	В	С	D	E↑	Υ	Y
L	L	L	L	L	L	Н
Н	Χ	Χ	X	Χ	Н	L
Х	Н	Χ	Χ	Χ	Н	L
Х	Χ	Н	Χ	Χ	Н	L
X	Χ	Χ	Н	Χ	Н	L
Х	Χ	X	Χ	Н	Н	L

H = High level L = Low level X = Irrelevent

↑ E input and last line are applicable for Gate 2 only. Positive logic: $Y = A + B + C + D + E \uparrow$

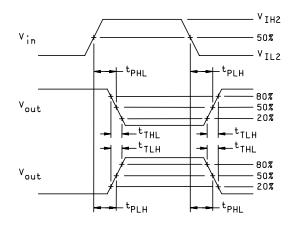
 $\overline{Y} = \overline{A + B + C + D + E} \uparrow$

FIGURE 2. Truth tables.



T_C	V_{IH2}	V_{IL2}
	±10 mV	±10 mV
25°C	+1.11 V	+0.31 V
125°C	+1.24 V	+0.36 V
-55°C	+1.01 V	+0.28 V

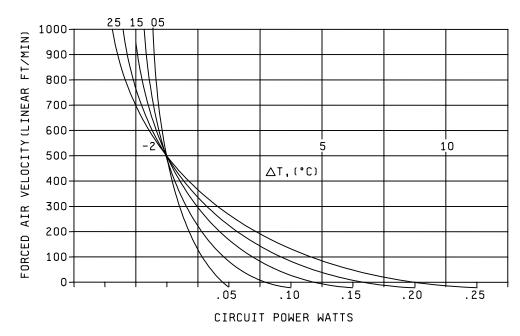
$$\begin{split} t_p &= 40 \text{ ns} \pm 1 \text{ ns} \\ Z_{OUT} &\approx 50 \Omega \\ t_{THL} &= 2.0 \text{ ns} \ (20\%\text{-}80\%) \pm 0.2 \text{ ns} \\ t_{TLH} &= 2.0 \text{ ns} \ (20\%\text{-}80\%) \pm 0.2 \text{ ns} \\ PRR &= 1.00 \text{ MHz} \pm 0.05 \text{ MHz} \end{split}$$



NOTES:

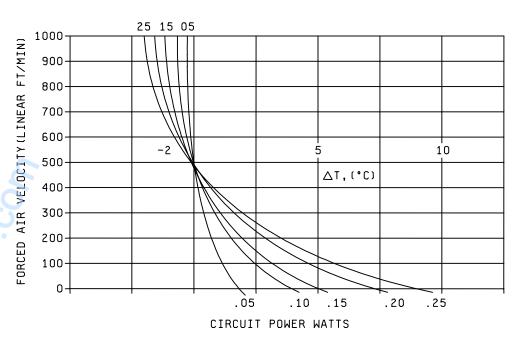
- 1. Perform test in accordance with test table; each output is tested separately.
- 2. All input and output cables are equal lengths of 50 ohm coaxial cables. Wire length should be \leq .250 (6.35 mm) from $t_{p \ (IN)}$ to input pin and $t_{p \ (OUT)}$ to output pin.
- 3. Outputs not under test connected to a 100 ohm resistor to ground.

FIGURE 3. Switching time test circuit and waveforms.



NOTE: Change in junction temperature versus forced air velocity, ref. to 500 linear ft./min. circuit power as variable parameter 100Ω load.

FIGURE 4. Junction temperature versus air velocity case E.

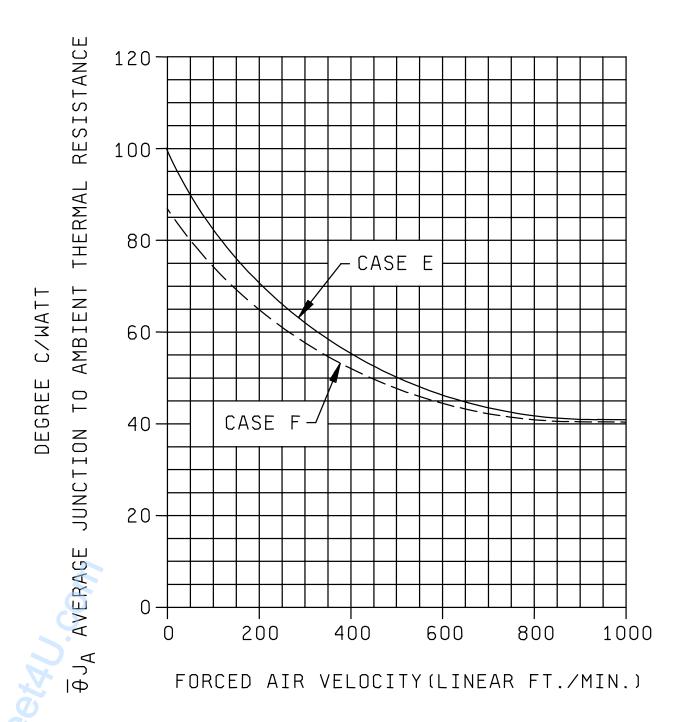


NOTE: Change in junction temperature versus forced air velocity, ref. to 500 linear ft./min. circuit power as variable parameter 100Ω load.

FIGURE 5. Junction temperature versus air velocity case F.

	-55 (mV	i°C /°C)		5°C ′/°C)		5°C ′/°C)
Parameter	+∆T _J	-∆T _J	+∆T _J	-∆T _J	+∆T _J	-∆T _J
V _{OH} max, V _{IH}	1.38	1.38	1.40	1.38	1.40	1.40
V _{OH} min, V _{OTH}	1.88	1.88	1.05	1.88	1.05	1.05
V _{OL} max, V _{OTL}	0.44	0.44	0.75	0.44	0.75	0.75
V _{OL} min, V _{IL}	0.88	0.88	0.30	0.88	0.30	0.30
V _{ITH}	1.88	1.88	1.05	1.88	1.05	1.05
V _{ITL}	0.44	0.44	0.75	0.44	0.75	0.75

FIGURE 6. Adjustment coefficients for forcing function and test limit compensation.



Note: $(\theta J_A - vs - Forced air velocity)$ for case (E) and (F). $T_J = T_C + \theta J_A \times P_D$ (max).

FIGURE 7. Air velocity versus thermal resistance.

hun	l/																							
	' ,/)									TARLE	III Groi	ın A ins	nection	for devi	ice tyne	01								
								For t	erminal	condition	ons see	table III	A. Terr	ninals no	ot design	nated are	open.							
		146	MIL-STD-	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	Subgroup	Symbol	883	Case F	5	6 3	7	8 5	9 7	10 8	11 9	12 10	13 12	14 13	15 14	16 15	17	2 18	3 19	4 20	Measured	Lim	nits	Unit
	oubg.oup	Cy	method	2			·														terminal]
		.,.		Test no.	V _{CC1}	1 <u>Y</u>	2 Y	1A	1Y	2Y	2A	V _{EE}	4Y	3A	3Y	В	4A	3 Y	4 Y	V _{CC2}		Min	Max	 _
	1 Tc = 25°C	V _{OH}	3006	1 2	GND	LD ₁	LD ₁		LD ₁	LD₁		E ₁	LD ₁		LD ₁	V _{IH1}		LD ₁	LD ₁	GND "	1Y 2Y	-0.93	-0.78	V
			"	3 4		"	• "						"			"			"		3Y 4Y			
				5	"				D				"			V_{IL1}			"	"	1 Y			
			"	6	"		"		/-				"			"			"	"	2 Y	"	"	"
			"	7	"	"	"		"	"		"	"		"	"		"	"	"	3 _Y	"	"	"
				8			"						"			"					4 Y		"	
				9				V _{IL1}					"								1 <u>Y</u>			
				10 11							V _{IL1}			V_{IL1}							2 Y			
			"	12										V IL1			V _{IL1}		"		3 Y 4 Y			
			"	13				V _{IH1}					"				IL1		"		4 Y 1Y		"	
				14			"				V_{IH1}		"								2Y			
				15 16										V_{IH1}			V _{IH1}				3Y 4Y			
	2		Same tests	and term	inal condi	tions as fo	r subgrou	1, excep	t Tc = 125	°C and lim	its as show	vn.										-0.825	-0.63	V
	3	V _{OL}	Same tests 3007	and term 17	GND	tions as to LD ₁	LD ₁	1, excep	LD ₁	LD ₁	ts as snow	/n. E₁	LD ₁		LD ₁	V _{IH1}		LD ₁	LD ₁	GND	1 -	-1.08 -1.85	-0.88 -1.62	V
			"	18						"			"			"		"	"	"	2 Y	"	"	"
			"	19	"		"						"			"			"		3 Y		"	"
			"	20	"		"		"				"		"	"			"		4 Y		"	
				21 22	"								"			V _{IL1}				"	1Y 2Y			
19				23																	3Y			
				24 25				V _{IL1}								"					4Y 1Y			
			"	26 27	"						V _{IL1}		"	V					"		2Y 3Y			
			"	28	"		"						"	V_{IL1}			V _{IL1}	"			4Y	"		
				29				V _{IH1}			.,		"								1 <u>Y</u>	l ".		"
				30 31							V _{IH1}			V_{IH1}							2 Y			
				32									"	V IH1			V _{IH1}			"	3 Y 4 Y			
	2		Same tests		nal condi	tions as fo	r subgroup	1, except	Tc = 125°	C and limi	its as shov	vn.									4 Y	-1.82	-1.545	V
	3		Same tests	and termi	inal condi	tions as fo	r subgroup		Tc = -55°	C and limit		n.				1 1	1			OND	_	-1.92	-1.655	V
		V _{OTH}		33 34	GND "	LD ₁	LD ₁		LD ₁	LD₁ "		E ₁	LD ₁		LD ₁	V _{ITL}		LD ₁	LD ₁	GND "	1 Y	-0.95 "		
				35																	2 Y 3 Y			
				36																	3 Y - 4 Y			
				37									"			V _{ITH}					1Y			
				38 39									"			"			"		2Y 3Y			
				40			"	.,	" "							"		" "		"	4Y	"		
				41 42				V _{ITL}			V.										1 Y			
				43							V _{ITL}			V_{ITL}							2 Y			
				44										·IIL			V _{ITL}				3 Y 4 Y			
	2		Same tests	and termi	nal condi	tions as fo	r subgroup	1, except	Tc = 125°	C and limi	its as shov	vn.			<u> </u>	l		l	l	I	→ Y	845		V
	3		Same tests																			-1.10		V

hun																								
· · · · ·																								
	1															ontinued								
				Case E	1	2	3	For t	erminal 5	condition 6	ons see	table III	A. Terr	ninals no	ot design	nated are	open.	14	15	16		1		
			MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4				
	Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lim	its	Unit
				Test no.	V _{CC1}	1 Y	2 Y	1A	1Y	2Y	2A	V _{EE}	4Y	3A	3Y	В	4A	3 Y	4 Y	V _{CC2}		Min	Max	
	1 Tc = 25°C	V _{OTH}		45 46	GND	LD ₁	LD ₁	V _{ITH}	LD ₁	LD ₁	V	E ₁	LD ₁		LD ₁			LD ₁	LD ₁	GND "	1Y 2Y	-0.95		
	10 - 25 C			47			*:C				V _{ITH}			V_{ITH}			.,	:			3Y			:
	2		Same tests	48 and term	inal condi	tions as fo	r subgroup	1, except	Tc = 125	°C and lim	its as show	wn.					V _{ITH}				4Y	845		V
	3	V _{OTL}	Same tests	and term	inal condi GND	tions as fo	r subgroup	1, except	Tc = -55° LD ₁	C and limi	its as show		LD ₁		LD ₁	V _{ITL}		LD ₁	LD ₁	GND	1Y	-1.10	-1.60	V
	Tc = 25°C	VOIL		50	GIND "	" "	LD1 "		LD1 "	LD1 "		E ₁	LD1 "		LD ₁	VIIIL		LD1 "	LD ₁	"	2Y		-1.00	"
				51 52 53																	3Y 4Y		ï.	
						"										V _{ITH}			"		1 <u>Y</u>			
				54 55																	2 Y			"
				56																	3 Y 4 Y			
				57				V _{ITL}													1Y			
				58 59		"				"	V _{ITL}			V_{ITL}							2Y 3Y		:	:
				60 61				V_{ITH}									V_{ITL}			:	4Y			"
				62				VIIH		"	V _{ITH}										1 Y 2 Y			
				63		"	"			"		"		V_{ITH}						"	3 Y			•
20				64	"	"	"		"	"		"	"		"		V_{ITH}		"	"	4 Y		"	"
	3		Same tests Same tests																				-1.525 -1.635	V
	1 Tc = 25°C	I _{EE}	3005	65	GND	10110 40 10	, casg.cap	т, охоорс			10 40 01101	E ₁								GND	V _{EE}		-26	mA
	2		Same tests												1			l					-29	mA
	3	I _{IH1}	Same tests 3010	and term	inal condi GND	tions as fo	r subgroup	1, except	Tc = -55°	C and limi	its as show	vn. E ₁							1	GND	1A		-29 265	mA μA
	Tc = 25°C	'IH1	3010	67	"			V IH1			V _{IH1}	-1 "								"	2A		" "	μΑ "
				68 69								"		V _{IH1}			V _{IH1}				3A 4A			"
	2		Same tests Same tests																				450 450	μA μA
	1	I _{IH2}	3010	70	GND	lions as io	Subgroup	i, except	10 = -33	C and min	115 45 5110	E ₁				V_{IH1}					В		550	μА
	Tc = 25°C 2		Same tests	and term	inal condi	tions as fo	r subgroup	1, except	Tc = 125	°C and lim	its as show	wn.			1					1			935	μА
	3		Same tests	and term	inal condi			1, except				n.	1			i	ı		1	CND	4.0	0.5	935	μA
	1 Tc = 25°C	I _{IIL}	3009	71 72	GND "			V _{IL1}			V _{IL1}	E ₁								GND "	1A 2A	0.5		μ Α "
				73 74								"		V _{IL1}			V _{IL1}			"	3A 4A			
	2		" Como tooto	75	"	tions so fo	r oubarour	1 000001	To = 125	°C and lim	ita aa aha	"				V _{IL1}	12.1			"	В	0.3		" μA
	3		Same tests Same tests																			0.5		μA
	9 Tc = 25°C	t _{TLH}	3004	76 77	E ₃	LD ₂ OUT	LD ₂	IN IN	OUT LD ₂	LD ₂		E ₂	LD ₂		LD ₂			LD ₂	LD ₂	E ₃	1Y	1.1	3.3	ns "
	200			78		LD ₂	"			OUT	IN	"								"	1 Y 2Y	"		
				79		"	OUT			LD ₂	IN			ĮNI.						"	2 Y	"		
				80 81		"	LD ₂		"	"		"		IN IN	OUT LD ₂			OUT	"	"	3Y 3 _Y	"		
				82 83						"		"	OUT LD ₂		"		IN IN	LD ₂	" OUT		4Y	"		
	10		Same tests		inal condi	tions as fo	r subgrout	o 9, except	Tc = 125	C and lim	nits as sho	wn.	LD ₂]		1111	I	501	<u> </u>	4 Y	1.0	4.0	ns
	11		Same tests																			1.0	4.0	ns

hh	V ~																							
									TABLE	E III. Gr	oup A ir	spectio	n for de	vice typ	e 01 - C	ontinued	l.							
								For t	terminal	conditio	ons see	table III	A. Tern	ninals no	t design	ated are	open.							
ſ		160		Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
l			MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4				
	Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lim		Unit
				Test no.	V _{CC1}	1 Y	2 Y	1A	1Y	2Y	2A	V _{EE}	4Y	3A	3Y	В	4A	3 Y	4 Y	V_{CC2}		Min	Max	
	9 Tc = 25°C	t _{THL}	3004	84 85	E ₃	LD ₂ OUT	LD ₂	IN IN	OUT LD ₂	LD ₂		E ₂	LD ₂		LD ₂			LD ₂	LD ₂	E ₃	1Y - 1 Y	1.1	3.3	ns "
			"	86		LD_2	٠,٠		"	OUT	IN								"	"	2Y		"	"
			"	87		"	OUT		"	LD ₂	IN								"	"	2 _Y	"	"	"
				88			LD_2		/:			:		IN	OUT						3Y			:
				89	"		"		"	"				IN	LD ₂			OUT	"	"	3 Y			
				90 91		"							OUT LD ₂				IN IN	LD ₂	 OUT		4Y 4 Y			
ŀ	10		Same tests	and termi	nal condi	tions as fo	r subgroup	9, excep	t Tc = 125	°C and lim	its as show	vn.										1.0	4.0	ns
ſ	11		Same tests								ts as show											1.0	4.0	ns
	9 Tc = 25°C	t _{PLH}	3003	92 93	E ₃	LD₂ OUT	LD ₂	IN IN	OUT LD ₂	LD ₂		E ₂	LD ₂		LD ₂			LD ₂	LD ₂	E ₃	1Y 1 Y	1.0	2.9	ns "
				94		LD ₂				OUT	IN	:									2Y			
ļ				95	"		OUT		. "	LD ₂	IN		"					-	"	"	2 Y			
				96 97			LD ₂							IN IN	OUT LD ₂			" OUT			3Y			"
													OUT	IIN	LD ₂		INI				3 Y			
				98 99									LD ₂				IN IN	LD ₂	OUT		4 <u>Y</u> 4 <u>Y</u>			
ſ	10		Same tests																			1.0	3.7	ns
	11 9	1	Same tests			tions as fo LD ₂	r subgroup LD ₂	9, excep	t Tc = -55° OUT	C and limi	ts as show		LD ₂		LD ₂		ı	LD ₂	LD ₂	E.	1Y	1.0	3.7 2.9	ns
	Tc = 25°C	t _{PHL}	3003	100 101	E ₃	OUT	"	IN	LD ₂	"		E ₂	LD ₂		"			LU ₂	LD ₂	E ₃	1 -	".0	"	ns "
				102		LD ₂	" OUT			OUT	IN										2Y _			
2				103					l	LD ₂	IN		I								2 Y			
_				104 105			LD ₂					ä		IN IN	OUT LD ₂			OUT			3Y -			"
				106									OUT		"		IN	LD ₂			3 Y 4Y			
			"	107	"	"	"		"	"		"	LD ₂		"		IN	"	OUT	"	4 T 4 Y	"	"	"
ſ	10		Same tests																			1.0	3.7	ns
ļ	11]	Same tests	and termi	nal condi	tions as fo	r subgroup	9, excep	t Ic = -55°	C and limi	ts as show	'n.										1.0	3.7	ns

I/ (DEE III.	Croup 11 inopeditor for device type 02.
For terminal conditions	s see table IIIA. Terminals not designated are open.

Tc = 25°C	16 4	Limits Min Max 0.930 -0.780 " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " "	Unit V " " " " " V V V " "
Subgroup Symbol MIL-STD- Case F 5 6 7 8 9 10 11 12 13 14 15 16 1 2 3 3	Measured terminal	Min Max 0.930 -0.780 " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " "	V
Subgroup Symbol MIL-STD- Case F 5 6 7 8 9 10 11 12 13 14 15 16 1 2 3 3	Measured terminal	Min Max 0.930 -0.780 " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " "	V
Subgroup Symbol 883	Measured terminal V _{CC2}	Min Max 0.930 -0.780 " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " " "	V
Test no. Voct 1	V _{CC2} GND 1	0.930 -0.780 " " " " " " " " " " " " " " " " " " "	" " " " " " " " V V
1	" 2 Y 3 Y 4 Y 4 Y 4 Y 4 Y 4 Y 4 Y 4 Y 4 Y 4	-0.825 -0.630 -1.080 -0.880 -1.850 -1.620	" " " " " " " " V V
10 = 25°C	" 3 \(\frac{1}{2} \) \(\frac	-0.825 -0.630 -1.080 -0.880 -1.620 -1.620	" V V
2 Same tests and terminal conditions as for subgroup 1, except Tc = 125°C and limits as shown. Same tests and terminal conditions as for subgroup 1, except Tc = -55°C and limits as shown. Same tests and terminal conditions as for subgroup 1, except Tc = -55°C and limits as shown. Tc = 25°C Vol. 3007 11 GND LD ₁ LD ₁ V _{IH1} " " " V _{IH1} " " " V _{IH1} " " " " V _{IH1} " " " " V _{IH1} " " " " V _{IH1} " " " " " V _{IH1} " " " " " V _{IH1} " " " " " V _{IH1} " " " " " V _{IH1} " " " " " V _{IH1} " " " " " V _{IH1} " " " " " V _{IH1} " " " " " V _{IH1} " " " " " V _{IH1} " " " " " " V _{IH1} " " " " " V _{IH1} " " " " " V _{IH1} " " " " " " V _{IH1} " " " " " " " " " "	" 4 Y 4 Y 1 Y 2 Y 3 Y 4 Y 4 Y 4 Y 4 Y 4 Y 4 Y 4 Y 4 Y 4	-0.825 -0.630 -1.080 -0.880 -1.620 -1.620	" V V
1	" 4Y 1Y 2Y 3Y 4Y 4Y 4Y 4Y 4Y 1Y 2Y 3Y	-0.825 -0.630 -1.080 -0.880 -1.620 -1.620	" V V
Control Cont	1	-0.825 -0.630 -1.080 -0.880 -1.850 -1.620	" V V
2 Same tests and terminal conditions as for subgroup 1, except Tc = 125°C and limits as shown. 3 Same tests and terminal conditions as for subgroup 1, except Tc = -55°C and limits as shown. 1 Tc = 25°C Vol. 3007 11 GND LD1 LD1 LD1 VIH1 " " " " " VIH1 " " " " " " VIH1 " " " " " VIH1 " " " " " VIH1 " " " " " VIH1 " " " " VIH1 " " " "	" 3 \(\frac{1}{Y} \) 4 \(\frac{1}{Y} \) 4 \(\frac{1}{Y} \) 4 \(\frac{1}{Y} \) 4 \(\frac{1}{Y} \) 1 \(\frac{1}{Y} \) 2 \(\frac{1}{Y} \) 3 \(\frac{1}{Y} \) 3 \(\frac{1}{Y} \) 3 \(\frac{1}{Y} \) 1 \(\frac{1}{Y} \) 3 \(\frac{1}{Y} \) 1 \(" " " " " " " " " " " " " " " " " " "	" V V
2 Same tests and terminal conditions as for subgroup 1, except Tc = 125°C and limits as shown.	" 4 Y 4Y 4Y 4Y	" " " " " " " " " " " " " " " " " " "	" V V
10	GND 4Y 1 7 2 7 3 7	-1.080 -0.880 1.850 -1.620	V
Same tests and terminal conditions as for subgroup 1, except Tc = 125°C and limits as shown. Same tests and terminal conditions as for subgroup 1, except Tc = -55°C and limits as shown. 1	GND	-1.080 -0.880 1.850 -1.620	V
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	" 1 Y 2 Y 3 Y -	1.850 -1.620 " " "	
Tc = 25°C	" 1 Y 2 Y 3 Y -	" "	"
" 14 " " " " " " V _{IH1} " " " " " " " " " " " " " " " " " " "	" 3 <u>Y</u>		
" 15 " " " " " " V _{IH1} " "	. –		"
	4 Y		
$oxed{ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$	" 4Y		
	" 1 Y	" "	"
" 18 " " " V _{IH1} " " " " "	" 2 Y	" "	"
No. 19 " " " " " " VIH1 VIH1 " " " " " " " " "	" 3 Y		
	" - 4 Y	-1.820 -1.545	 V
Same tests and terminal conditions as for subgroup 1, except Tc = 125°C and limits as shown. Same tests and terminal conditions as for subgroup 1, except Tc = -55°C and limits as shown.		-1.920 -1.655	V
	GND 1 T	-0.950	V
	" 2 <u>Y</u>	"	
23 " " " " " V _{ITL}	3 Y		
25 " " " " " " " " V _{TH} " " " "	" 4 Y 4Y	,,	
26 " " " V _{ITL} " " " " " " " " " " " " " " " " " " "	" 1 Y	"	
27 " " " U VIL " " U VIL " " U U U U U U U U U U U U U U U U U	" 2 Y	"	
	" 3 Y	"	
29 " " " " " " V _{IIL} " " " V _{IIL} " " " V _{III} " " " " V _{III} " " " " " " " " "	4 Y 4 Y		
2 Same tests and terminal conditions as for subgroup 1, except Tc = 125°C and limits as shown.	1 71	-0.845	V
Same tests and terminal conditions as for subgroup 1, except Tc = -55°C and limits as shown. V _{OTL} 31 GND LD ₁ LD ₁ LD ₁ E ₁ LD ₁ V _{ITL} LD ₁ LD ₁ LD ₁	GND 4Y	-1.100 -1.600	V
32 " " V _{ITH} " " " " "	" 1 Y	"	"
33 " " " V _{ITH} " " " " "	" 2 Y	"	"
34 " " " " " V _{ITH} V _{ITH} V " " " " " " " " " " " " " " " " " "	" 3 <u>Y</u>		
35 " " " " " " " V _{ITH} " " " " " " " " " "	" 4 Y 4Y	"	
30 37 " " V _{ITH} " " " " " " " " "	" 41 - 1 Y	"	
38 " " " V _{ITH} " " " " " " " " " " " " " " " " " " "	" 2 Y	"	"
39 " " " " V _{ITH} " " " "	" 3 Y		
40 " " " V _{ITH} " "	" 4 Y	1.505	"
Same tests and terminal conditions as for subgroup 1, except Tc = 125°C and limits as shown. Same tests and terminal conditions as for subgroup 1, except Tc = -55°C and limits as shown.		-1.525 -1.635	V

For terminal cond	ditions see table IIIA.	Larminale not decian	atad ara anan

hm																								
								 4	TABLE	E III. <u>Gr</u>	oup A ir	nspectio	n for d	evice typ	<u>e 02</u> - C	ontinued								
				Case E	1 1	2	3	For t	erminai 5	condition 6	ons see	table III	A. Terr	minais no 1	ot desigr	nated are	open.	14	15	16	1			
			MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4				
	Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lin	nits	Unit
				Test no.	V _{CC1}	1 <u>Y</u>	2 Y	1A	1B	2A	2B	V _{EE}	4Y	3A	3B	4A	4B	3 Y	4 Y	V _{CC2}		Min	Max	
	1 Tc = 25°C	I _{EE}		41	GND	7	/ _					E ₁								GND	V _{EE}		-26	mA
	3		Same tests Same tests																				-29 -29	mA mA
	1	I _{IH1}	came tests	42	GND	10110 40 10	Jubgroup	V _{IH1}			10 40 0110	E ₁								GND	1A		265	μA
	Tc = 25°C			43 44					V _{IH1}	V _{IH1}										"	1B 2A			
				45 46							V_{IH1}			V _{IH1}							2B 3A			
				47 48											V_{IH1}	V _{IH1}					3B 4A			"
				49								"				V IH1	V _{IH1}			"	4B			ш
	3		Same tests Same tests																				450 450	μA μA
	1	I _{IL}		50	GND			V _{IL1}				"								"	1A	0.5		μΑ
	Tc = 25°C			51 52					V_{IL1}	V _{IL1}											1B 2A			ш
				53 54							V_{IL1}			V _{IL1}							2B 3A			
				55 56										- 121	V_{IL1}	V _{IL1}					3B 4A			"
				57								"				V IL1	V _{IL1}				4B			ш
	3		Same tests Same tests																			0.3		μA μA
23	9	t _{TLH}	3004	58	E ₃	OUT	LD ₂		IN			E ₂	LD ₂					LD ₂	LD ₂	E ₃	1 _Y	1.1	3.3	ns
ω	Tc = 25°C			59		LD ₂	OUT				IN		"					"			2 <u>Y</u>			"
				60 61			LD ₂								IN		IN	OUT LD ₂	OUT		3 <u>Y</u>			
				62		"							OUT				IN	"	LD ₂		4 Y 4Y			
	10 11		Same tests										•	•	•	•	•					1.0 1.0	4.0 4.0	ns
	9	t _{THL}	Same tests 3004	63	E ₃	OUT	LD ₂	9, except	IN = -55°	C and IImi	ts as snow	n. E ₂	LD_2					LD ₂	LD ₂	E ₃	1 -	1.1	3.3	ns ns
	Tc = 25°C			64	"	LD ₂	OUT				IN	"	"						"		2 <u>Y</u>		"	"
			"	65	"	"	LD ₂					"	"		IN			OUT	"		3 _Y		"	"
				66 67									" OUT				IN IN	LD ₂	OUT LD ₂		4 Y 4Y			
	10		Same tests	and termi									001	l			IIN		LD ₂		41	1.0	4.0	ns
	11 9	t _{PLH}	Same tests 3003	and termi	inal condi E ₃	tions as fo	r subgroup	9, except	Tc = -55°	C and limi	ts as show	n. E ₂	LD ₂	I	1	I	l	LD ₂	LD ₂	E ₃	T .=	1.0	4.0 2.9	ns ns
	Tc = 25°C	PLH	"	69	<u>-3</u>	LD ₂	OUT		•		IN	L ₂	"					"	"	L ₃	1 Y 2 Y	"	"	"
				70			LD_2						"		IN			OUT			3 Y		"	
			"	71	"		"					"	"				IN	LD_2	OUT		4 Y	"	"	"
	10		" Same tests	72	" inal condi	tions as fo	" subgrour	0 Avcont	Tc = 125	°C and lim	ite ae cho	"	OUT				IN	"	LD ₂	"	4Y	1.0	3.7	ns
	11		Same tests	and termi	inal condi	tions as fo	r subgroup		$Tc = -55^{\circ}$			/n.										1.0	3.7	ns
	9	t _{PHL}	3003	73 74	E ₃	OUT	LD ₂ OUT		IN		IN	E ₂	LD ₂					LD ₂	LD ₂	E ₃	1 <u>Y</u>	1.0	2.9	ns "
	Tc = 25°C			74 75		LD ₂	LD ₂				IN				IN			OUT			2 <u>Y</u>			
				76			"								"		IN	LD ₂	OUT		3 Y 4 Y			
			"	77	"	"	"					"	OUT				IN	,	LD ₂	"	4 Y 4Y		"	"
	10 11		Same tests Same tests																			1.0	3.7	ns ns
			Junio (USIS	and total			Jubyi Ju	p o, caccp		J und mill	40 31101	****											, <u>.,,</u>	

For terminal conditions	see table IIIA.	Terminals not designated are open.	

my	V /\																							
									-	ΓABLE	III. Gro	up A ins	spection	n for devi	ice type	<u>03</u> .								
														ninals no					,		,			
			MIL-STD-	Case E	1 -	2	3 7	4	5	6	7	8	9	10	11	12	13	14	15	16				
	Subgroup	Symbol	883	Case	5	6	4	8 5	9	10 8	11 9	12 10	13 12	14 13	15 14	16 15	17	2 18	3 19	4 20	Measured	Lim	nite	Unit
	Cabgroup	Cymbol	method	2		7	-	Ŭ	'	Ü		10		10		10	''	10	10	20	terminal			Onit
				Test no.	V _{CC1}	1Y	1 Y	1A	1B	2 Y	2Y	V _{EE}	2A	2B	2C	3A	3B	3 Y	3Y	V _{CC2}		Min	Max	
	1	V _{OH}	3006	1	GND	LD ₁	LD ₁	V _{IH1}		LD ₁	LD ₁	E ₁						LD ₁	LD ₁	GND	1Y	-0.930	-0.780	V
	Tc = 25°C			2	ä.	"		V _{IL1}	V_{IH1}									i i		i i	1Y			
				4			1.0		V_{IL1}												1 Y			
				5				9/	V IL1				V _{IL1}								1 Y			
				6									V IL1	V _{IL1}							2 <u>Y</u>			
				7										V IL1	V _{IL1}						2 Y			
				8									V _{IH1}		V IL1						2 Y 2Y			
				9							"		V IH1	V _{IH1}				"			2Y	"		"
				10 11	:										V _{IH1}						2Y _		:	
				12												V_{IL1}	V _{IL1}				3 <u>Y</u>			
				13												V _{IH1}	V IL1				3 _Y 3Y			
				14												V _{IH1}	V _{IH1}				3Y			
	2		Same tests																			-0.825	-0.630	V
	3	V _{OL}	Same tests 3007	and termi	nal condi	tions as to LD ₁	r subgroup LD₁	1, except	1c = -55°	C and limi LD ₁	ts as show LD ₁		1				1	LD ₁	LD ₁	GND	1Y	-1.080 -1.850	-0.880 -1.620	V
	Tc = 25°C	- 01		16		"			V_{IL1}			E ₁								"	1Y	"		•
			"	17	"	"		V_{IH1}			"	"							"		1 _Y		"	"
			"	18		"	"		V_{IH1}		"	"						"	"		1 Y		"	"
			"	19	"	"	"				"	"	V _{IH1}					"	"		2 Y			"
			"	20	"	"					"	"		V _{IH1}					"		2 _Y			"
24			"	21	"	"	"				"	"			V _{IH1}			"	"		2 _Y		"	"
			"	22 23	:						"		V_{IL1}	V _{IL1}							2Y 2Y			
			"	24		"	"				"	"		V IL1	V _{IL1}				"		2Y	"		"
			"	25	"	"					"	"				V _{IH1}		"			3 _Y			"
			"	26		"					"	"					V_{IH1}	"			3 _Y			"
				27 28	"						"					V_{IL1}	V _{IL1}				3Y 3Y			
	2		Same tests		inal condi	tions as fo	r subgroup	1, except	Tc = 125	°C and lim	its as show	vn.	1				V IL1				31	-1.820	-1.545	V
	3	.,,	Same tests						Tc = -55°				1		1		1			OND	1 41/	-1.920	-1.655	V
	1 Tc = 25°C	V _{OTH}		29 30	GND "	LD ₁	LD ₁	V _{ITH}	V_{ITH}	LD₁ "	LD₁ "	E ₁						LD₁	LD₁	GND "	1Y 1Y	-0.950		V "
	.0 20 0			31		"		V_{ITL}			"	"						"			1 Y	"		"
				32		"			V_{ITL}		"	"						"			1 Y	"		"
				33		"					"	"	V_{ITL}					"			2 Y	"		"
				34		"					"	"		V_{ITL}				"			2 Y	"		"
				35		"					"	"			V_{ITL}			"			2 Y	"		"
				36	"	"					"	"	V_{ITH}								2Y			
				37 38						:				V_{ITH}	V _{ITH}						2Y 2Y			
				39		"	"				"				*ITH	V _{ITL}		"	"		3 Y	"		"
				40		"	"				"						V_{ITL}	"	"		3 T			"
				41	"	"	"				"					V_{ITH}		"	"		3Y			"
	2	-	Same tests	42	inal candi	tions on fo	" unbara	1 0200	To = 125	C and li-	ite as aba	"					V_{ITH}				3Y	-0.850		" V
	3	1	Same tests																			-1.100		V

m																								
									TADLE	0-	A :.		6	: 4	- 00 0									
									IABLE	: III. <u>Gr</u>	oup A II	1spectio	n tor a	evice typ	<u>e 03</u> - C	ontinued	1.							
				0 5		_	_				ons see					ated are			1 45	- 10	1		-	-
			MIL-STD-	Case E	5	6	7	8	5 9	6 10	11	8 12	9	10 14	11 15	12 16	13 1	14 2	15 3	16 4	1			
	Subgroup	Symbol	883	Case	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured	Lim	ite	Unit
	Oubgroup	Cymbol	method	2		7	-		,			10	12	15	1.4	13	1,	10	13	20	terminal		11.3	Offic
				Test no.	V _{CC1}	1Y	1 Y	1A	1B	2 Y	2Y	V _{EE}	2A	2B	2C	3A	3B	3 Y	3Y	V _{CC2}		Min	Max	
	1	V _{OTL}		43	GND	LD ₁	LD ₁	V _{ITL}		LD ₁	LD ₁	E ₁						LD ₁	LD ₁	GND	1Y		-1.600	V
	Tc = 25°C			44			- :	.,	V_{ITL}									".			1Y			
				45			4	V _{ITH}													1 Y			_
				46					V _{ITH}									"	, i	l .	1 Y			"
				47	. "		. "			"	"		V _{ITH}					"	"		2 _Y			"
				48		"	"			"	"	"		V_{ITH}				"	"	"	2 Y			"
				49	"		"			"	"	"			V_{ITH}			"	"	"	2 Y		"	"
				50									V_{ITL}	.,							2Y			
				51 52										V_{ITL}	V _{ITL}						2Y 2Y			
				53						"					VIIL	V_{ITH}		"			3 Y		"	"
				54													V _{ITH}				3 Y			"
				55												V _{ITL}					3 Y			
				56	"	"	"			"	"	"				116	V _{ITL}	"	"		3Y		"	"
	3		Same tests																				-1.525	V
	1	I _{EE}	Same tests 3005	and termi	Inal condi	tions as fo	r subgroup	o 1, excep	t Ic = -55°	C and limit	ts as shov	vn. E₁	1		1		1	1	1	GND	V _{EE}		-1.635 -21	V mA
	Tc = 25°C		3003	31	GIND							-1								GND	V EE		-21	ША
	2		Same tests										•		•	•	•	•	•	•	•		-24	mA
	3		Same tests			tions as fo	r subgroup	1, excep	t Tc = -55°	C and limit	ts as show		1		1			1					-24	mA
	1 Tc = 25°C	I _{IH1}	3010	58 59	GND "							E ₁				V _{IH}	V _{IH}			GND "	3B 3A		265	μ Α "
	10 - 25 0			60				V _{IH1}								VIH					1A			"
			"	61	"				V_{IH1}			"								"	1B		"	"
25				62 63									V _{IH1}	V_{IH1}							2A 2B			
Oi				64										V IH1	V _{IH1}						2C			
	2		Same tests										•			•	•		•	•			450	μΑ
	3		Same tests			tions as fo	r subgroup	1, excep	t Tc = -55°	C and limit	ts as show		1		1			1					450	μΑ
	1 Tc = 25°C	I _{IL}	3009	65 66	GND "							E ₁				VIL	V _{IL}			GND "	3B 3A	0.5		μ A "
	10-230			67				V _{IL1}								V IL					1A			
				68					V_{IL1}				l ,,							"	1B			
				69 70									V_{IL1}	V_{IL1}							2A 2B			
			"	71								"		* IL1	V _{IL1}						2C			"
	2	4	Same tests																			0.3		μА
	3		Same tests	and tarm	inal aandi	itiana aa fa		- 1	* Ta - FF	C and limi	to oo obo.											0.5		

Same tests and terminal conditions as for subgroup 1, except Tc = -55°C and limits as shown.

hh																								
									TADLE		A :.		6		- 00 0									
								For t	IABLI	= III. <u>Gr</u>	oup A II	1spectio	on for a	evice typ	<u>e 03</u> - C	ontinued ated are	l.							
				Case E	1 1	2	3	4	<u>erminai</u> 5	6	7	8	9	10	11	12 12	13	14	15	16		1		
			MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	1			
	Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lim	iits	Unit
			metriou	Test no.	V _{CC1}	1Y	1 Y	1A	1B	2 Y	2Y	V _{EE}	2A	2B	2C	3A	3B	3 Y	3Y	V _{CC2}	terminar	Min	Max	
	9	t _{TLH}	3004	72	E ₃	OUT	LD ₂	IN		LD ₂	LD ₂	E ₂						LD ₂	LD ₂	E ₃	1Y	1.1	3.3	ns
	Tc = 25°C		"	73		LD_2	OUT	IN		. "	. "							"	"	"	1 Y	. "	"	"
				74 75			LD ₂			OUT	OUT LD ₂		IN IN					"	"		2Y _	"		"
									h		LD ₂		IIN			18.1			OUT		2 Y			
				76 77		"	"			LD ₂	"	"				IN IN		OUT	OUT LD ₂		3Y 3 7	"		
	10		Same tests												··		U	1			•	1.0	4.0	ns
	11		Same tests						Tc = -55°													1.0	4.0	ns
	9 Tc = 25°C	t _{THL}	3004	78 79	E ₃	OUT LD₂	LD ₂ OUT	IN IN		LD ₂	LD ₂	E ₂						LD ₂	LD ₂	E ₃	1Y 	1.1	3.3	ns "
	10 - 23 0		,,	80		LD ₂	LD ₂				OUT		IN					,,	,,		1 Y 2Y			,,
			"	81			LD ₂			OUT	LD ₂		IN								2 T 2 Y			"
				82						LD_2	"					IN			OUT		3Y			
			"	83		"				2		"				IN		OUT	LD ₂	"	3 Y	"	"	"
	10		Same tests										•				•		•			1.0	4.0	ns
	11		Same tests						t Tc = -55°											-	4)/	1.0	4.0	ns
	9 Tc = 25°C	t _{PLH}	3003	84 85	E ₃	OUT LD ₂	LD ₂ OUT	IN IN		LD ₂	LD ₂	E ₂						LD ₂	LD ₂	E ₃	1Y 1 Y	1.0	2.9	ns "
				86		,	LD_2				OUT		IN								2Y			
			"	87			2			OUT	LD ₂		IN					"	"		2 Y	"		"
			"	88						LD_2						IN		"	OUT	"	3Y	"	"	"
			"	89						"		"				IN		OUT	LD ₂		3 Y	"	"	"
	10		Same tests																			1.0	3.7	ns
3	11 9		Same tests 3003	and termi	nal condi E ₃	tions as fo OUT	r subgrou LD ₂	p 9, excep	t Tc = -55°	C and lim	its as shov LD ₂							LD ₂	LD ₂		1Y	1.0	3.7 2.9	ns ns
	Tc = 25°C	t _{PHL}	3003	91	L ₃	LD ₂	OUT	IN		" "	"	E ₂						"	"	E ₃	_	"	2.9	"
				92		"	LD_2				OUT		IN					"	"		1 Y 2Y	"		"
			"	93	"	"	" -			OUT	LD ₂	"	IN					"	"	"	2 Y	"	"	"
			"	94			"			LD ₂						IN			OUT		3Y	"		"
			"	95	"		"			"						IN		OUT	LD ₂	"	3 _Y	"	"	"
	10		Same tests																			1.0	3.7	ns
	11	1	Same tests	and termin	nal condit	tions as fo	r subgroup	9, except	fc = -55°	C and limi	ts as shov	n.										1.0	3.7	ns

mm																								
, и																								
								_		TABLE	III. <u>Gro</u>	up A ins	pection	for dev	ice type	<u>04</u> .								
				Case E	1 1	2	3	For 1	erminai 5	condition 6	ons see	table III	A. Terr	ninais no	ot design	nated are	open.	14	15	16		1		
			MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4				
	Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lin	nits	Unit
				Test no.	. V _{CC1}	1 Y	2 Y	2A	2B	2C	2D	V _{EE}	1A	1B	1C	3A	3B	3C	3 Y	V _{CC2}		Min	Max	
	1	V _{OH}	3006	1	GND	LD ₁	LD ₁					E ₁				V _{IL1}			LD ₁	GND	3 _Y	-1.930	-0.780	V
	Tc = 25°C		"	2	" "	"	•										V _{IL1}	.,		"	3 _Y			
				3 4				Ur	b				V _{IL1}					V _{IL1}			3 Y 1 Y			
				5		"							▼IL1	V _{IL1}							1 Y - 1 Y			
			"	6	"	"	"					"			$V_{\rm IL1}$				"	"	1 <u>Y</u> 1 Y	"		"
				7	"	"	"	V_{IL1}				"							"	"	2 _Y	"		"
			"	8	" "	"			V _{IL1}	.,										"	2 _Y			
				9						V _{IL1}	V _{IL1}										2 Y 2 Y			
	2		Same tests		ninal condi	itions as fo	r subarou	p 1. excep	t Tc = 125	°C and lim		wn.									2 y	-0.825	-0.630	V
	3	.,	Same tests	and term	ninal cond	itions as fo	r subgrou					vn.		1	1		ı		I.D.	OND	_	-1.080	-0.880	V
	1 Tc = 25°C	V _{OL}	3007	11 12	GND "	LD₁	LD₁ "					E ₁				V _{IH1}	V _{IH1}		LD ₁	GND "	3 Y 3 Y	-1.850 "	-1.620	V "
	10 - 23 0			13		"											VIIII	V _{IH1}			3 Y 3 Y			
				14	"		"						V_{IH1}						"	"	1 Y			"
			"	15	"		"					"		V_{IH1}					"	"	1 _Y	"		"
			"	16	" "			.,							V _{IH1}					"	1 <u>Y</u>	"		
				17 18				V _{IH1}	V _{IH1}												2 Y			
				19					V IH1	V _{IH1}										,,	2 Y 2 Y			
27				20		"	"				V _{IH1}	"								"	2 Y 2 Y	"		"
	2		Same tests												1	I.		l .		ı		-1.820	-1.545	V
	3	V _{OTH}	Same tests	and term	GND	itions as fo	r subgrou LD ₁	p 1, excep	t Tc = -55°	C and lim	its as shov	vn. E ₁				V _{ITL}			LD ₁	"	3 Y	-1.920 -0.950	-1.655	V
	Tc = 25°C			22		"	"					"					V_{ITL}			"	3 <u>Y</u> 3 Y	"		"
				23	"		"					"						V_{ITL}	"	"	3 Y	"		"
				24	"	"						"	V _{ITL}	.,					"	"	1 <u>Y</u>	"		
				25 26										V _{ITL}	V _{ITL}						1 Y			
				27				V _{ITL}							VIIL					,,	1 Y 2 Y			
				28	"		"		V _{ITL}										"	"	2 Y 2 Y			"
				29	"		"			V_{ITL}		"							"	"	2 Y	"		"
	_			30	"	"		<u> </u>	<u> </u>	<u> </u>	V _{ITL}	"							"	"	2 _Y	"		"
	3		Same tests Same tests																			-0.845 -1.100		V
	1	V _{OTL}	3 12 340	31	GND	LD ₁	LD ₁					E ₁				V _{ITH}			LD ₁	GND	3 _Y		-1.600	V
	Tc = 25°C			32	"	"											V _{ITH}	l .,			3 _Y			"
				33 34	"								V _{ITH}					V _{ITH}			3 Y			
				35		"							VITH	V _{ITH}							1 Y - 1 Y			
	2		Same tests	and term										****		l	l	l	1	l	I Y		-1.525	V
	3		Same tests	and term	inal condi	tions as fo	r subgroup	1, excep	t Tc = -55°	C and limi	its as show	/n.					-	-					-1.635	V

			
For terminal cond	ditions see table IIIA	Terminals not designated are of	nen

m	1																							
	''													evice typ										
								For t	erminal	condition	ons see	table III	A. Terr	minals no	ot design	ated are	open.							
		160		Case E		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				1
			MIL-STD-	Case F		6	7	8	9	10	11	12	13	14	15	16	1	2	3	4				i
	Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lim		Unit
				Test no.	V _{CC1}	1 Y	2 Y	2A	2B	2C	2D	V _{EE}	1A	1B	1C	3A	3B	3C	3 Y	V _{CC2}		Min	Max	i
	1	V _{OTL}		36	GND	LD ₁	LD ₁					E ₁			V_{ITH}				LD ₁	GND	1 Y	-1.600		V
	Tc = 25°C			37	"	"	"	V_{ITH}													2 Y			"
				38			7.6		V_{ITH}												2 Y			
				39						V _{ITH}											2 Y 2 Y			
				40				4			V _{ITH}										2 Y 2 Y			
	2	-	Same tests	and termi	inal condi	tions as fo	r oubarour	1 oveent	To = 125	C and lim		ın.									2 Y	-1.525	\vdash	V
	3		Same tests																			-1.635	\vdash	V
	1	I _{EE}	3005	41	GND		, casgicap	, схоорс				E ₁								GND	V _{EE}		-21	mA
	Tc = 25°C			L			l																0.4	
	3	-	Same tests Same tests																				-24 -24	mA mA
	1	I _{IH1}	3010	42	GND	10115 a5 10	Subgroup	i, except	1033	C and min	15 a5 5110W	ΙΙ. Ε ₁				V _{IH1}		1		GND	3A		265	μА
	Tc = 25°C		"	43	"							"				****	V_{IH1}				3B			"
				44 45									.,					V _{IH1}			3C 1A			
				45									V _{IH1}	V _{IH1}							1B			
			"	47	"										V _{IH1}						1C		"	"
				48 49				V _{IH1}	V												2A 2B			
				50					V_{IH1}	V _{IH1}											2B 2C			
			"	51	"						V _{IH1}	"								"	2D		"	"
28	2		Same tests																				450	μA
ŏ	3 1	I _{II}	Same tests 3009	and termi	GND	tions as to	r subgroup	o 1, except	Ic = -55°	C and lim	its as show					V _{IL1}				GND	3A	0.5	450	μA μA
	Tc = 25°C	'IL	3009	53	GIVD							E ₁				V IL1	V _{IL1}			GIND "	3B	"		μΑ "
			"	54													121	V_{IL1}			3C	"		"
				55 56									V _{IL1}								1A 1B			
				57										V_{IL1}	V _{IL1}						1C			
			"	58	"			V_{IL1}							IL.						2A	"		"
			"	59 60					V_{IL1}	V _{IL1}											2B 2C			
			"	61						V IL1	V _{II 1}										2D	"		"
	2		Same tests																			0.3		μА
	3		Same tests	and term	inal condi	tions as fo	r subgroup	1, except	Tc = -55°	C and lim	its as show	n.										0.5	1)	μΑ

*•								TABLE	III. <u>Gr</u>	oup A ir	nspectio	n for de	evice typ	<u>e 04</u> - C	ontinued									
							For t	erminal	condition	ons see	table III	A. Terr	ninals no	t desigr	nated are	open.								
	160		Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
					·											1		-						
Subgroup	Symbol	883 method	2	04	3	4		,			10	12	13						20	Measured terminal			Unit	
			Test no.	V _{CC1}	1 <u>Y</u>	2 Y	2A	2B	2C	2D	V _{EE}	1A	1B	1C	3A	3B	3C	3 _Y	V _{CC2}		Min	Max		
9	t _{TLH}	3004	62	E ₃	LD_2	OUT			IN		E ₂							LD ₂	E ₃	2 Y	1.1	3.3	ns	
Tc = 25°C		"	63	"	OUT	LD_2					"		IN					"		1 -	"	"	"	
		"	64		LD_2	' (0				"					IN		OUT		3 Y		"	"	
10		Same tests	and termi	nal condit	tions as fo	r subgroup	9, except	Tc = 125°	C and lim	its as shov	vn.								1	•	1.0	4.0	ns	
11					itions as fo		р 9, ехсер	t Tc = -55°		its as show											1.0	4.0	ns	
9	t _{THL}	3004	65	E ₃		OUT			IN		E ₂							LD ₂	-	2 Y	1.1	3.3	ns	
Tc = 25°C		"	66	"	OUT	LD_2					"		IN					"	"	1 Y	"	"	"	
		"	67		LD_2						"					IN		OUT		3 _Y	"		"	
10		Same tests	and termi	nal condit	tions as fo	r subgroup	9, except	Tc = 125°	C and lim	its as shov	vn.					•					1.0	4.0	ns	
					tions as fo		9, except	t Tc = -55°		ts as show													ns	
-	t _{PLH}	3003		L ₃					IN		E ₂							LD ₂	L ₃	2 Y	1.0	2.9	ns	
Tc = 25°C					OUT						"		IN					"	"	1 Y	"	"	"	
			70		LD_2	LD_2					"					IN		OUT	"	3 Y	"	"	"	
10																					1.0	3.7	ns	
							9, except	t Tc = -55°		ts as show					1	1	1						ns	
	t _{PHL}	3003		L ₃	_				IN		E ₂							LD ₂	E ₃	2 Y	1.0	2.9	ns	
Tc = 25°C						_					"		IN					"		1 Y	"	"	"	
			73		LD_2	LD_2										IN		OUT	"	3 _Y	"	"	"	
Subgroup Symbol Rest Case F 5 6 7 8 9 10 11 12 13 14 15 16 1 2 3 4																								
11		Same tests	and termi	nal condi	tions as fo	r subgroup	9, except	t Tc = -55°	C and limi	ts as show	n.										1.0	3.7	ns	

m										TADIE	III. Gro	un Λ inc	naction	n for devi	ico typo	05								
								For t	erminal	condition	nns see	tahle III	Δ Terr	ninals no	nt design	os. nated are	onen							
				Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	l	1		
			MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4				
	Subgroup	Symbol	883	Case	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured	Lim	nits	Unit
		,	method	2		K .															terminal			
				Test no.	V _{CC1}	1 Y	1Y	1A	1B		2B	V _{EE}	2A	2Y	2 Y	3 Y	3Y	3A	3B	V _{CC2}		Min	Max	
	1	V _{OH}	3006	1	GND	LD ₁	LD ₁					E ₁		LD ₁	LD ₁	LD₁	LD ₁	.,	V _{IH1}	GND	3Y	-0.930	-0.780	V
	Tc = 25°C			2		, i												V _{IH1}			3Y 1Y			
				4			7.0	V _{IH1}	V _{IH1}												1 Y			
			"	5	"	"	"					"	V_{IH1}	"						"	2Y		"	"
			"	6	"	"	"	4			V_{IH1}	"		"		"	"			"	2Y		"	"
			"	7	"	"	"							"	"	"	"		V_{IL1}	"	3 Y	"		"
			"	8	"	"	"							"	"	"	"	V_{IL1}		"	3 _Y	"	"	"
				9		"		V _{IL1}				"								"				"
				10				IL I	V												1 Y			
							_		V_{IL1}				l								1 Y			_
			"	11	"		. "					"	V _{IL1}	"	"	"				"	2 Y	. "	"	"
			"	12	"	"	"				V_{IL1}	"		"	"	"	"			"	2 Y		"	"
				13		"										"		V_{IL1}	V_{IL1}		3 Y			"
				14				V _{IL1}	V_{IL1}												_			
				15				• 11.1	· ILI		V _{IL1}		V _{IL1}								1 Y			,,
													V _{IL1}								2 _Y			
	2		Same tests																			-0.825	-0.630	V
	3 1	\/	Same tests 3007	and term	GND	LD ₁	r subgrou _l LD₁	1, except	IC = -55	C and limi	its as snow			LD ₁	LD ₁	LD ₁	LD ₁		\/	GND	_	-1.080 -1.850	-0.880 -1.620	V
		V _{OL}	3007		GIND	LD ₁	LD ₁					E ₁		LD ₁	LD ₁	LD ₁	LD ₁		V_{IH1}	GND	3 Y	-1.000	-1.020	
	Tc = 25°C			17			. "							"				V_{IH1}			3 Y		"	"
				18	"	"	"	V_{IH1}				"		"		"	"			"	1 Y	"	"	"
	1						"		V_{IH1}						"	"					1 Y		"	"
				19			ı	i	V IH1		1													
			"						V IH1				V _{III1}							"				
				20			"		V IH1		V	"	V _{IH1}				"			"	2 _Y			
30				20 21		"	"		V IH1		V _{IH1}	"	V _{IH1}	"		"			.,	"	2 _Y		"	
30			"	20 21 22		"			V IH1		V _{IH1}		V _{IH1}		"	" "		V	V_{IL1}		2 _Y		"	" "
30			"	20 21 22 23		"		Vii 4	VIH1		V _{IH1}	" " " "	V _{IH1}	" " " "	"			V _{IL1}	V_{IL1}	" " " " "	2 _Y	" " " " "		" " "
30				20 21 22 23 24 25				V_{IL1}			V _{IH1}	" " " " " " " " " " " " " " " " " " " "			"			V _{IL1}	V_{IL1}		2 _Y 2 _Y 3Y 3Y 1Y 1Y	" " " " " " " " " " " " " " " " " " " "		" " " "
30			" " " "	20 21 22 23 24 25 26	"	" " "	" " " " " " " " " " " " " " " " " " " "	V _{IL1}	V _{IL1}						"			V _{IL1}	V_{IL1}		2 _Y			" " " " " " " " " " " " " " " " " " " "
30				20 21 22 23 24 25 26 27			" " " " " " " " " " " " " " " " " " " "	V _{IL1}			V _{IH1}		V _{IH1}		"						2			
30				20 21 22 23 24 25 26 27 28			" " " " " " " " " " " " " " " " " " " "		V_{IL1}						"			V _{IL1}	V _{IL1}		2			
30			" " " " " " " " " " " " " " " " " " " "	20 21 22 23 24 25 26 27		" " " " " " " " " " " " " " " " " " " "		V _{IL1}							" " " " " " " " " " " " " " " " " " " "						2			
30	2	-		20 21 22 23 24 25 26 27 28 29 30			" " " " " " " " " " " " " " " " " " "	V _{IH1}	$V_{\rm IL1}$	°C and lim	V _{IL1}	" " " " " " " " " " " " " " " " " " " "	V_{IL1}		"""""""""""""""""""""""""""""""""""""""						2	-1.820		" " " " " " " " " " " " " " " " " " "
30	3		" " " " " " " " " " " " " " " " " " " "	20 21 22 23 24 25 26 27 28 29 30 and term	" " " inal cond	itions as fo	r subgrou	V _{IH1}	V _{IL1} V _{IH1} TC = 125	°C and lime °C and limi	V _{IL1} V _{IH1}	" " " " " " " " " " " " " " " " " " "	V_{IL1}		" " " " " " " " " " " " " " " " " " " "				V _{IH1}	" " " " " " " " " " " " " " " " " " " "	2 Y 2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y	-1.920	" " " " " " " " " " " " " " " " " " " "	V
30	3 1	V _{ОТН}	same tests	20 21 22 23 24 25 26 27 28 29 30 and term and term	" " " " inal cond	" " " " " " " " " " " " " " " " " " "	r subgroup T subgroup	V _{IH1}	V _{IL1} V _{IH1} TC = 125	°C and lim	V _{IL1} V _{IH1}	" " " " " " " " " " " " " " " " " " "	V_{IL1}		"""""""""""""""""""""""""""""""""""""""			V _{IH1}			2 Y 2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 2 Y 3 Y 1 Y 2 Y		-1.545	
30	3	V _{отн}	same tests	20 21 22 23 24 25 26 27 28 29 30 and term and term 31	" " " inal cond	itions as fo	r subgrou	V _{IH1} 0 1, except 0 1, except	V _{IL1} V _{IH1} TC = 125	°C and lim	V _{IL1} V _{IH1}	" " " " " " " " " " " " " " " " " " "	V_{IL1}	" " " " " " " " " " " " " " " " " " "	" " " " " " " " " " " " " " " " " " " "				V _{IH1}	" " " " " " " " " " " " " " " " " " " "	2 Y 2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 3 Y 1 Y 2 Y	-1.920	-1.545	V
30	3 1	V _{ОТН}	same tests	20 21 22 23 24 25 26 27 28 29 30 and term and term 31 32 33	inal cond	titions as fo	r subgrou	V _{IH1}	V _{IL1} V _{IH1} Tc = 125 Tc = -55	°C and lim	V _{IL1} V _{IH1}	" " " " " " " " " " " " " " " " " " "	V_{IL1}	LD ₁	" " " " " " " " " " " " " " " " " " " "	LD ₁		V _{IH1}	V _{IH1}	" " " " " " " " " " " " " " " " " " " "	2 Y 2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y	-1.920	-1.545	V
30	3 1	V _{ОТН}	same tests	20 21 22 23 24 25 26 27 28 29 30 and term 31 32 33 34	inal cond	titions as fo	r subgrou	V _{IH1} 0 1, except 0 1, except	V _{IL1} V _{IH1} TC = 125	°C and limi	V _{IL1} V _{IH1}	""""""""""""""""""""""""""""""""""""""	V _{IL1}	LD ₁	" " " " " " " " " " " " " " " " " " " "			V _{IH1}	V _{IH1}	" " " " " " " " " " " " " " " " " " "	2 v 2 v 2 v 3 y 3 y 3 y 1 y 2 y 2 y 3 y 1 y 2 y 3 y 3 y 1 y 2 y	-1.920	-1.545	V
30	3 1	V _{ОТН}	same tests	20 21 22 23 24 25 26 27 28 29 30 and term 31 32 33 34 35 36	inal cond inal cond GND	itions as fo	r subgroup LD ₁ " " "	V _{IH1} 0 1, except 0 1, except	V _{IL1} V _{IH1} Tc = 125 Tc = -55	°C and limi	V _{IL1} V _{IH1}	vn. E ₁ "	V_{IL1}	LD,	" " " " " " " " " " " " " " " " " " " "	LD1		V _{IH1}	V _{IH1}	" " " " " " " " " " " " " " " " " " "	2 Y 2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y	-1.920	-1.545	V
30	3 1	V _{ОТН}	same tests	20 21 22 23 24 25 26 27 28 29 30 and term 31 32 33 34 35	inal cond	tions as fo	r subgroup LD ₁ "	V _{IH1} 0 1, except 0 1, except	V _{IL1} V _{IH1} Tc = 125 Tc = -55	°C and limi	V _{IL1} V _{IH1} iits as showits as show	vn. E ₁	V _{IL1}	LD ₁	LD ₁	LD ₁	LD ₁	V _{IH1}	V _{IH1}	" " " " " " " " " " " " " " " " " " "	2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 2 Y 2 Y 2 Y 2 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 2 Y 2 Y 2 Y 2 Y 2 Y 2 Y 2	-1.920	-1.545	V
30	3 1	V _{ОТН}	same tests	20 21 22 23 24 25 26 27 28 29 30 and term 31 32 33 34 35 36 37	inal cond inal cond GND	itions as fo	r subgroup LD ₁ " " "	V _{IH1} 0 1, except 0 1, except	V _{IL1} V _{IH1} Tc = 125 Tc = -55	°C and lim	V _{IL1} V _{IH1} iits as showits as show	vn. E ₁ "	V _{IL1}	LD1	LD ₁	LD1		V _{IH1}	V _{IH1}	" " " " " " " " " " " " " " " " " " "	2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 2 Y 2 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1	-1.920	-1.545	V
30	3 1	V _{ОТН}	same tests	20 21 22 23 24 25 26 27 28 29 30 and term 31 32 33 34 35 36 37	inal cond inal cond GND	itions as fo	r subgroup LD ₁ " " " "	V _{IH1} 0 1, except 0 1, except V _{ITH}	V _{IL1} V _{IH1} Tc = 125 Tc = -55	°C and limi	V _{IL1} V _{IH1} iits as showits as show	vn. E ₁ "	V _{IL1}	LD ₁	LD ₁	LD ₁	LD ₁	V _{IH1}	V _{IH1}	GND "	2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1	-1.920	-1.545	V
30	3 1	V _{отн}	same tests	20 21 22 23 24 25 26 27 28 29 30 and term 31 32 33 34 35 36 37 38	inal cond inal cond GND	itions as fo	r subgroup LD ₁ " " " "	V _{IH1} 0 1, except 0 1, except	V_{IL1} V_{IH1} $\overline{TC} = 125$ $\overline{TC} = -55$	°C and limi	V _{IL1} V _{IH1} iits as showits as show	vn.	V _{IL1}	LD ₁	LD ₁	LD1	LD ₁	V _{IH1}	V _{IH1}	GND "	2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 3 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1	-1.920	-1.545	V
30	3 1 Tc = 25°C	V _{ОТН}	Same tests	20 21 22 23 24 25 26 27 28 29 30 and term and term 31 32 33 34 35 36 37 38 39 40	inal cond inal cond GND	itions as for tions as for LD ₁	r subgroup LD1 " " " " " " "	V _{IH1} o 1, except o 1, except V _{ITH}	V _{IL1} V _{IH1} TC = 125 TC = -55 V _{ITH} V _{ITL}	°C and limi	V _{IL1} V _{IH1} iits as show its as show	vn. E ₁	V _{IL1}	LD,	LD ₁	LD ₁	LD ₁	V _{IH1}	V _{IH1}	GND "	2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1	-1.920 -0.950 "	-1.545	V " " " " " " " " " " " " " " " " " " "
30	3 1	V _{ОТН}	same tests	20 21 22 23 24 25 26 27 28 29 30 mod term and term 31 32 33 34 35 36 37 38 39 40 and termi	inal condinal cond	itions as fo LD ₁	r subgroup LD1 " " " " " " " " " " " " " " " " " " "	V _{IH1} o 1, except o 1, except V _{ITH} V _{ITL}	V_{IL1} V_{IH1} $\overline{T}C = 125$ $\overline{T}C = -55^{\circ}$ V_{ITH} $\overline{T}C = 125$	°C and limi	V _{IL1} V _{IH1} iits as show its as show V _{ITH}	vn.	V _{IL1}	LD ₁	LD ₁	LD ₁	LD ₁	V _{IH1}	V _{IH1}	GND "	2 Y 2 Y 3 Y 3 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 2 Y 3 Y 1 Y 1 Y 2 Y 3 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1	-1.920	-1.545	V

17 (DEE 111.	CIOUP / CITE	pootion io	i dovido typo	oo oonunada.
For terminal con-	ditions see t	able IIIA T	erminals not	designated are open

m	V /																							
								For t	TABLE	EIII. <u>Gr</u>	oup A ir	<u>ispectio</u> table III	n for de	vice typ	<u>e 05</u> - Co ot design	ontinued	d. e onen							
		146	30	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
			MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4				·
	Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lim	iits	Unit
				Test no.	V _{CC1}	1 <u>Y</u>	1Y	1A	1B		2B	V _{EE}	2A	2Y	2 ×	3 _Y	3Y	3A	3B	V _{CC2}		Min	Max	
	1	V _{OTH}		41	GND	LD ₁	LD ₁					E ₁	V _{ITL}	LD ₁	LD ₁	LD ₁	LD ₁			GND	2 _Y	-0.950		V
	Tc = 25°C			42			."0				V_{ITL}	"		"							2 Y	"		
				43			-	0				"		"	"		"	V_{ITL}	V _{ITL}	"	3 _Y	"]	"
				44	"		"	V _{ITL}	V _{ITL}			"		"	"					"	1 -	"]	"
				45	"		"				V_{ITL}		V_{ITL}	"	"	"				"	2 Y	"		
	3		Same tests																			-0.845 -1.100		V
	1	V _{OTL}	Same tests	46	GND	LD ₁	r subgroup LD₁	1, except	10 = -55		ts as snow	n. E ₁		LD₁	LD ₁	LD ₁	LD ₁		V_{ITH}	GND	3 _Y	-1.100	-1.600	V
	Tc = 25°C			47														$V_{\rm ITH}$			3 Y 3 Y			
				48			"	V _{ITH}				"		"							1 Y			"
				49					V_{ITH}												1 Y			
				50	"		"					"	V_{ITH}	"	"		"			"	2 Y			"
				51			"				V_{ITH}	"		"	"					"	2 _Y		"	
				52 53		:						:				:	:		V_{ITL}		3Y 3Y		:	:
				54				V_{ITL}										V _{ITL}			1Y			
				55 56					V_{ITL}												1Y 2Y		:	
				57							V _{ITL}		V _{ITL}								2Y			
				58 59		:		V _{ITH}	V _{ITH}							:	"	V_{ITH}	V _{ITH}		3Y 1Y		:	
				60							V _{ITH}	"	V _{ITH}	"	"						2Y			"
31	3		Same tests Same tests																				-1.525 -1.635	V
	1	I _{EE}	3005	61	GND	10115 as 10	Subgroup	i, except	V _{IH1}	C and illini	V _{IH1}	E ₁							V _{IH1}	GND	V _{EE}		-28	mA
	Tc = 25°C	4	Same tests	and termi	inal condit	ione ae fo	r subaroun	1 evcent	Tc = 125	C and limi	ite ae ehov	/n											-31	mA
	3		Same tests	and termi																			-31	mA
	1 Tc = 25°C	I _{IH1}	3010	62 63	GND "			V _{IH1}				E ₁	V _{IH1}							GND "	1A 2A		265	μ Α "
	10 = 25°C			64									V IH1					V _{IH1}			3A			
				65 66				V _{IH1}	V _{IH1}		V _{IH1}		V _{IH1}								1A 2A			
				67								"	V IH1					V _{IH1}	V _{IH1}		3A			"
	3		Same tests Same tests																				450 450	μA μA
	1	I _{IH2}	3010	68	GND	10115 as 10	Subgroup	i, except	V _{IH1}	C and min	is as snow	E ₁								GND	1B		220	μA "
	Tc = 25°C			69 70	"						V _{IH1}										2B 3B			
	2	1	Same tests		inal condit	ions as fo	r subgroup	1, except	t Tc = 125	C and limi	its as show	vn.	1	1	1	1	1	1	V_{IH1}	1	JB	1	375	μА
	3	,	Same tests	and termi	inal condit			1, except				n.	1		ı		1		ı	0110	4.	0.5	375	μA
	1 Tc = 25°C	I _{IL}	3009	71 72	GND "			V _{IL1}	V _{IL1}			E ₁								GND "	1A 1B	0.5		μ Α "
	1 200			73	"				- 161		V _{IL1}		.,								2B			:
				74 75	"								V _{IL1}					V _{IL1}			2A 3A			
		4	"	76	. "		<u> </u>	<u> </u>			<u> </u>	"						- 121	$V_{\rm IL1}$	"	3B	"		"
	3	4	Same tests Same tests																			0.3	\vdash	μA μA
		1	Panic (Colo	ana (Cilli	ii iai condi	a3 IU	, Jungioup	, ι, υλυ υ μι	. 1000	o and IIIIII	io ao SHUW											0.0		μΛ

m	V />	1																						
								Eor t							<u>e 05</u> - Co it designa									
			90	Case E	1	2	3	4	5	6	7	8	A. Termi	10	11	12	13	14	15	16				
			MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	1			
	Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lim	iits	Unit
				Test no.	V _{CC1}	1 Y	1Y	1A	1B		2B	V _{EE}	2A	2Y	2 Y	3 Y	3Y	3A	3B	V _{CC2}		Min	Max	
	9 Tc = 25°C	t _{TLH}	3004	77 78	E ₃	LD ₂ OUT	OUT LD ₂	IN IN	V_{IL2} V_{IL2}			E ₂		LD ₂	LD ₂	LD ₂	LD ₂			E ₃	1Y 1 Y	1.1	3.5	ns "
				79		LD ₂	*:C	0.			IN		V _{IL2}	OUT	"		:				2Y			
				80 81					h		IN		V _{IL2}	LD ₂	OUT LD₂		OUT	IN	V_{IL2}		2 Y 3Y			
			"	82	"	"	"					"		"	LD2	OUT	LD ₂	IN	V _{IL2}	"	3 <u>Y</u>	"	"	ш
	10 11		Same tests																		•	1.0 1.0	4.3 4.3	ns ns
	9	t _{THL}	Same tests 3004	83	"	LD_2	OUT	V_{IL2}	IN	C and IIm	ts as snow	/n. E ₂		LD ₂	LD ₂	LD ₂	LD ₂			"	1Y	1.0	3.5	ns
	Tc = 25°C			84 85		OUT	LD ₂	V _{IL2}	IN		.,		IN	OUT							1 Y			
			"	86	"	LD ₂	"				V_{IL2} V_{IL2}	"	IN	LD ₂	OUT					"	2Y 2 Y	"	"	"
				87 88		"						"			LD ₂	" OUT	OUT LD ₂	V _{IL2} V _{IL2}	IN IN	"	3Y	"		
	10		Same tests		inal condi	tions as fo	r subarour	9. excep	Tc = 125	°C and lim	its as show	vn.				001	LD ₂	V IL2	IIN		3 _Y	1.0	4.3	ns
	11		Same tests	and term	inal condi	itions as fo	r subgroup	9, excep	Tc = -55°			/n.										1.0	4.3	ns
	9 Tc = 25°C	t _{PLH}	3003	89 90	E ₃	LD ₂	OUT "	IN IN	V_{IL2} V_{IH2}			E ₂		LD ₂	LD ₂	LD ₂	LD ₂			E ₃	1Y 1Y	1.1	3.7	ns "
			"	91 92		"		V _{IH2} V _{IL2}	IN "			"		"						"	1Y 1Y	"		
			"	93	"	OUT	LD_2	V _{IH2}							"					"	1 Y	"	"	"
				94				V _{IL2}	.,			"									1 -			
				95 96				IN IN	V_{IL2} V_{IH2}												1 <u>Y</u>			
32				97		LD ₂	"	IIN	V IH2		IN		V_{IL2}	OUT							1 Y 2Y	"		
			"	98 99							IN V _{IH2}		V _{IH2} IN								2Y 2Y			
				100							V_{IL2}		"		"						2Y			
				101 102							V _{IH2} V _{IL2}			LD ₂	OUT "						2 Y			
				103							IN		V _{IL2}								2 Y 2 Y			
			"	104							IN		V _{IH2}							"	2 Y 2 Y	"	"	"
			"	105 106		"						"			LD ₂		OUT	IN IN	V _{IL2}	"	3Y 3Y	"		
				107													:	V_{IH2}	V _{IH2} IN		3Y			
				108 109												OUT	LD ₂	V_{IL2} V_{IL2}	:		3Y 3 _Y			
			"	110	"	"	"					"		"	•	"	"	V_{IH2}		"	3 Y	"	"	
				111	"	"	"					"		"		"		IN	V _{IH2}	"	3 _Y	"	"	"
	10			112	" "	" tions 1	"	0.000	To - 405	00 05 11	ita aa -l-	"		"	"	"	"	IN	V_{IL2}	"	3 _Y	1.0	" 4 F	"
	10 11		Same tests Same tests																			1.0	4.5 4.5	ns ns

W.C																							
								TADLE	- 111 - 02		nonostia	n for do	viaa tun	0 OF C	antinua	J							
							Ford	IABLE	- III. <u>Gi</u>	one coo	nspectio	1 for de	vice typ	<u>e 05</u> - Co ot design	ontinued	J.							
	776	90	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
		MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4				
Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lin	nits	Unit
		Incurou	Test no.	V _{CC1}	1 V	1Y	1A	1B		2B	V _{EE}	2A	2Y	2 Y	3 Y	3Y	3A	3B	V _{CC2}	terrinia	Min	Max	
9	t _{PHL}	3003	113	E ₃	LD ₂	OUT	IN	V _{IH2}			E ₂		LD ₂	LD ₂	LD ₂	LD ₂			E ₃	1Y	1.1	3.7	ns
Tc = 25°C	;		114 115		"		IN V _{IL2}	V _{IL2} IN												1Y 1Y			
		"	116	"	"		V _{IH2}	"						"					"	1Y			
		"	117	"	OUT	LD ₂	V_{IL2}	'			"		"	"		"				1 _Y			"
		"	118	"	"	"	V _{IH2}	7"					"	"		"			"	1 Y		"	"
		"	119	"	"	"	IN	V_{IH2}					"	"	"	"			"	1 Y	"	"	"
		"	120	"	"	"	IN	V_{IL2}			"			"	"	"			"	1 Y	"	"	"
			121 122		LD ₂					IN		V _{IH2}	OUT							2Y		:	
		"	123		"	"				IN V _{IL2}		V _{IL2} IN								2Y 2Y			"
			124							V_{IH2}				OUT.						2Y		:	
			125							V _{IL2}			LD ₂	OUT						2 Y			
			126							V _{IH2}		.,								2 _Y			
			127	l						IN		V _{IH2}								2 <u>Y</u>			
			128	l						IN		V_{IL2}						.,		2 Y			
			129 130											LD ₂		OUT	IN IN	V_{IL2} V_{IH2}		3Y 3Y			
		:	131	"											"		V_{IL2}	IN "	"	3Y	"		"
			132 133												OUT	LD ₂	V_{IH2} V_{IL2}			3Y			
			134												"	"	V _{IH2}			3 Y			
			135														IN	V _{IH2}		3 Y 3 Y			
			136		"												IN	V _{IL2}		3 Y 3 Y			
10		Same tests													1	1			1		1.0	4.5	ns
11		Same tests	and term	inal condi	itions as fo	r subgroup	p 9, excep	t Tc = -55°	C and lim	its as show	wn.										1.0	4.5	ns

m																								
	' • ()									TABLE	III. Gro	up A ins	pection	for dev	ice type (<u>06</u> .								
		G /	2						terminal	conditi	ons see	table III	A. Term	ninals no	ot design	ated are				1	ı	1		1
		- 6	MIL-STD-	Case E	1 5	6	7	4 8	5 9	6 10	7 11	8 12	9 13	10 14	11 15	12 16	13 1	14	15 3	16 4				
	Subgroup	Symbol	883	Case	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured	Lin	nits	Unit
			method	Z Test no.	V _{CC1}	1Y	1 Y	1A	1B	1C	1D	V _{EE}	2A	2B	2C	2D	2E	2 _Y	2Y	V _{CC2}	terminal	Min	Max	
	1	V _{OH}	3006	1	GND	LD ₁	LD ₁	V _{IH1}				E ₁						LD ₁	LD ₁	GND	1Y	-0.930	-0.780	V
	Tc = 25°C			2					V _{IH1}	V _{IH1}											1Y 1Y		"	
				4	"					* 1111	V _{IH1}										1Y		"	"
				5 6					7				V _{IH1}	V _{IH1}							2Y 2Y			
				7											V_{IH1}						2Y			
			"	8 9												V _{IH1}	V _{IH1}				2Y 2Y			
			"	10	"	"		V_{IL1}				"						"	"	"	1 _Y	"	"	"
			"	11	"	"			V _{IL1}									"	"	"	1 _Y	"	"	
			"	12	"	"				V _{IL1}								"		"	1 _Y	"	"	
			"	13	"	"					V _{IL1}							"	"	"	1 _Y		"	"
			"	14	"								V _{IL1}					"	"	"	2 Y			
				15		"								V _{IL1}							2 Y		"	
			"	16	"										V _{IL1}						2 _Y			
				17	"											V _{IL1}					2 _Y		"	
	-	4		18				<u> </u>			L .						V_{IL1}				2 _Y	-0.825	-0.630	V
(.)	2						ar siinaraiii	n 1 excen	t IC = -12	o°C and IIr	nits as sno	wn.												
34	3	1		s and term																		-1.080		V
4	3 1	V _{OL}	Same tests 3007	and term					t Tc = -55°									LD ₁	LD ₁	GND	1Y		-0.880 -1.620	
3 4	3	V _{OL}	Same tests	and term 19 20	inal condi	itions as fo	r subgrou	1, ехсер		C and lim								LD ₁	LD ₁	GND "	1Y	-1.080	-0.880	V
3 4	3 1	V _{OL}	Same tests	19 20 21 22	GND "	LD ₁	or subgroup LD ₁	1, ехсер	t Tc = -55°			/n. " "						LD ₁			1Y 1Y 1Y	-1.080	-0.880 -1.620 "	V
3 4	3 1	V _{OL}	Same tests 3007	19 20 21 22 23	inal condi GND "	itions as fo	or subgroup LD ₁	1, ехсер	t Tc = -55°	C and lim	its as show	/n. " "	V _{IL1}	Vua				LD ₁ "	"		1Y 1Y 1Y 2Y	-1.080	-0.880 -1.620	V
34	3 1	V _{OL}	Same tests 3007	19 20 21 22 23 24 25	GND "	LD ₁	Dr subgroup	1, ехсер	t Tc = -55°	C and lim	its as show	/n.	V _{IL1}	V _{IL1}	V _{IL1}			LD ₁		" " " " " " " " " " " " " " " " " " " "	1Y 1Y 1Y 2Y 2Y 2Y	-1.080	-0.880 -1.620 "	V
34	3 1	V _{OL}	Same tests 3007	19 20 21 22 23 24 25 26	inal condi	itions as fo	r subgrou LD ₁ "	1, ехсер	t Tc = -55°	C and lim	its as show	/n. " " " "	V _{IL1}	V _{IL1}	V _{IL1}	V _{IL1}	VII 1	LD ₁			1Y 1Y 1Y 2Y 2Y 2Y 2Y	-1.080	-0.880 -1.620 "	V
34	3 1	V _{OL}	Same tests 3007	19 20 21 22 23 24 25	inal condi GND "	itions as fo	or subgroup LD1 "" "" "" "" "" "" "" "" ""	1, ехсер	t Tc = -55°	C and lim	its as show	/n.	V _{IL1}	LD ₁		" " " " " " " " " " " " " " " " " " " "	1Y 1Y 1Y 2Y 2Y 2Y	-1.080	-0.880 -1.620	V				
34	3 1	V _{OL}	Same tests 3007	s and term 19 20 21 22 23 24 25 26 27	inal condi GND	itions as fo	or subgroup	o 1, excep	t Tc = -55°	C and lim	its as show	/n. " " " " " " "	V _{IL1}	LD ₁		" " " " " " " " " " " " " " " " " " " "	1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 2Y	-1.080	-0.880 -1.620	V				
34	3 1	V _{OL}	Same tests 3007	s and term 19 20 21 22 23 24 25 26 27 28 29	inal condi	itions as fo	or subgroup	o 1, excep	t Tc = -55°	C and lim	its as show	/n. " " " " " " E ₁	V _{IL1}	LD ₁			1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 Y 1 Y	-1.080	-0.880 -1.620	V				
34	3 1	V _{OL}	Same tests 3007	a and term 19 20 21 22 23 24 25 26 27 28 29 30 31	inal condi	itions as fo	or subgroup	o 1, excep	t Tc = -55°	V _{IL1}	its as show	/n.		V _{IL1}	V _{IL1}	V _{IL1}	V _{IL1}	LD ₁			1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 Y	-1.080	-0.880 -1.620 "	V V " " " " " " " " " " " " " " " " " "
34	3 1	V _{OL}	Same tests 3007 "" "" "" "" "" "" "" "" "" "" "" "" ""	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31	inal condi	itions as fo	or subgroup	o 1, excep	t Tc = -55°	V _{IL1}	V _{IL1}	rn.	V _{IL1}	LD ₁			1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 Y 1 Y	-1.080	-0.880 -1.620 "	V V "				
34	3 1	V _{OL}	Same tests 3007	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33	inal condi	itions as fo	or subgroup	o 1, excep	t Tc = -55°	V _{IL1}	V _{IL1}	rn.		V _{IL1}		V _{IL1}	V _{IL1}	LD ₁			1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 Y 1 Y	-1.080	-0.880 -1.620 "	V V "
34	3 1	V _{OL}	Same tests 3007	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34	inal condi	itions as fo	or subgroup	o 1, excep	t Tc = -55°	V _{IL1}	V _{IL1}	rn			V _{IL1}		V _{IL1}	LD ₁			1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 Y 1 Y 1 Y 2 Y	-1.080	-0.880 -1.620 "	V V "
34	3 1	V _{OL}	Same tests 3007	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	inal condi	itions as fo	or subgroup	o 1, excep	t Tc = -55°	V _{IL1}	V _{IL1}	rn.				V _{IL1}					1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 - 1 - 1 - 1 - 2	-1.080	-0.880	V V "
34	3 1 Tc = 25°C	V _{OL}	Same tests 3007	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	inal condi	itions as fo	or subgroup	V _{IH1}	t Tc = -55°	V _{IL1}	V _{IL1}	rn					V _{IL1}	LD ₁			1Y 1Y 1Y 2Y 2Y 2Y 2Y 1 Y 1 Y 1 Y 2 Y 2 Y	-1.080 -1.850 ""	-0.880	V V """"""""""""""""""""""""""""""""""
34	3 1 Tc = 25°C	VoL	Same tests 3007 "" "" "" "" "" "" "" "" "" "" "" "" ""	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 s and term	inal condi	itions as fo	or subgroup LD1	V _{IH1}	t Tc = -55° V _{IL1} V _{IH1}	V _{IL1} V _{IH1}	V _{IL1}	/n									1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 - 1 - 1 - 1 - 2	-1.080 -1.850 """"""""""""""""""""""""""""""""""""	-0.880 -1.620 "" "" ""	V V "
34	3 1 Tc = 25°C	V _{OL}	Same tests 3007	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 36 36 and terms 37	inal condi	itions as fo	or subgroup LD1	0 1, excep	t Tc = -55' V _{IL1} V _{IH1}	V _{IL1} V _{IH1}	V _{IL1}	/n.									1Y 1Y 1Y 2Y 2Y 2Y 2Y 1	-1.080 -1.850 ""	-0.880 -1.620 "" "" ""	V V """"""""""""""""""""""""""""""""""
34	3 1 Tc = 25°C		Same tests 3007 "" "" "" "" "" "" "" "" "" "" "" "" ""	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 3 and term 3 and term 3 7 38	inal condi	itions as fo	or subgroup LD1 " " " " " " " " " " " " " " " " " " "	V _{IH1}	t Tc = -55° V _{IL1} V _{IH1}	V _{IL1} V _{IH1} °C and lim C and lim	V _{IL1}	/n									1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 - 1 - 1 - 1 - 2	-1.080 -1.850 "" "" "" "" "" "" "" "" ""	-0.880 -1.620 "" "" ""	V V """"""""""""""""""""""""""""""""""
3.4	3 1 Tc = 25°C		Same tests 3007 "" "" "" "" "" "" "" "" "" "" "" "" ""	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 s and term s and term s and term 37 38 39 40	inal condi	itions as fo	or subgroup LD1 " " " " " " " " " " " " " " " " " " "	0 1, excep	t Tc = -55' V _{IL1} V _{IH1}	V _{IL1} V _{IH1}	V _{IL1}	vn	V _{IH1}								1Y 1Y 1Y 2Y 2Y 2Y 2Y 1Y 1Y 1Y 1Y 1Y 2Y 2Y 1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 2Y 1Y	-1.080 -1.850 "" "" "" "" "" "" "" "" ""	-0.880 -1.620 "" "" ""	V V """"""""""""""""""""""""""""""""""
34	3 1 Tc = 25°C		Same tests 3007 "" "" "" "" "" "" "" "" "" "" "" "" ""	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 s and term 37 38 39 40 41	inal condi	itions as fo	or subgroup LD1 " " " " " " " " " " " " " " " " " " "	0 1, excep	t Tc = -55' V _{IL1} V _{IH1}	V _{IL1} V _{IH1} °C and lim C and lim	V _{IL1}	/n.		VIH1							1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 - 1 - 1 - 1 - 2	-1.080 -1.850 "" "" "" "" "" "" "" "" ""	-0.880 -1.620 "" "" ""	V V """"""""""""""""""""""""""""""""""
34	3 1 Tc = 25°C		Same tests 3007 "" "" "" "" "" "" "" "" "" "" "" "" ""	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 3 and term 37 38 39 40 41 42 43	inal condi	itions as fo	or subgroup LD1 " " " " " " " " " " " " " " " " " " "	0 1, excep	t Tc = -55' V _{IL1} V _{IH1}	V _{IL1} V _{IH1} °C and lim C and lim	V _{IL1}	vn.	V _{IH1}			V _{IH1}					1Y 1Y 1Y 2Y 2Y 2Y 2Y 1Y 1Y 1Y 1Y 1Y 2Y 2Y 1Y 1Y 1Y 2Y	-1.080 -1.850 "" "" "" "" "" "" "" "" ""	-0.880 -1.620 "" "" ""	V V """"""""""""""""""""""""""""""""""
34	3 1 Tc = 25°C		Same tests 3007 "" "" "" "" "" "" "" "" "" "" "" "" ""	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 s and term 37 38 39 40 41 42 43 44	inal condi	itions as fo	or subgroup LD1 " " " " " " " " " " " " " " " " " " "	0 1, excep	t Tc = -55' V _{IL1} V _{IH1}	V _{IL1} V _{IH1} °C and lim C and lim	V _{IL1}	vn	V _{IH1}	VIH1	V _{IH1}		V _{IH1}				1Y 1Y 1Y 2Y 2Y 2Y 2Y 2Y 1 - 1 - 1 - 1 - 2	-1.080 -1.850 "" "" "" "" "" "" "" "" ""	-0.880 -1.620 "" "" ""	V V """"""""""""""""""""""""""""""""""
34	3 1 Tc = 25°C		Same tests 3007 "" "" "" "" "" "" "" "" "" "" "" "" ""	s and term 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 s and term 5 and term 7 38 39 40 41 42 43 44 45	inal condi	itions as fo	or subgroup The	O 1, excep VITH	$t TC = -55$ V_{IL1} V_{IH1} V_{IH1} V_{IH1}	°C and lim V _{IL1} °C and lim C and lim V _{ITH}	V _{IL1}	vn	V _{IH1}	VIH1	V _{IH1}	V _{IH1}					1Y 1Y 1Y 2Y 2Y 2Y 2Y 1Y 1Y 1Y 1Y 1Y 2Y 2Y 1Y 1Y 1Y 2Y	-1.080 -1.850 "" "" "" "" "" "" "" "" ""	-0.880 -1.620 "" "" ""	V V """"""""""""""""""""""""""""""""""

For tarminal sons	ditiona aga	table IIIA	Torminala	not do	sianatad ara anan
For terminal cond	allions see	table IIIA.	reminais	not des	signated are open.

m	V /																							
									TABLE I	II. <u>Gro</u>	up A ins	pection	for devi	ce type	<u>06</u> - Co	ntinued.								
			20	Case E	1	2	3	For te	rminal c	ondition 6	ns see ta	able IIIA	. Termir	als not	designa 11	ted are	open.	14	15	16	1	1		I
			MIL-STD-	Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4				
	Subgroup	Symbol	883	Case	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured	Lin	nits	Unit
			method	Z Test no.	V _{CC1}	1Y		1A	1B	1C	1D	V _{EE}	2A	2B	2C	2D	2E		2Y	V _{CC2}	terminal	Min	Max	
	1	V _{OTH}		46	GND	LD ₁	1 Y LD ₁	V _{ITL}	1.5	10	15	E ₁	271	2.5	20	2.5		2 Y LD ₁	LD ₁	GND		-0.950	WILLY	V
	Tc = 25°C	·OIH		47	"			*1112	V _{ITL}			-						"		"	1 Y	"		
				48						V _{ITL}											1 Y 1 Y			
				49			"				V _{ITL}										1 Y			
				50									V _{ITL}								2 Y			
				51			"							V _{ITL}							2 Y 2 Y			
				52											V _{ITL}						2 T 2 Y			
				53												V_{ITL}					2 T			
				54													V_{ITL}				2 T	"		
	2		Same tests	and termi	nal condition	ons as for s	subgroup 1	1, except T	c = 125°C	and limits	as shown	l.	1	I		II.	1	1		1		-0.845		V
	<u>3</u>	V _{OTL}	Same tests	and termi	nal condition GND	ons as for s LD₁	subgroup 1 LD ₁	1, except T	c = -55°C	and limits	as shown.		1	ı	1		1	LD ₁	LD ₁	GND	1Y	-1.100	-1.600	V
	Tc = 25°C	VOTL		56	"	"	LD ₁	VITL	V _{ITL}			E ₁						"	"	"	1Y		-1.000	
				57						V_{ITL}	.,										1Y			
				58 59			"				V _{ITL}		V _{ITL}								1Y 2Y			
				60										V_{ITL}	.,				:	:	2Y			
				61 62			"								V _{ITL}	V _{ITL}					2Y 2Y			
35				63			"	.,								1112	V_{ITL}		:	:	2Y			
O.				64				V_{ITH}	.,			l "						<u>"</u>		l :	1 Y			
				65					V _{ITH}												1 Y			
				66						V _{ITH}	١.,	_ "									1 Y			_ "
				67							V _{ITH}	_ "									1 Y			
				68								_ "	V _{ITH}	١.,							2 Y			
				69								_ "		V_{ITH}	.,						2 Y			
				70								_ "			V _{ITH}						2 _Y			
				71 72												V _{ITH}	.,	ļ <u>.</u>		<u>"</u>	2 _Y			
	2	1	Como tooto		nal canditio			1 avaant 7	n = 10F0C	and limita	aa ahausa						V _{ITH}				2 Y		-1.525	V
	3	1	Same tests Same tests	and termi	nal condition	ons as for s	subgroup 1	1, except 1	$c = 125^{\circ}C$	and limits	as shown												-1.635	V
	1	I _{EE}	3005	73	GND		J P					E ₁									V _{EE}		-14	mA
	Tc = 25°C 2	1	Same tests	and termi	nal condition	ns as for s	subgroup 1	I 1, except T	c = 125°C	and limits	as shown	<u> </u>	I	<u> </u>	l	L		<u> </u>	L		<u> </u>		-16	mA
	3	1	Same tests	and termi	nal condition	ons as for s	subgroup 1	1, except T	c = -55°C	and limits	as shown.		1	1	•		1	1		1	1		-16	mA
	1 Tc = 25°C	I _{IH1}	3009	74 75	GND			V _{IH1}	V _{IH1}			E ₁								GND "	1A 1B		265	μ Α "
	10-230			76					V IH1	V _{IH1}											1C			"
				77 78							V_{IH1}		\ \ \								1D 2A		:	
				79									V_{IH1}	V _{IH1}							2B			
				80											V_{IH1}	.,,					2C			
				81 82												V _{IH1}	V _{IH1}				2D 2E			
	2]	Same tests											•	•			•		•	•		450	μА
	3		Same tests	and termi	nal condition	ons as for s	subgroup 1	1, except T	c = -55°C	and limits	as shown.												450	μΑ

hhy																								
	• ()								TABLE	III. Gr	oup A ir	nspectio	n for de	vice typ	e 06 - Co	ontinued	l <u>.</u>							
								For t	erminal	condition	ons see	table III	A. Term	inals no	t design	ated are	open.							
		1,60	MIL-STD-	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
				Case F	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4			.,	
	Subgroup	Symbol	883 method	Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Lim	nits	Unit
				Test no.	V _{CC1}	1Y	1 Y	1A	1B	1C	1D	V _{EE}	2A	2Y	2 Y	3 _Y	3Y	2 Y	2Y	V _{CC2}	1	Min	Max	
	1	I _{IL}	3009	83	GND	7-1	7	V _{IL1}				E ₁								GND	1A	0.5		μА
	Tc = 25°C			84 85					V_{IL1}												1B 1C			
				85 86			10			V_{IL1}	V _{IL1}										1D			
			"	87							12.1		V_{IL1}							"	2A	"		"
				88 89	:			- 4						V_{IL1}						"	2B 2C			
				90											V_{IL1}	V _{IL1}					2D			
			"	91								"				- 121	V_{IL1}				2E	"		"
	2		Same tests																			0.3		μА
	3		Same tests					p 1, except	Tc = -55°		its as show			1	1	1	1	1.0	1.0		11/	0.5	3.3	μA
		t _{TLH}	3004	92 93	E ₃	OUT LD ₂	LD ₂ OUT			IN IN		E ₂						LD ₂	LD ₂	E ₃	1Y	1.1	3.3	ns "
				94		"	LD ₂								IN				OUT		1 Y 2Y			
				95			"								IN			OUT	LD ₂		2 Y	"		
	10		Same tests	and termin	nal condi	tions as fo	r subaroui	p 9. except	Tc = -125	°C and lin	nits as sho	wn.				l	l			l .	21	1.0	4.0	ns
	11		Same tests																			1.0	4.0	ns
	9 Tc = 25°C	t _{THL}	3004	96 97	E ₃	OUT LD ₂	LD ₂ OUT			IN IN		E ₂						LD ₂	LD ₂	E ₃	1Y _	1.1	3.3	ns "
	10 = 25-0			98		LD ₂				IIN					IN				OUT		1 Y			
				98 99			LD ₂								IN IN			OUT	OUT LD ₂		2Y 2 Y			
	10	1	Same tests	and termin	nal condi	tions as fo	r subarou	p 9. excent	Tc = -125	°C and lin	nits as sho	wn.		·	·	1	l	l		1		1.0	4.0	ns
)	11		Same tests																			1.0	4.0	ns
	9 Tc = 25°C	t _{PLH}	3003	100 101	E ₃	OUT LD ₂	LD ₂ OUT			IN IN		E ₂						LD ₂	LD ₂	E ₃	1Y -	1.0	2.9	ns "
	200			102		"	LD ₂								IN				OUT		1 Y 2Y			
			"	103	"	"	"					"			IN			OUT	LD ₂	"	2 T 2 Y	"	"	"
	10		Same tests	and termin	nal condi	tions as fo	r subgrou	p 9, except	Tc = -125	°C and lin	nits as sho	wn.	1	1	1	1	1	1	1	1	· · · · · · · · · · · · · · · · · · ·	1.0	3.7	ns
	11		Same tests	and termin	nal condi	tions as fo	r subgrou					/n.										1.0	3.7	ns
	9 Tc = 25°C	t _{PHL}	3003	104 105	E ₃	OUT LD ₂	LD ₂ OUT			IN IN		E ₂						LD ₂	LD ₂	E ₃	1Y . –	1.0	2.9	ns "
	10 - 25 0			105		LD ₂				IIN					IN				OUT		1 Y 2Y			
			"	106		"	LD ₂					"			IN IN			OUT	LD ₂	"	2 Y 2 Y	"	"	"
	10	1	Same tests	and termin	nal condi	tions as fo	r subgrou	p 9, except	Tc = 125	°C and lim	its as show	wn.										1.0	3.7	ns
	11		Same tests	and termin	nal condi	tions as fo	r subgrou	p 9, except	Tc = -55°	C and limi	its as show	/n.									-	1.0	3.7	ns

5. PACKAGING

5.1 <u>Packaging requirements</u>. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Service or Defense Agency, or within the military service's system command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

- 6.1 <u>Intended use.</u> Microcircuits conforming to this specification are intended for original equipment design applications and logistic support of existing equipment.
 - 6.2 Acquisition requirements. Acquisition documents should specify the following:
 - a. Title, number, and date of the specification.
 - b. PIN and compliance identifier, if applicable (see 1.2).
 - c. Requirements for delivery of one copy of the conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
 - d. Requirements for certificate of compliance, if applicable.
 - e. Requirements for notification of change of product or process to contracting activity in addition to notification to the qualifying activity, if applicable.
 - f. Requirements for failure analysis (including required test condition of method 5003 of MIL-STD-883), corrective action, and reporting of results, if applicable.
 - g. Requirements for product assurance options.
 - h. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements should not affect the part number. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.
 - Requirements for "JAN" marking.
 - j. Packaging requirements (see 5.1).
- 6.3 <u>Superseding information</u>. The requirements of MIL-M-38510 have been superseded to take advantage of the available Qualified Manufacturer Listing (QML) system provided by MIL-PRF-38535. Previous references to MIL-M-38510 in this document have been replaced by appropriate references to MIL-PRF-38535. All technical requirements now consist of this specification and MIL-PRF-38535. The MIL-M-38510 specification sheet number and PIN have been retained to avoid adversely impacting existing government logistics systems and contractor's parts lists.
- 6.4 <u>Qualification</u>. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List QML-38535 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DSCC-VQ. P.O. Box 3990. Columbus. Ohio 43218-3990.

6.5 <u>Abbreviations, symbols, and definitions.</u> The abbreviations, symbols, and definitions used herein are defined in MIL-PRF-38535, MIL-HDBK-1331, and as follows:

GND	Ground zero voltage potential
V _{OTH}	High-level threshold output voltage
Votl	Low-level threshold output voltage
V _{ITH}	High-level threshold input voltage
V _{ITL}	Low-level threshold input voltage
V _{EEL}	Shifted power supply voltage for the purpose of ac testing
T _J	Circuit junction temperature
T _C	Case operating temperature
P _D	Circuit power dissipation
hetaJA	Junction to ambient thermal resistance in °C per watt
θ _{JC}	Junction to case thermal resistance

- 6.6 <u>Logistic support.</u> Lead materials and finishes (see 3.4) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2), lead material and finish A (see 3.4). Longer length leads and lead forming should not affect the part number.
- 6.7 <u>Substitutability.</u> The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-35810 device types and may have slight physical variations in relation to case size. The presence of this information should not be deemed as permitting substitution of generic-industry types for MIL-M-38510 types or as a waiver of any of the provisions of MIL-PRF-38535.

Military device type	Generic-industry type
01	10501
02	10502
03	10505
04	10506
05	10507
06	10509

- 6.8 Environmental variations versus device testing and operation. Different nominal values of air velocity and temperature may be selected for device tests and in-system operation. However, when this occurs or when air velocity and temperature gradients cause a shift in device junction temperature greater than $\pm 2^{\circ}$ C, the device output voltages and input forcing functions assume significant new values. Based on the typical thermal resistance curve of figure 7, the new values can be determined from the procedures in 6.8.1.
 - 6.8.1 Procedures for determining new values of device output voltage and input forcing function.
 - a. Determine device power dissipation by power supply drain current and the following equation: P_D (max) = I_{EE} (max) x V_{EE} + 9.7 mW x number of outputs.
 - b. Using this maximum power dissipation, enter figures 4 and 5 as applicable for the case outline and determine the junction temperature deviation (ΔT_J) for the selected nominal air velocity.
 - c. If the actual ambient test or system temperatures are other than those specified (-55°C, 25°C, 125°C), the difference between the actual and specified values shall be algebraically added to the ΔT_J for the air velocity determined in (b) above to obtain a ΔT_J (total).

d. Using the appropriate adjustment coefficients from figure 6 multiplied by the ΔT_J (total), determine the correct amount of compensation to be applied to each of the forcing functions and voltage limits under the actual test or system conditions. (see 6.8.2 for two examples of determining compensation)

6.8.2 Test limit compensation examples.

a. A device which has a power dissipation of 100 mW in case F is to be tested under a zero airflow condition. on figure 5, ΔT_J between 500 linear ft/min and zero airflow is +4°C. In order to adjust the various parameter limits, use figure 6 which defines the limit adjustment coefficients for ΔT_J . To adjust $V_{OH}(max)$ at -55°C, use the + ΔT_J column of the -55°C portion of figure 6 and locate the coefficient corresponding to $V_{OH}(max)$. This value is 1.38 mV/°C. Multiply the ΔT_J by the coefficient and algebraically add it to the -55°C $V_{OH}(max)$ limit from table III.

```
V_{OH}(max) (adjusted limit) = (+4°C) x (1.38 mV/°C) + (-830 mV) 
= 5.52 mV -830mV = -824.48 mV 
Use -824 mV
```

Follow the same procedure to adjust the remaining parameters at -55°C as well as all parameters at 25°C and 125°C.

b. A device with a power dissipation of 150 mW in case E is to be tested at an airflow of 200 linear ft/min and the 25°C testing is to be accomplished at an ambient temperature of +20°C. On figure 4 ΔT_J due to airflow is +2°C. The ΔT_J due to ambient temperature change is -5°C (25-20). Therefore the total ΔT_J = -5 +2 = -3°C. Using figure 6 find the 25°C, - ΔT_J column. To adjust the V_{OL} (max) locate the limit coefficient corresponding to V_{OL} (max) for a negative ΔT_J , this value is 0.44 mV/°C. Multiply the ΔT_J by the coefficient and algebraically add it to the +25°C V_{OL} (max) limit from table III.

```
V_{OL} (max) (adjusted limit) = (-3°C) x (0.44 mV/°C) + (-1620 mV)
= 1.32 mV - 1620 mV = -1621.32 mV
Use - 1621 mV
```

Follow the same procedure to adjust the remaining parameters at +25°C.

- 6.8.3 <u>Maximum junction temperature</u>. Under no circumstance should the devices be operated in an environment such that T_J as calculated by the following equation be allowed to exceed the maximum junction temperature of 1.3. $T_J = T_C + \theta J_A$ (TYP) x P_D (max). Typical junction to ambient thermal resistance θJ_A (TYP) varies as a function of air velocity as shown on figure 7.
- 6.9 <u>Changes from previous issue.</u> Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

Army - CR

Navy - EC

Air Force - 11

DLA - CC

Preparing activity:

DLA - CC

(Project 5962-2068)

Review activities:

Army - MI, SM

Navy - AS, CG, MC, SH, TD

Air Force - 03, 19, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.