

QUALIFICATION
REQUIREMENTS
REMOVED

MIL-M-38510/441A
9 August 1983
SUPERSIDING
MIL-M-38510/441(USAF)
26 July 1979

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, LOW POWER SCHOTTKY TTL,
BUS TRANSCEIVER, MONOLITHIC SILICON

INACTIVE FOR NEW DESIGN AFTER DATE OF THIS REVISION

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

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic silicon, Schottky TTL bus transceiver microcircuits. One product assurance class and a choice of case outlines and lead finishes are provided for each type and are reflected in the complete part number.

1.2 Part number. The part number shall be in accordance with MIL-M-38510 with the exception that the "JAN" or "J" certification mark shall not be used.

1.2.1 Device types. The device types shall be as follows:

<u>Device type</u>	<u>Circuit</u>
01	Quad two-input bus transceiver (open collector outputs)
02	Quad two-input bus transceiver (open collector outputs) with parity
03	Quad bus transceiver (open collector outputs) with parity
04	Quad two-input bus transceiver (three-state outputs)
05	Quad two-input bus transceiver (three-state outputs) with parity
06	Quad bus transceiver (three-state outputs) with parity

1.2.2 Device class. The device class shall be the product assurance level as defined in MIL-M-38510.

1.2.3 Case outline. The case outline shall be designated as follows:

<u>Outline letter</u>	<u>Case outline (see MIL-M-38510, appendix C)</u>
J	D-3 (24-pin, 1/2" x 1-1/4"), dual-in-package
Z	F-8 (24-pin, 1/4" x 3/8"), flat package
R	D-8 (20-pin, 1/4" x 1-1/16"), dual-in-line package
S	F-9 (20-pin, 1/4" x 1/2"), flat package

1.3 Absolute maximum ratings.

DC voltage applied to outputs for disabled output state - - - - -	-0.5 V dc to V _{CC} maximum
Supply voltage range - - - - -	-0.5 V dc to +7.0 V dc
Input voltage range - - - - -	-0.5 V dc at +5.5 V dc
Storage temperature range - - - - -	-65°C to +150°C
Maximum power dissipation, (P _D) ^{1/} :	
Device types 01, 02, 03, 04, 05, 06 - - - - -	1.0 W
DC output current, into outputs:	
Receiver and parity - - - - -	30 mA
DC output current, into outputs:	
Bus (types 01, 02, 03) - - - - -	200 mA

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

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Rome Air Development Center (RBE-2), Griffiss AFB, NY 13441, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

DC output current, into outputs:	
Bus (types 04, 05, 06)- - - - -	100 mA
DC input current- - - - -	-30 mA to +5 mA
Case operating temperature range (T_C) -	-55°C to +125°C
Lead temperature (soldering, 10 seconds)-	+300°C
Thermal resistance, junction-to-case (θ_{JC}):- - - - -	0.09°C/mW for flat package 0.08°C/mW for dual-in-line package
Junction temperature (T_J) - - - - -	+175°C

1.4 Recommended operating conditions.

Supply voltage range- - - - -	4.5 V dc minimum to 5.5 V dc maximum
Minimum high-level input voltage (all except bus receiver type 01) - - -	2.0 V dc
Minimum high-level input voltage (bus receiver type 01)- - - - -	2.4 V dc
Maximum low level input voltage (all except bus receiver type 01) - - -	0.8 V dc
Maximum low level input voltage (bus receiver type 01)- - - - -	1.5 V dc

Device type

Setup time, $t_{(setup)}$	<u>01/02</u>	<u>03</u>	<u>04/05</u>	<u>06</u>
Data to driver clock - - - - -	25 ns	25 ns	15 ns	15 ns
Select to driver clock - - - - -	33 ns		28 ns	
Bus receiver to latch enable - - - -	21 ns	21 ns	15 ns	15 ns
Hold time $t_{(hold)}$				
Data to driver clock - - - - -	8 ns	8 ns	8 ns	8 ns
Select to driver clock - - - - -	8 ns		8 ns	
Bus receiver to latch enable - - - -	7 ns	7 ns	6 ns	6 ns
Pulse width, $t_{(pw)}$	28 ns	28 ns	20 ns	20 ns
Driver clock - - - - -				

2. APPLICABLE DOCUMENTS

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

SPECIFICATION

MILITARY

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

STANDARD

MILITARY

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

(Copies of specifications, standards, handbooks, drawings, and publications required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 Detail specification. The individual item requirements shall be in accordance with MIL-M-38510, and as specified herein.

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

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

3.2.2 Logic diagram. The logic diagram shall be as specified on figure 3.

3.2.3 Truth tables. The truth tables shall be as specified on figure 2.

3.2.4 Case outlines. Case outlines shall be as specified in MIL-M-38510 and in 1.2.3 herein.

3.3 Lead material and finish. The lead material and finish shall be in accordance with MIL-M-38510 (see 6.5).

3.4 Electrical performance characteristics. The electrical performance characteristics are as specified in table I, and apply over the full recommended case operating temperature range, unless otherwise specified.

3.5 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table III.

3.6 Marking. Marking shall be in accordance with MIL-M-38510 and 1.2 herein. At the option of the manufacturer, marking of the country of origin may be omitted from the body of the microcircuit, but shall be retained on the initial container. The "JAN" or "J" certification mark shall not be used.

3.7 Manufacturer eligibility. To be eligible to supply microcircuits to this specification, a manufacturer shall have a manufacturer certification in accordance with MIL-M-38510 for at least one line; not necessarily the line producing the device type described herein.

3.8 Certification. Certification in accordance with MIL-M-38510 is not required for this device.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-M-38510 and methods 5005 and 5007, as applicable, of MIL-STD-883, except as modified herein.

4.2 Qualification inspection. Qualification inspection is not required.

4.3 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection. The following additional criteria shall apply:

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

(1) Test condition D or E, using the circuit shown on figure 5, or equivalent.

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

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. The percent defective allowable (PDA) for class B devices shall be 10 percent based on failures from group A, subgroup 1 test after cooldown as final electrical test in accordance with method 5004 of MIL-STD-883, and with no intervening electrical measurements. If interim electrical parameter tests are performed prior to burn-in, failures resulting from pre burn-in screening may be excluded from the PDA. If interim electrical parameter tests prior to burn-in are omitted, then all screening failures shall be included in the PDA. The verified failures of group A, subgroup 1, after burn-in divided by the total number of devices submitted for burn-in in that lot shall be used to determine the percent defective for that lot, and the lot shall be accepted or rejected based on the PDA for the applicable device class.

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-M-38510, and as specified herein. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4). Generic test data (see 6.6) may be used to satisfy the requirements for groups C and D inspections. Quality conformance inspection shall be completed on the specific devices covered by this specification before they are shipped.

4.4.1 Group A inspection. Group A inspection shall be in accordance with table I of method 5005 of MIL-STD-883 and as follows:

- a. Tests shall be as specified in table II herein.
- b. Subgroups 4, 5, and 6 of table I, method 5005 of MIL-STD-883 shall be omitted.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of method 5005 of MIL-STD-883. Electrical parameters shall be as specified in table II herein.

4.4.3 Group C inspection. Group C inspection shall be in accordance with table III of method 5005 of MIL-STD-883 and as follows:

- a. End-point electrical test parameters shall be as specified in table II herein.
- b. Subgroups 3 and 4 shall be added to the group C inspection requirements for class B devices and shall consist of the tests, conditions, and limits specified for subgroups 10 and 11 of group A.
- c. Steady-state life test (method 1005 of MIL-STD-883) conditions:
 - (1) Test condition D or E, using the circuit shown on figure 5, or equivalent.
 - (2) $T_A = +125^\circ\text{C}$ minimum.
 - (3) Test duration: 1,000 hours, except as permitted by appendix B of MIL-M-38510.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table IV of method 5005 of MIL-STD-883. End-point electrical parameters shall be as specified in table II herein.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions	Device	Limits		
				Min	Max	Unit
High-level output voltage bus outputs	V _{OH1}	V _{CC} = 4.5 V dc; I _{OH} = -15 mA	04, 05, 06	2.4		V
High-level output voltage, receiver outputs	V _{OH2}	V _{CC} = 4.5 V dc; I _{OH} = -1 mA	01, 02, 03, 04, 05, 06	2.4		V
High-level output voltage, parity output	V _{OH3}	V _{CC} = 4.5 V dc; I _{OH} = -660 μ A	02, 03, 05, 06	2.5		V
Low-level output voltage bus outputs	V _{OL1}	I _{OL} = 40 mA			0.5	V
	V _{OL3}	V _{CC} = 4.5 V dc; I _{OL} = 70 mA	01, 02, 03		0.7	V
	V _{OL5}	I _{OL} = 100 mA			0.8	V
Low-level output voltage, bus outputs	V _{OL2}	V _{CC} = 4.5 V dc; I _{CL} = 24 mA	04, 05, 06		0.4	V
	V _{OL4}	I _{OL} = 48 mA			0.5	V
Low-level output voltage, receiver/parity outputs	V _{OL6}	I _{OL} = 4 mA	01, 02, 03, 04, 05, 06		0.4	V
	V _{OL7}	V _{CC} = 4.5 V dc; I _{OL} = 8 mA	05, 06		0.45	V
	V _{OL8}	I _{OL} = 12 mA			0.5	V
Input clamp voltage	V _{IC}	V _{CC} = 4.5 V; I _{IN} = -18 mA	01, 02, 03, 04, 05, 06		-1.2	V
Low-level input current, BE, RLE	I _{IL1}	V _{CC} = 5.5 V; V _{IN} = 0.4 V	01, 02, 03		-0.36	mA
Low-level input current, BE, RLE	I _{IL2}	V _{CC} = 5.5 V; V _{IN} = 0.4 V	04, 05, 06		-0.72	mA
Low-level input current, all other inputs	I _{IL3}	V _{CC} = 5.5 V; V _{IN} = 0.4 V	01, 02, 03, 04, 05, 06		-0.36	mA
High-level input current	I _{IH1}	V _{CC} = 5.5 V; V _{IN} = 2.7 V	01, 02, 03, 04, 05, 06		20	μ A
High-level input current	I _{IH2}	V _{CC} = 5.5 V; V _{IN} = 5.5 V	01, 02, 03, 04, 05, 06		100	μ A
High impedance state output leakage current low, receiver outputs	I _{ZL1}	V _{CC} = 5.5 V; V _{OUT} = 0.4 V	01, 03 04, 06		-20 -50	μ A
High impedance state output leakage current low, bus outputs	I _{ZL2}	V _{CC} = 5.5 V; V _{OUT} = 0.4 V	01, 02 03		-50	μ A

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions	Device	Limits	Unit
				Min	Max
High impedance state output leakage current low, bus outputs	I _{ZL3}	V _{CC} = 5.5 V; V _{OUT} = 0.4 V	04,05 06	-200	μA
High impedance state output leakage current high, receiver outputs	I _{ZH1}	V _{CC} = 5.5 V; V _{OUT} = 2.4 V	01,03 04,06	20 50	μA
High impedance state output leakage current high, bus outputs	I _{ZH2}	V _{CC} = 5.5 V; V _{OUT} = 4.5 V	01,02 03	200	μA
High impedance state output leakage current high, bus outputs	I _{ZH3}	V _{CC} = 5.5 V; V _{OUT} = 4.5 V	04,05 06	100	μA
	I _{ZH4}	V _{OUT} = 2.4 V		50	μA
High impedance state output leakage current high, bus outputs with power off	I _{ZH5}	V _{CC} = 0 V; V _{OUT} = 4.5 V	01,02, 03,04, 05,06	100	μA
Short-circuit output current, bus outputs	I _{OS1}	V _{CC} = 5.5 V; V _{OUT} = 0 V	04,05 06	-50	-225 mA
Short-circuit output current, receiver outputs	I _{OS2}	V _{CC} = 5.5 V; V _{OUT} = 0 V	01,02, 03,04, 05,06	-30	-130 mA
Short-circuit output current, parity outputs	I _{OS3}	V _{CC} = 5.5 V; V _{OUT} = 0 V	02,03, 05,06	-20	-100 mA
Supply current	I _{CC}	V _{CC} = 5.5 V; All inputs = GND	01,02	105	mA
Supply current	I _{CC}	V _{CC} = 5.5 V; All inputs = GND	03,05	110	mA
Supply current	I _{CC}	V _{CC} = 5.5 V; All inputs = GND	04	95	mA
Supply current	I _{CC}	V _{CC} = 5.5 V; All inputs = GND	06	95	mA
To low level, from driver clock to bus out	t _{PHL1}	BUS outputs, device types 01,02,03: C _L = 50 pF R _L = 50Ω	01,02, 03 04,05, 06	40 36	ns ns

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions	Device	Limits		
				Min	Max	Unit
To low level, from bus to receiver out	tPHL2	IBUS outputs, device types 04,05,06: $C_L = 50 \text{ pF}$ $R_L = 130\Omega$	01,02, 03		37	ns
			04,05, 06		30	ns
To low level, from latch enable to receiver out	tPHL3	Receiver/parity outputs, device types 01,02,03,04,05,06: $C_L = 15 \text{ pF}$ $R_L = 2 \text{ k}\Omega$ $V_{CC} = 5.0 \text{ V}$ all device types	01,02, 03		37	ns
			04,05, 06		30	ns
To low level, from data to odd parity out	tPHL4	IBUS outputs, device types 01,02,03: $C_L = 50 \text{ pF}$ $R_L = 50\Omega$	02,03 05,06		40	ns
			02,03		40	ns
To low level, from bus to odd parity out	tPHL5	IBUS outputs, device types 04,05,06: $C_L = 50 \text{ pF}$ $R_L = 130\Omega$	05,06		36	ns
			02,03		40	ns
To low level, from latch enable to odd parity out	tPHL6	Receiver/parity outputs, device types 01, 02, 03, 04, 05, 06: $C_L = 15 \text{ pF}$ $R_L = 2 \text{ k}\Omega$	01,02, 03		40	ns
			04,05, 06		36	
To high level, from driver clock to bus out	tPLH1	$V_{CC} = 5.0 \text{ V}$ all device types	01,02, 03		40	ns
			04,05, 06		36	ns
To high level, from bus to receiver out	tPLH2		01,02, 03		37	ns
			04,05, 06		33	ns
To high level, from latch enable to receiver out	tPLH3		01,02, 03		37	ns
			04,05 06		33	ns
To high level, from data to odd parity out	tPLH4		02,03		40	ns
			05,06		46	ns
To high level, from bus to odd parity out	tPLH5		02,03		40	ns
			05,06		36	ns

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions	Device	Limits	
				Min	Max
					Unit
To high level, from latch enable to odd parity out	tPLH6	BUS outputs, device types 01,02,03: $C_L = 50 \text{ pF}$ $R_L = 50\Omega$	02,03 05,06	40 36	ns
To low level, from bus enable to bus out	tpZL1	BUS outputs, device types 04,05,06: $C_L = 50 \text{ pF}$ $R_L = 130\Omega$	01,02, 03,04, 05,06	26	ns
To low level, from output enable to receiver out	tpZL2	Receiver/parity outputs, device types 01, 02, 03, 04, 05, 06: $C_L = 15 \text{ pF}$ $R_L = 2 \text{ k}\Omega$	01,03 04,06	28 26	ns
To high level, from bus enable to bus out	tpZH1	$V_{CC} = 5.0 \text{ V}$ all device types	04,05, 06	26	ns
To high level, from output enable to receiver out	tpZH2		01,03 04,06	28 26	ns
To high impedance, from bus enable to bus out (low)	tPLZ1		01,02, 03 04,05, 06	26 21	ns
To high impedance, from output enable to receiver out (low)	tPLZ2		01,03 04,06	28 26	ns
To high impedance, from bus enable to bus out (high)	tPHZ1		04,05, 06	21	ns
To high impedance, from output enable to receiver out (high)	tPHZ2		01,03 04,06	28 26	ns

TABLE II. Electrical test requirements.

MIL-STD-883 test requirements	Subgroups (see table III) Class B devices
Interim electrical parameters (pre burn-in) (method 5004)	1
Final electrical test parameters (method 5004)	1*, 2, 3, 7, 9, 10, 11
Group A test requirements (method 5005)	1, 2, 3, 7, 8, 9, 10, 11
Groups C end-point electrical parameters (method 5005)	N/A
Additional electrical subgroups for group C periodic inspections	N/A
Group D end point electrical parameters (method 5005)	1, 2, 3

*PDA applies to subgroup 1 (see 4.3c).

4.5 Methods of inspection. Methods of inspection shall be specified as follows.

4.5.1 Voltage and current. All voltages given are referenced to the microcircuit ground terminal. Currents given are conventional and positive when flowing into the referenced terminal.

5. PACKAGING

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

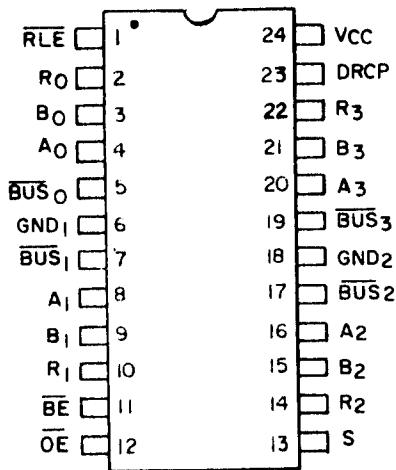
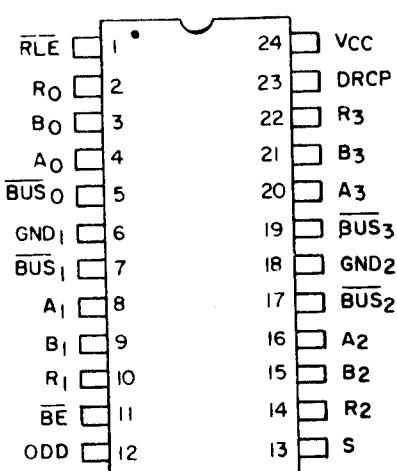
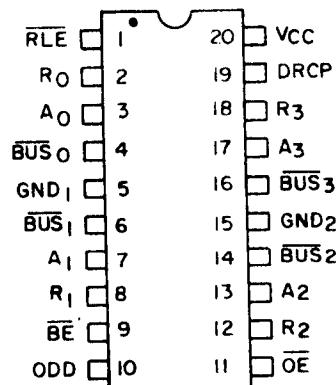
6. NOTES

6.1 Notes. The notes specified in MIL-M-38510 are applicable to this specification.

6.2 Intended use. Microcircuits conforming to this specification are intended for logistic support of existing equipment.

6.3 Ordering data. The contract or purchase order should specify the following:

- a. Complete part number (see 1.2).
- b. Requirements for delivery of one copy of the quality conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
- c. Requirements for certificate of compliance, if applicable.
- d. Requirements for notification of change of product or process to the contracting activity, if applicable.
- e. Requirements for packaging and packing.
- f. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements shall not affect the part number. Unless otherwise specified, these requirements shall not apply to direct purchase by or direct shipment to the Government.

Device types 01, 04Device types 02, 05Device types 03, 06FIGURE 1. Terminal connections.

Device types 01, 04

INPUTS							INTERNAL TO DEVICE		BUS	OUTPUT	FUNCTION
S	A _i	B _i	DRCP	BE	RLE	OE	D _i	Q _i	BUS _i	R _i	
X	X	X	X	H	X	X	X	X	Z	X	Driver output disable
X	X	X	X	X	X	H	X	X	X	Z	Receiver output disable
X	X	X	X	H	L	L	X	L	L	H	Driver output disable and receive data via Bus input
X	X	X	X	H	L	L	X	H	H	L	Driver output disable and receive data via Bus input
X	X	X	X	X	H	X	X	NC	X	X	Latch received data
L	L	X	↑	X	X	X	L	X	X	X	
L	H	X	↑	X	X	X	H	X	X	X	
H	X	L	↑	X	X	X	L	X	X	X	Load driver register
H	X	H	↑	X	X	X	H	X	X	X	Load driver register
X	X	X	L	X	X	X	NC	X	X	X	No driver clock restrictions
X	X	X	H	X	X	X	NC	X	X	X	No driver clock restrictions
X	X	X	X	L	X	X	L	X	H	X	Drive Bus
Y	X	X	X	L	X	X	H	X	L	X	Drive Bus

H = HIGH
L = LOWZ = HIGH Impedance
NC = No changeX = Don't care
↑ = LOW to HIGH transition

I = 0, 1, 2, 3

Device type 02, 05

INPUTS							INTERNAL TO DEVICE		BUS	OUTPUT	FUNCTION
S	A _i	B _i	DRCP	BE	RLE	OE	D _i	Q _i	BUS _i	R _i	
X	X	X	X	H	X	X	X	X	Z	X	Driver output disable
X	X	X	X	X	X	H	X	X	X	Z	Receiver output disable
X	X	X	X	H	L	L	X	L	L	H	Driver output disable and receive data via Bus input
X	X	X	X	H	L	L	X	H	H	L	Driver output disable and receive data via Bus input
X	X	X	X	X	H	X	X	NC	X	X	Latch received data
L	L	X	↑	X	X	X	L	X	X	X	
L	H	X	↑	X	X	X	H	X	X	X	
H	X	L	↑	X	X	X	L	X	X	X	Load driver register
H	X	H	↑	X	X	X	H	X	X	X	Load driver register
X	X	X	L	X	X	X	NC	X	X	X	No driver clock restrictions
X	X	X	H	X	X	X	NC	X	X	X	No driver clock restrictions
X	X	X	X	L	X	X	L	X	H	X	Drive Bus
X	X	X	X	L	X	X	H	X	L	X	Drive Bus

H = HIGH
L = LOWZ = HIGH Impedance
NC = No changeX = Don't care
↑ = LOW to HIGH transition

I = 0, 1, 2, 3

BE	ODD PARITY OUTPUT
L	ODD = A ₀ ⊕ A ₁ ⊕ A ₂ ⊕ A ₃
H	ODD = Q ₀ ⊕ Q ₁ ⊕ Q ₂ ⊕ Q ₃

FIGURE 2. Truth table.

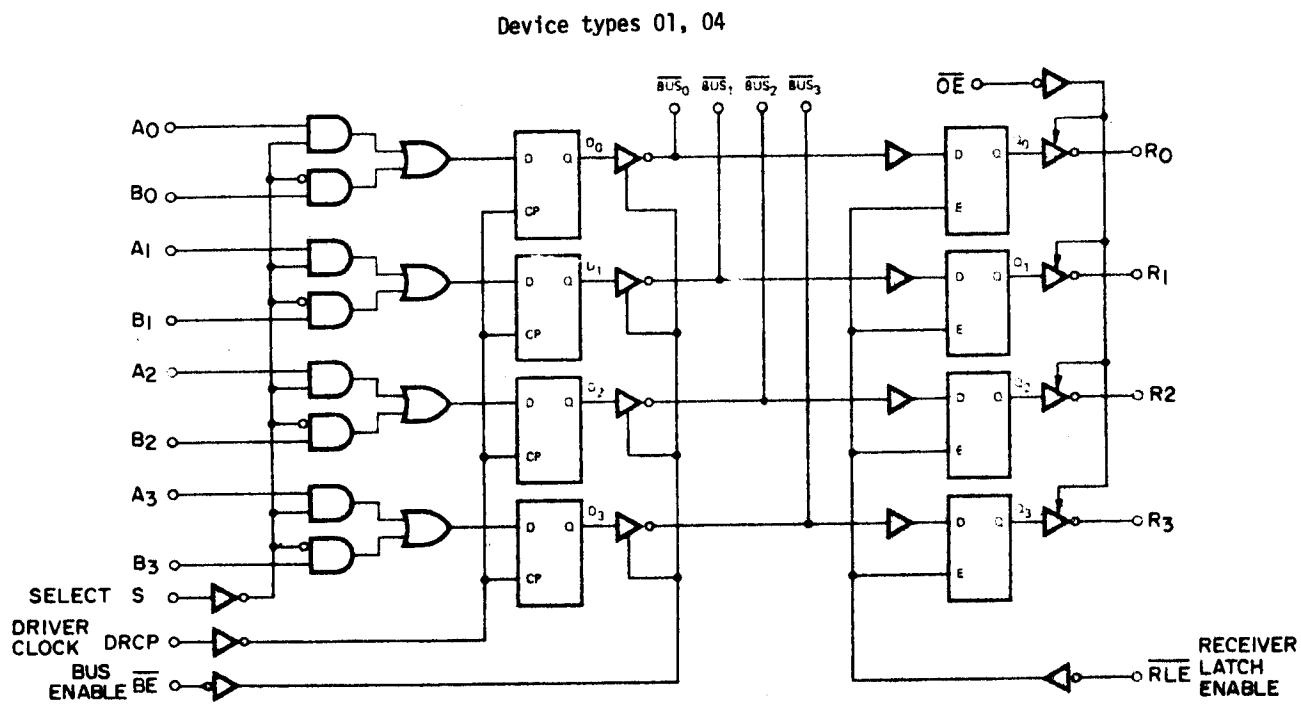
Device types 03, 06

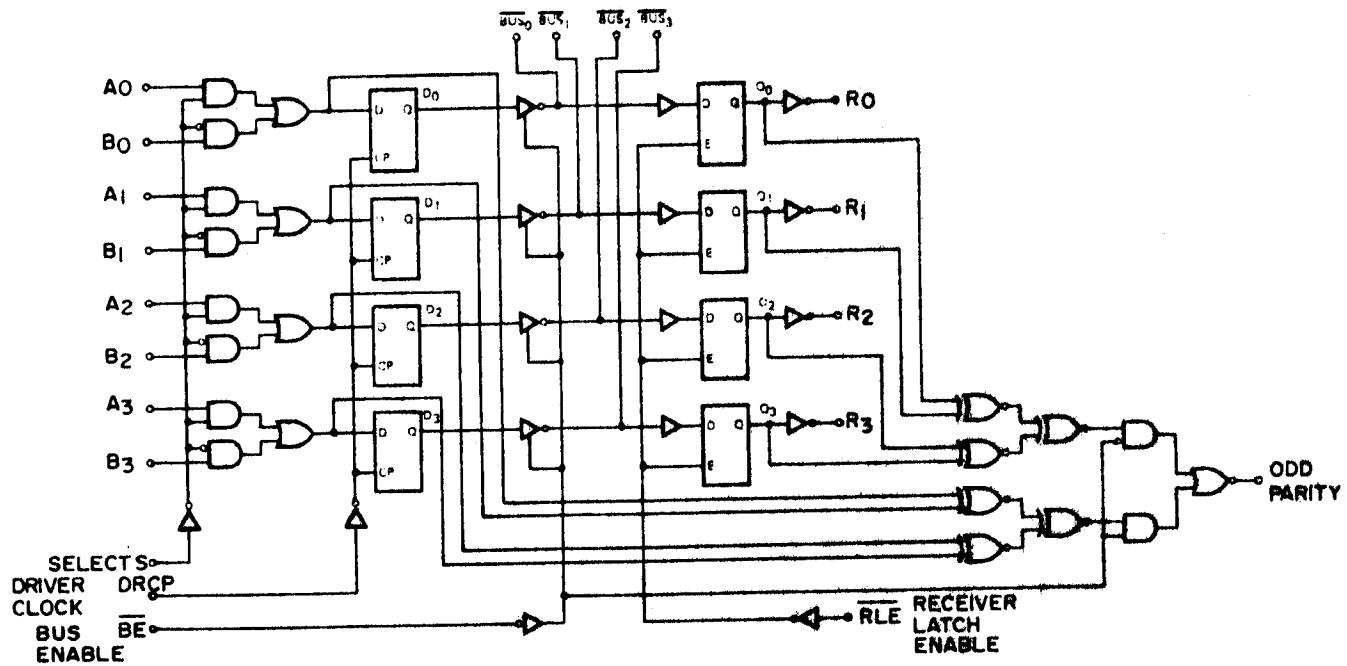
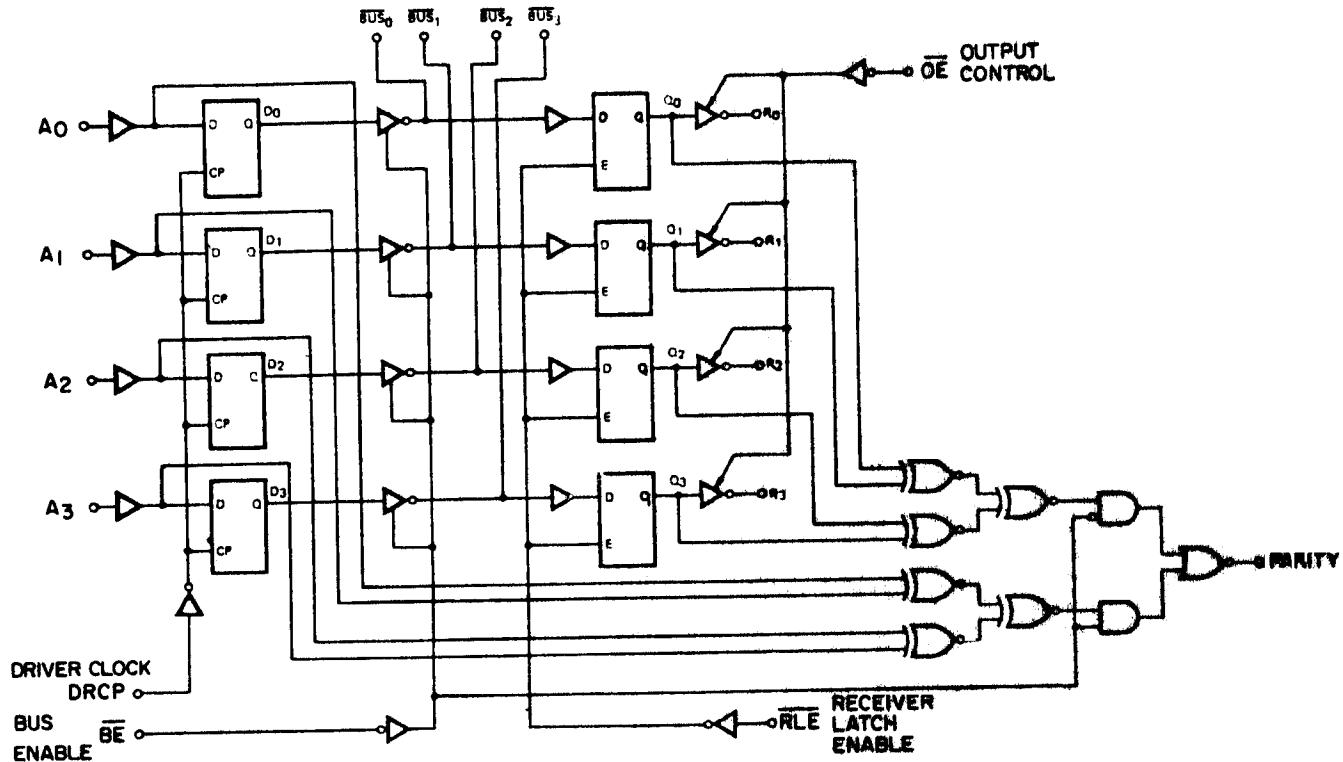
INPUTS						INTERNAL TO DEVICE		BUS	OUTPUT	FUNCTION
A _i	DRCP	BE	RLE	OE	D _i	O _i	B _i	R _i		
X	X	H	X	X	X	X	H	X	Driver output disable	
X	X	X	X	H	X	X	X	Z	Receiver output disable	
X	X	H	L	L	X	L	L	H	Driver output disable and receive data via Bus input	
X	X	H	L	L	X	H	H	L		
X	X	X	H	X	X	NC	X	X	Latch received data	
L	↑	X	X	X	L	X	X	X	Load driver register	
H	↑	X	X	X	H	X	X	X		
X	L	X	X	X	NC	X	X	X	No driver clock restrictions	
X	H	X	X	X	NC	X	X	X		
X	X	L	X	X	L	X	H	X	Drive Bus	
X	X	L	X	X	H	X	L	X		

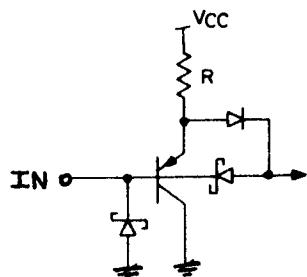
H = HIGH Z = High Impedance X = Don't Care i = 0, 1, 2, 3
 L = LOW NC = No Change ↑ = LOW-to-HIGH Transition

BE	ODD PARITY OUTPUT
L	ODD = A ₀ • A ₁ ⊕ A ₂ • A ₃
H	ODD = Q ₀ • Q ₁ ⊕ Q ₂ • Q ₃

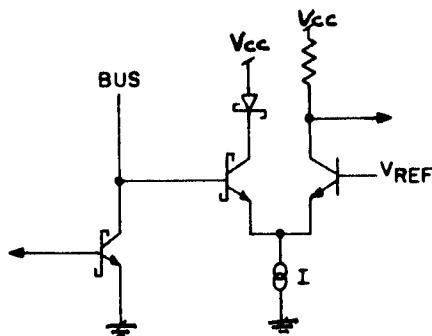
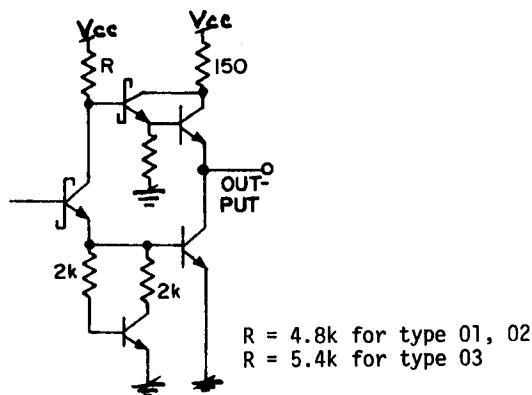
FIGURE 2. Truth table - Continued.

FIGURE 3. Logic diagram.

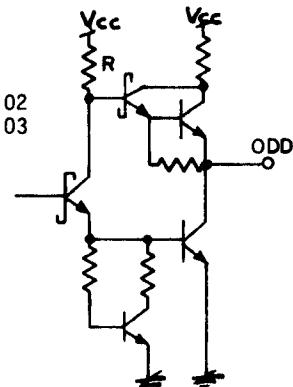
Device type 02, 05Device type 03, 06FIGURE 3. Logic diagram - Continued.

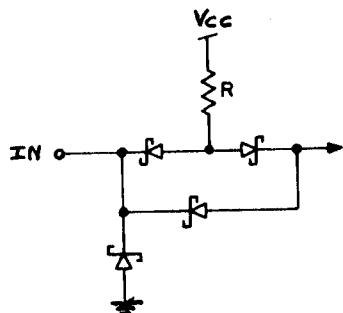
Input/output equivalent circuitsDevice type 01, 02, 03Inputs other than BUSR value (Ω)Device type

<u>Input</u>	<u>01</u>	<u>02</u>	<u>03</u>
A	10k	10k	5k
B	10k	10k	-
S	10k	10k	-
DRCP	10k	10k	10k
RLE	5k	5k	5k
BE	3.3k	3.3k	3.3k
OE	5k	-	5k

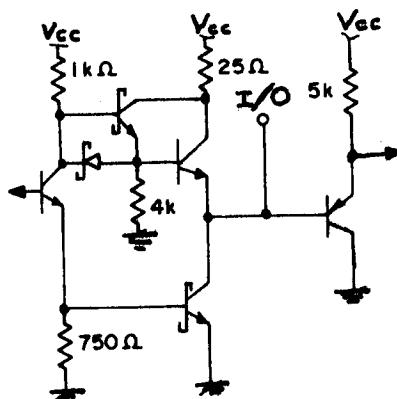
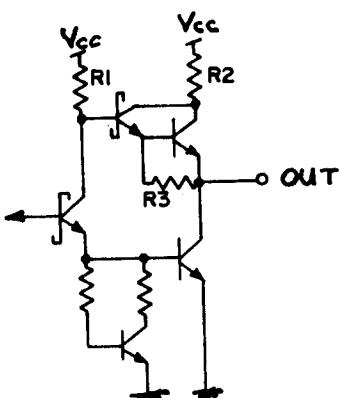
Device type 01, 02 and 03BUS I/O portReceiver output

$R = 2.7\text{ k}$ for 02
 $R = 4.8\text{ k}$ for 03

odd parity outputFIGURE 4. Schematic circuits.

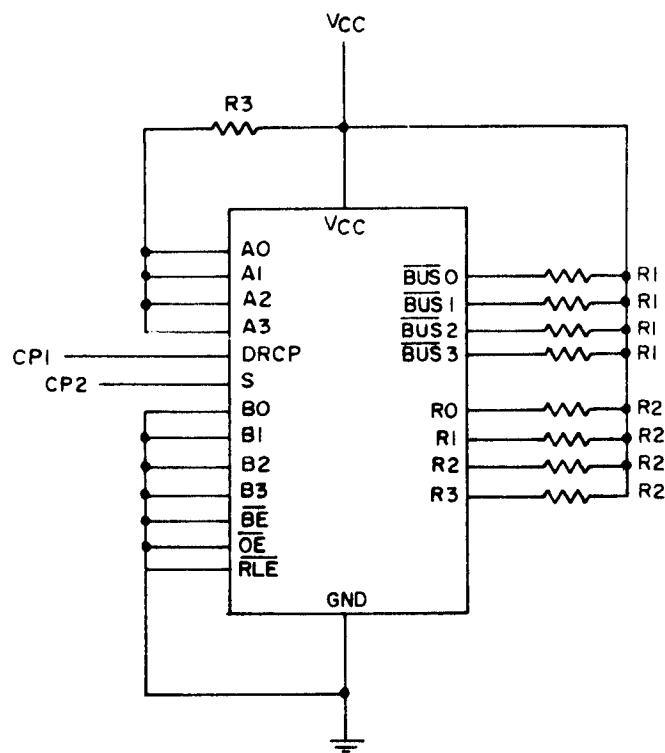


<u>Input</u>	<u>Type</u>
$R = 20 \text{ k}\Omega$ for A, DRCP	04, 05, and 06
B, S	04, 05
$\overline{\text{OE}}$	04, 06
$\overline{\text{BE}}, \overline{\text{RLE}}$	04, 05, 06

BUS I/O port type 04, 05 and 06

<u>Receiver</u>	<u>Odd parity</u>
<u>type 04, 05 and 06</u>	<u>type 05, 06</u>
R_1	$5.4 \text{ k}\Omega$
R_2	75Ω
R_3	$4\text{k}\Omega$

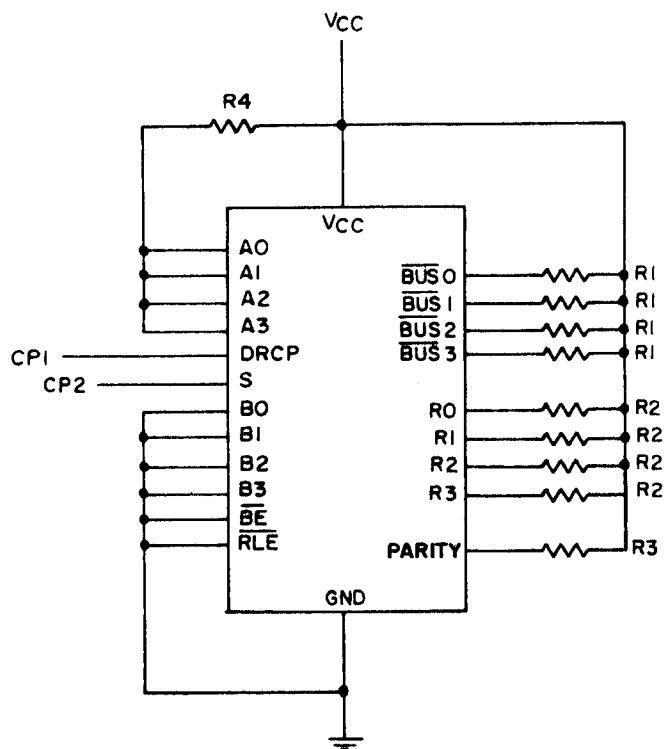
Receiver and odd parity outputsFIGURE 4. Schematic circuits - Continued.

Device type 01, 04

NOTES:

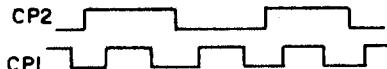
1. $V_{CC} = 5.5 \text{ V}$
2. $R_1 = 140\Omega \pm 5\%$; $R_2 = 1.4 \text{ k}\Omega \pm 5\%$; $R_3 = 1 \text{ k}\Omega \pm 5\%$.
3. $CP1 \leq 1 \text{ MHz} \pm 10\%$; duty cycle = $50 \pm 10\%$; $V_{IH} = 2.0 \text{ V to } 5.5 \text{ V}$;
 $V_{IL} = -0.5 \text{ V to } 0.8 \text{ V}$.
 $CP2 = \frac{CP1}{2}$
 $V_{IH} = 2.0 \text{ V to } 5.5 \text{ V}$;
 $V_{IL} = -0.5 \text{ V to } 0.8 \text{ V}$

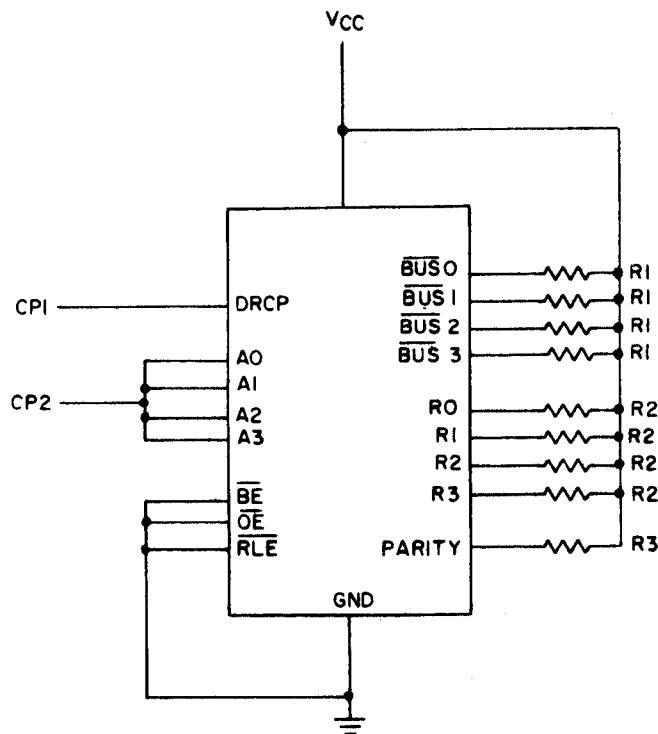
FIGURE 5. Burn-in and life test circuit.

Device types 02, 05

NOTES:

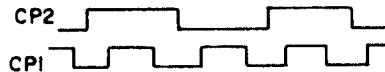
1. $V_{CC} = 5.5 \text{ V}$
2. $R_1 = 230\Omega \pm 5\%$; $R_2 = R_3 = 1.4 \text{ k}\Omega \pm 5\%$; $R_4 = 1 \text{ k}\Omega \pm 5\%$.
3. $CP1 \leq 1 \text{ MHz} \pm 10\%$; duty cycle = $50 \pm 10\%$; $V_{IH} = 2.0 \text{ V to } 5.5 \text{ V}$;
 $V_{IL} = -0.5 \text{ V to } 0.8 \text{ V}$
 $CP2 = CP1$
 $V_{IH}^2 = 2.0 \text{ V to } 5.5 \text{ V}$
 $V_{IL} = -0.5 \text{ V to } 0.8 \text{ V}$.

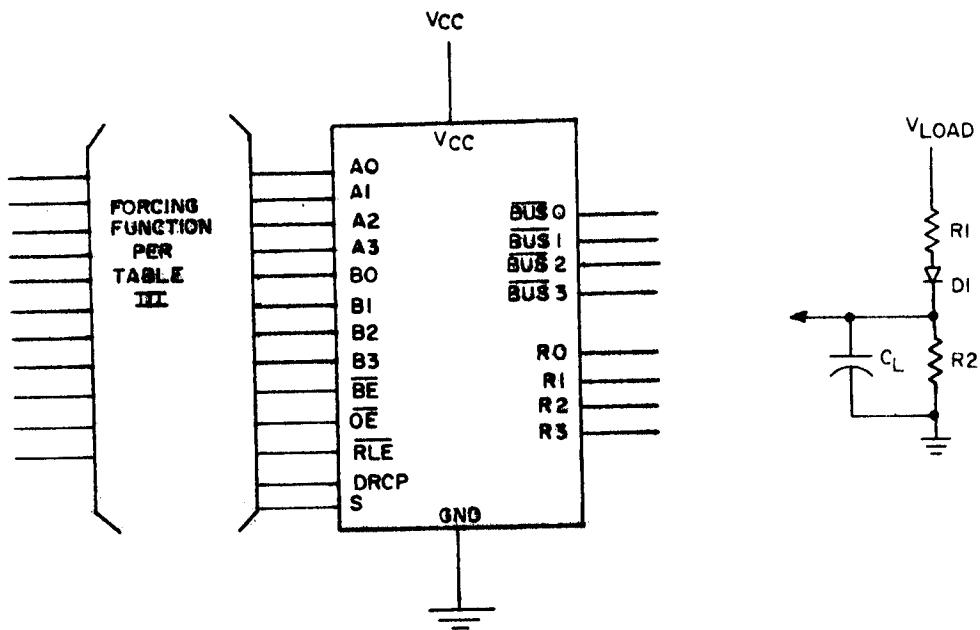
FIGURE 5. Burn-in and life test circuit - Continued.

Device types 03, 06

NOTES:

1. $V_{CC} = 5.5 \text{ V}$.
2. $R_1 = 230\Omega \pm 5\%$; $R_2 = R_3 = 1.4 \text{ k}\Omega \pm 5\%$.
3. $CP1 \leq 1 \text{ MHz} \pm 10\%$; duty cycle = $50 \pm 10\%$; $V_{IH} = 2.0 \text{ V to } 5.5 \text{ V}$;
 $V_{IL} = -0.5 \text{ V to } 0.8 \text{ V}$
 $CP2 = \frac{CP1}{2}$
 $V_{IH} = 2.0 \text{ V to } 5.5 \text{ V}$
 $V_{IL} = -0.5 \text{ V to } 0.8 \text{ V}$

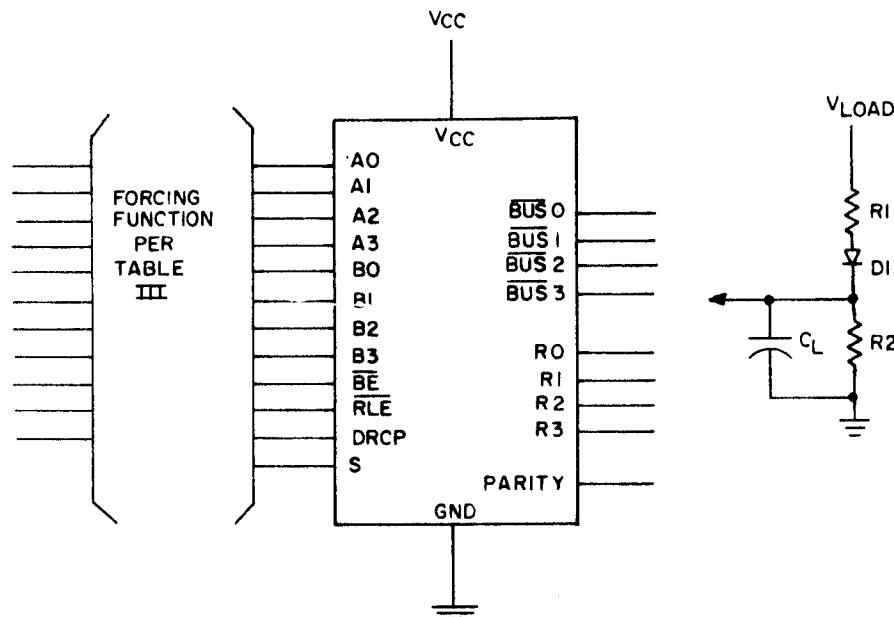
FIGURE 5. Burn-in and life test circuit - Continued.

Device types 01, 04

NOTES:

- $D_1 = 1N3064$ or equivalent.
- $R_1 = 51\Omega \pm 2\%$, type 01 "BUS" outputs
 $R_1 = 51\Omega \pm 2\%$, type 04 "BUS" outputs
 $R_1 = 330\Omega \pm 2\%$, type 01 and 02 "R" outputs
- $R_2 = 120\Omega \pm 2\%$, type 01 "BUS" outputs
 $R_2 = 120\Omega \pm 2\%$, type 04 "BUS" outputs
 $R_2 = 2.4\text{ k}\Omega \pm 2\%$, types 01 and 04 "R" outputs
- $C_L = 50\text{ pF} \pm 10\%$ and includes probe and jig capacitance.
- $V_{LOAD} = 5.0\text{ V}$ for device type 01 BUS outputs.
 $V_{LOAD} = 2.5\text{ V}$ for device types 01, 04 R_X outputs and type 04 BUS outputs.

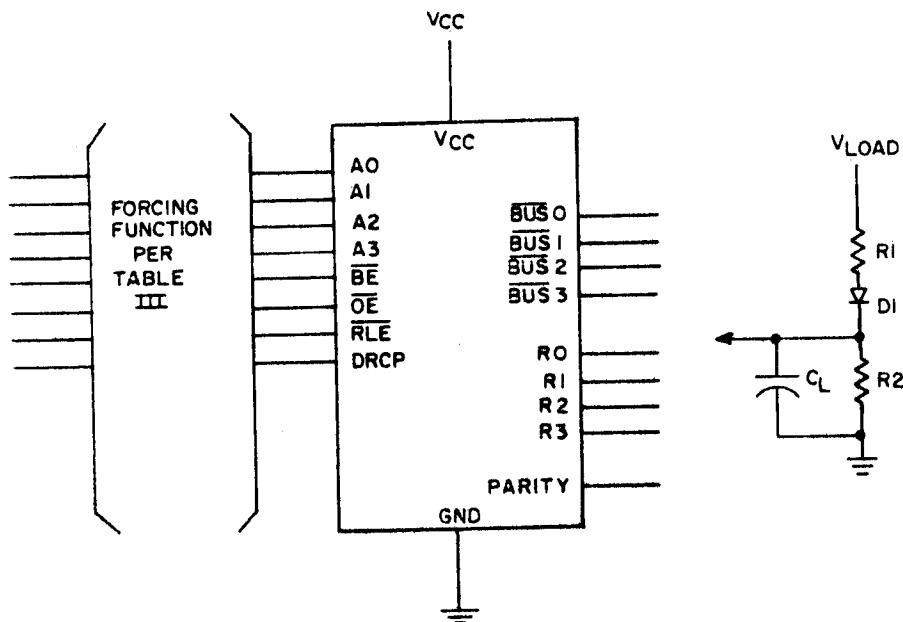
FIGURE 6. Switching waveforms

Device type 02, 05

NOTES:

1. $D_1 = 1N3064$ or equivalent
2. $R_1 = 51\Omega \pm 2\%$, type 02 "BUS" outputs
 $R_1 = 51\Omega \pm 2\%$, type 05 "BUS" outputs
 $R_1 = 330\Omega \pm 2\%$, "R" outputs
 $R_1 = 340\Omega \pm 1\%$, "Parity" output
3. $R_2 = 120\Omega \pm 2\%$, type 02 "BUS" outputs
 $R_2 = 120\Omega \pm 2\%$, type 05 "BUS" outputs
 $R_2 = 2.4\text{ k}\Omega \pm 2\%$, "R" outputs
 $R_2 = 3.83\text{ k}\Omega \pm 1\%$, "Parity" output
4. $C_L = 50\text{ pF}$ and includes probe and jig capacitance.
5. $V_{LOAD} = 5.0\text{ V}$ for device type 02 $\overline{\text{BUS}}$ outputs.
 $V_{LOAD} = 2.5\text{ V}$ for device types 02, 05 R_X and parity outputs and type 05 $\overline{\text{BUS}}$ outputs.

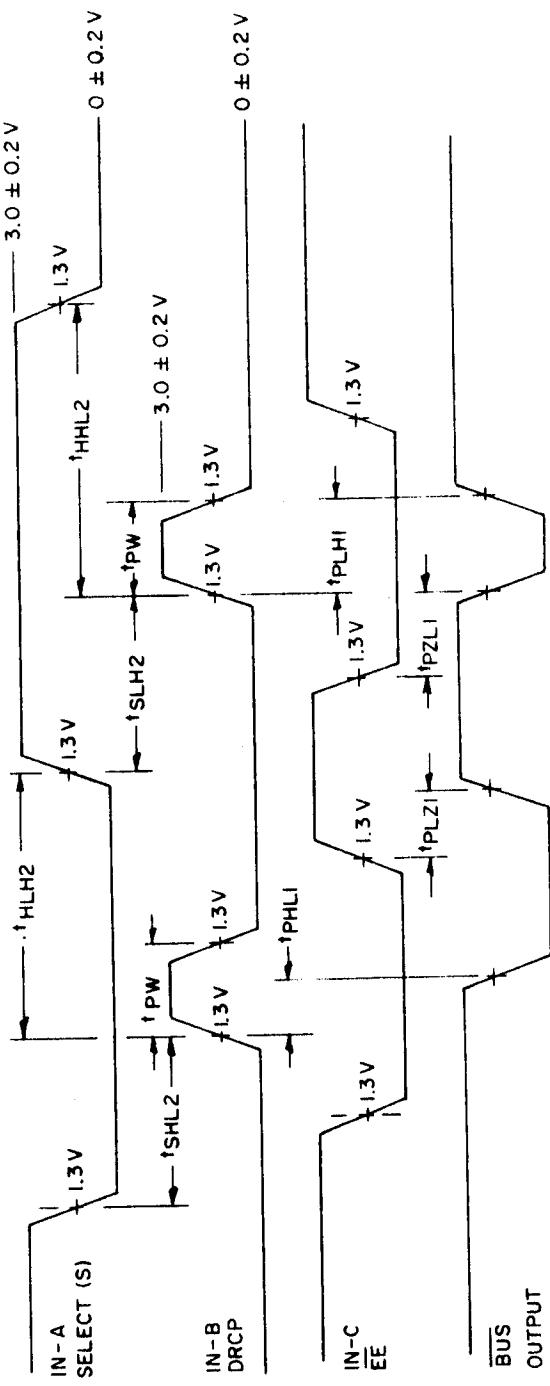
FIGURE 6. Switching waveforms - Continued.

Device type 03, 06

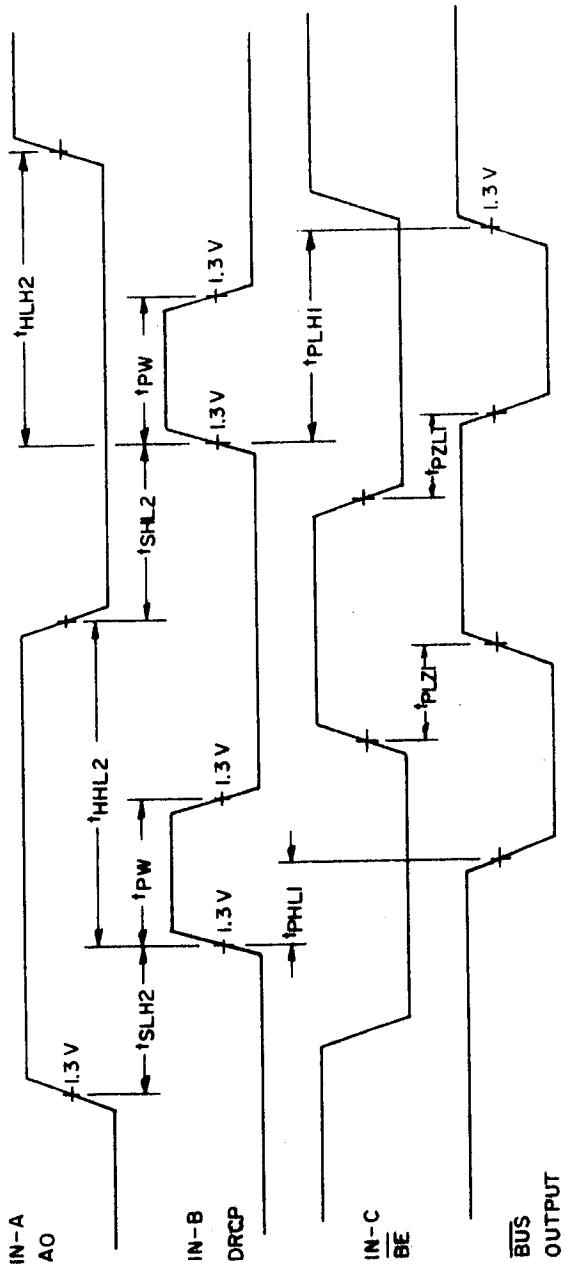
NOTES:

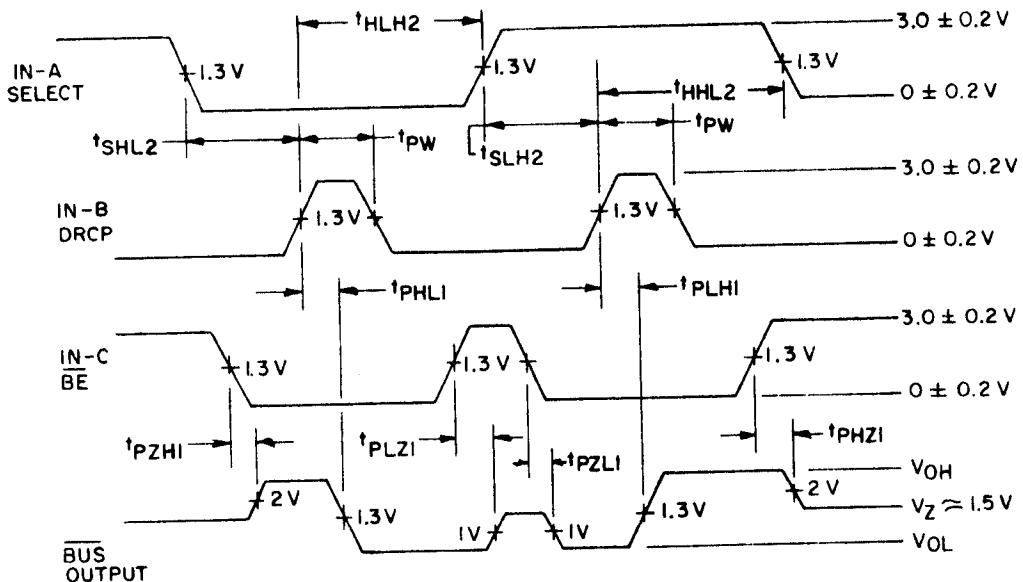
- $D_1 = 1N3064$ or equivalent.
- $R_1 = 51\Omega \pm 2\%$, type 03 "BUS" outputs
 $R_1 = 51\Omega \pm 2\%$, type 06 "BUS" outputs
 $R_1 = 330\Omega \pm 2\%$, "R" outputs
 $R_1 = 340\Omega \pm 2\%$, "Parity" output
- $R_2 = 120\Omega \pm 2\%$, type 03 "BUS" outputs
 $R_2 = 120\Omega \pm 2\%$, type 06 "BUS" outputs
 $R_2 = 2.4 \text{ k}\Omega \pm 2\%$, "R" outputs
 $R_2 = 3.83 \text{ k}\Omega \pm 1\%$, "Parity" output
- $V_{LOAD} = 5.0 \text{ V}$ for type 03 BUS outputs
 $V_{LOAD} = 2.5 \text{ V}$ for types 03, 06 R_X and parity outputs and type 06 BUS outputs.

FIGURE 6. Switching waveforms - Continued.

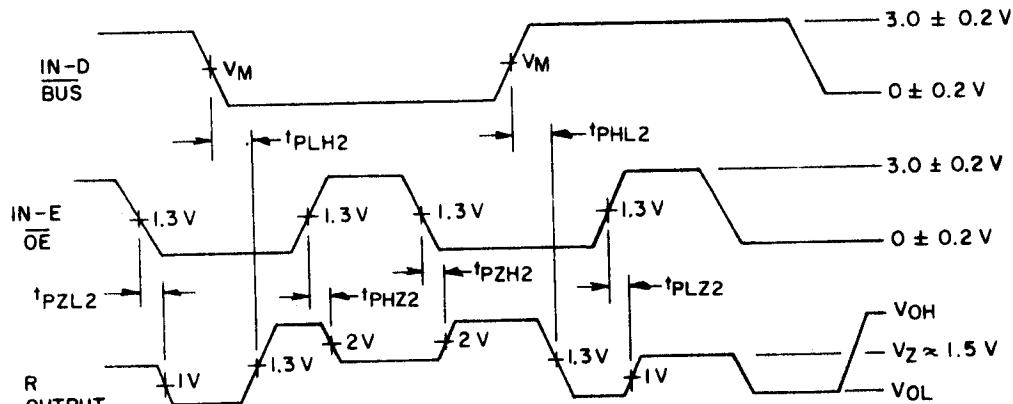
Waveform A type 01, 02, onlyFIGURE 6. Switching waveforms - continued.

Waveform A device type 03 only

FIGURE 6. Switching waveforms - Continued.

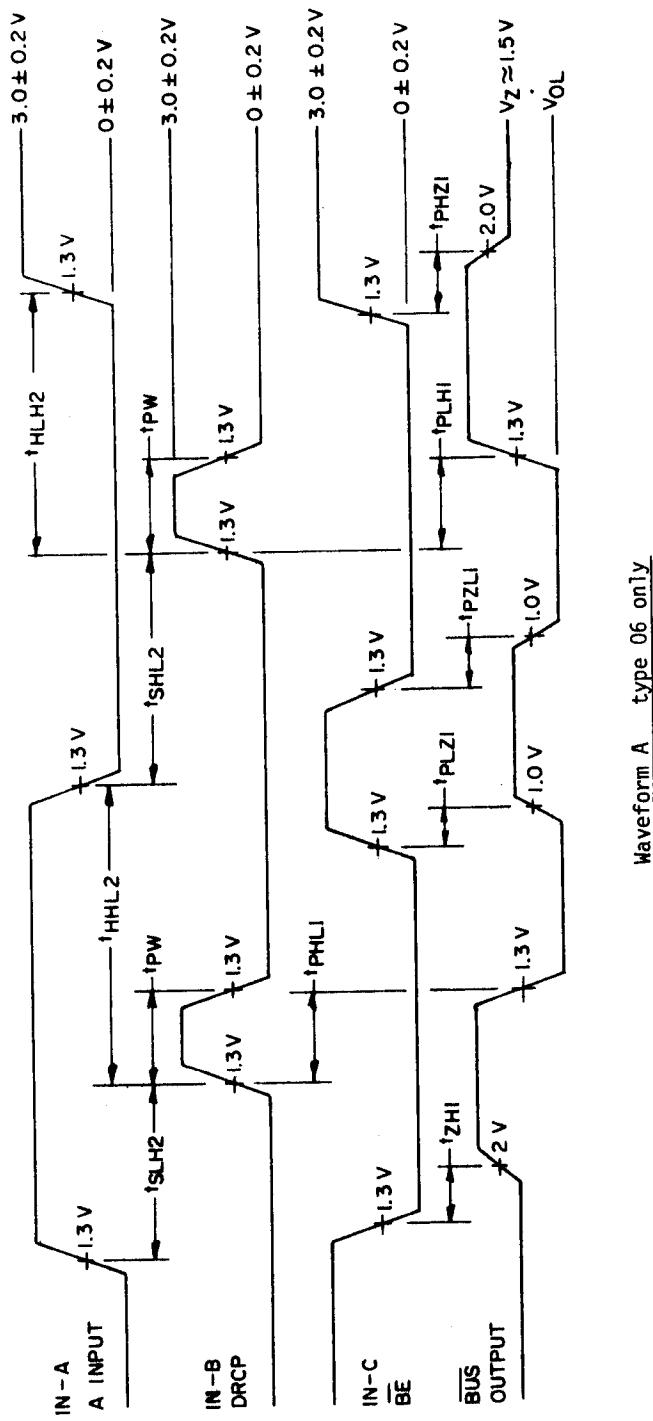


Waveform A Type 04, 05, only



Waveform B

 $V_M = 2.0 \text{ V}$ for type 01, 02, 03 $V_M = 1.3 \text{ V}$ for type 04, 05, 06FIGURE 6. Switching waveforms - Continued.



Waveform A type 06 only

FIGURE 6. Switching waveforms - Continued.

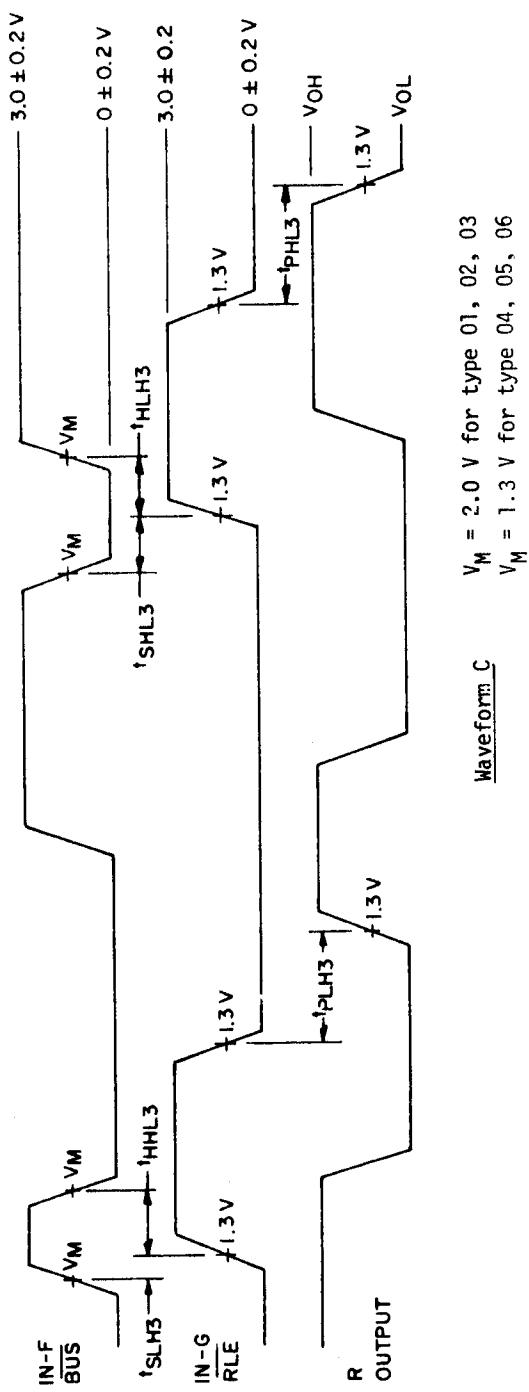
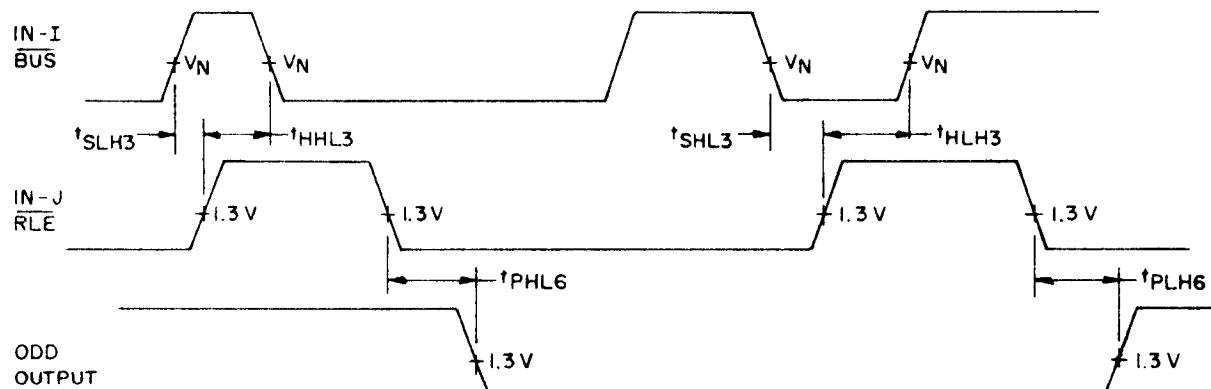
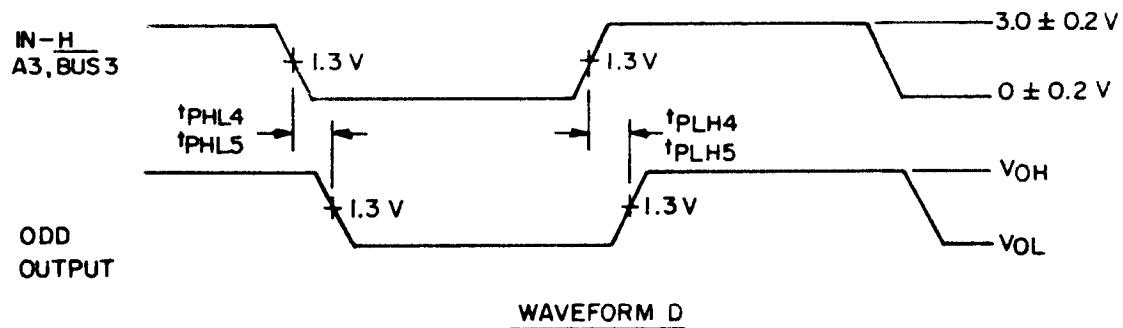


FIGURE 6. Switching waveforms - Continued.



$V_M = 2.0 \text{ V}$ for type 01, 02, 03

$V_M = 1.3 \text{ V}$ for type 04, 05, 06

FIGURE 6. Switching waveforms - Continued.

TABLE III. Group A inspection for device types 01 and 04.
Terminal conditions (pins not designated may be high $\geq 2.0\text{ V}$, or low $\leq V_{IL(\text{max})}$; or open)

Subgroup	Symbol	Pin	MIL-STD-883 Test No.	RUE	R ₀	B ₀	A ₀	B ₀ BUS ₀	GND	-15 mA	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Test limits		
1	V _{OH1} (01)	1	3006		2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	BUS ₀	BUS ₁	BUS ₂	BUS ₃
T _c = +25°C																																
	V _{OH2} (01,04)																															
	V _{O1} (01)	3007																														
		5	GND																													
	V _{O1} (01)	1																														
	V _{O1} (01)	10																														
	V _{O1} (01)	11																														
	V _{O1} (01)	12																														
	V _{O2} (04)	13																														
	V _{O2} (04)	14																														
	V _{O2} (04)	15																														
	V _{O2} (04)	16																														
	V _{O3} (01)	17																														
	V _{O3} (01)	18																														
	V _{O3} (01)	19																														
	V _{O4} (04)	20																														
	V _{O4} (04)	21																														
	V _{O4} (04)	22																														
	V _{O4} (04)	23																														
	V _{O5} (01)	24																														
	V _{O5} (01)	25																														
	V _{O5} (01)	26																														
	V _{O5} (01)	27																														
	V _{O5} (01)	28																														
	V _{O6} (01,04)	29																														
	V _{O6} (01,04)	30																														
	V _{O6} (01,04)	31																														
	V _{O6} (01,04)	32																														

See footnotes at end of device types 01 and 04.

TABLE III. Group A inspection for device types 01 and 04 - Continued.
(pins not designated may be high 2.0 V_I or low $\leq V_{IL\max}$; or open)

Subgroup	Symbol	Pin	MIL-STD-883 Test No.	Terminal conditions (pins not designated may be high 2.0 V _I or low $\leq V_{IL\max}$; or open)												Meas. terminal	Test limits									
				R _E	R ₀	R ₀	A ₀	B ₀	BUS ₀	GND	A ₁	B ₁	R ₁	BUS ₁	GND	S	R ₂	A ₂	BUS ₂	GND	A ₃	B ₃	R ₃	DRCP	V _{CC}	
1	V_{OL7} (01,04)	3007	33	GND	8 mA					4.5 V				4.5 V							4.5 V			R ₀	0.45 V	
	V_{OL8} (01,04)		34																					R ₁		
			35																					R ₂		
			36																					R ₃		
	I_{IL1} (01)	3009	41																					R ₀	0.5 V	
			42																					R ₁		
																								R ₂		
																								R ₃		
	I_{IL2} (04)		43																						BE	-0.36 mA
			44																						RLF	-0.36 mA
	I_{IL3} (01,04)		45																						BE	-0.72 V
			46																						RLF	-0.72 V
																									A ₀	-0.36 V
																									A ₁	
																									A ₂	
																									A ₃	
																									B ₀	
																									B ₁	
																									B ₂	
																									B ₃	
																									DE	
																									S	
																									DRCP	
	I_{IH1} (01,04)	3010	56																						A ₀	20 μ A
			57																						A ₁	
			58																						A ₂	
			59																						A ₃	
			60																						B ₀	
			61																						B ₁	
			62																						B ₂	
			63																						B ₃	
			64																						RLF	
			65																						BE	
			66																						DE	
			67																						S	
			68																						DRCP	

See footnotes at end of device types 01 and 04.

TABLE III. Group A Testection for device types 01 and 04 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or $T_{OW} \leq T_{L1}$ (max); or open)

Subgroup	Symbol	MIL-STD-883 method	Pin No.	Test No.	Terminal conditions (pins not designated may be high ≥ 2.0 V; or $T_{OW} \leq T_{L1}$ (max); or open)												Test limits												
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Meas. terminal Min.	Max. Unit
1	I_{TH2} (01,04)	3010	69																								5.5 V	A_0	100 μA
			70																									A_1	
			71																									A_2	
			72																									A_3	
			73																									B_0	
			74																									B_1	
			75																									B_2	
			76																									B_3	
			77																									RLE	
			78																									BE	
			79																									S	
			80																									$DRCP$	
			81																									R_0	$L/$
			82																									R_1	
			83																									R_2	
			84																									R_3	
			85																									C	
			86																									BUS_0	-50
			87																									BUS_1	
			88																									BUS_2	
			89																									BUS_3	
			90																									GND	
			91																									0.4 V	
			92																									GND	
			93																									0.4 V	
			94																									GND	
			95																									2.4 V	
			96																									GND	
			97																									4.5 V	
			98																									GND	
			99																									4.5 V	
			100																									GND	
			101																									4.5 V	
																												4.5 V	
																												GND	
																												C	
																												BUS_0	200
																												BUS_1	
																												BUS_2	
																												BUS_3	

See footnotes at end of device types 01 and 04.

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions (pins not designated may be high $\geq 2.0\text{ V}$; or low $\leq V_{IL\max}$; or open)

Subgroup	Symbol	MIL-STD-883 method	Pin	Test No.	Test limits																																	
					1	2	3	4	5	6	BUS ₀	BUS ₁	A ₁	B ₁	R ₁	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	V _{CC}	Meas.	terminal	Max	Unit	
1	I _{ZH3} (1 _{ow}) (04)		102								GND	4.5 V																										
		T _C = +25°C	103																																			
	I _{ZH4} (1 _{ow}) (04)		104																																			
			105																																			
	I _{ZH5} (1 _{ow}) (01,04)		106																																			
			107																																			
	I _{ZL1} (h _{ig}) (01)		108																																			
			109																																			
	I _{ZL2} (h _{ig}) (01)		110																																			
			111																																			
	I _{ZL3} (h _{ig}) (04)		112																																			
			113																																			
	I _{ZL4} (h _{ig}) (01,04)		114																																			
			115																																			
	I _{ZL5} (h _{ig}) (01)		116																																			
			117																																			
	I _{ZL6} (h _{ig}) (01)		118																																			
			119																																			
	I _{ZL7} (h _{ig}) (04)		120																																			
			121																																			
	I _{ZL8} (h _{ig}) (04)		122																																			
			123																																			
	I _{ZL9} (h _{ig}) (04)		124																																			
			125																																			
	I _{ZL10} (h _{ig}) (04)		126																																			
			127																																			
	I _{ZL11} (h _{ig}) (04)		128																																			
			129																																			
	I _{ZL12} (h _{ig}) (04)		130																																			
			131																																			
	I _{ZL13} (h _{ig}) (04)		132																																			
			133																																			

See footnotes at end of device types 01 and 04.

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL(\text{max})}$; or open)

Subgroup	Symbol	MIL-STD-883 Test No.	Pin R_E	1	2	3	4	5	6	7	8	B₀	A₀	B₁	A₁	B₂	A₂	B₃	A₃	B₄	A₄	B₅	A₅	B₆	A₆	B₇	A₇	B₈	A₈	B₉	A₉	B₁₀	A₁₀	B₁₁	A₁₁	B₁₂	A₁₂	B₁₃	A₁₃	B₁₄	A₁₄	B₁₅	A₁₅	B₁₆	A₁₆	B₁₇	A₁₇	B₁₈	A₁₈	B₁₉	A₁₉	B₂₀	A₂₀	B₂₁	A₂₁	B₂₂	A₂₂	B₂₃	A₂₃	B₂₄	A₂₄	B₂₅	A₂₅	B₂₆	A₂₆	B₂₇	A₂₇	B₂₈	A₂₈	B₂₉	A₂₉	B₃₀	A₃₀	B₃₁	A₃₁	B₃₂	A₃₂	B₃₃	A₃₃	B₃₄	A₃₄	B₃₅	A₃₅	B₃₆	A₃₆	B₃₇	A₃₇	B₃₈	A₃₈	B₃₉	A₃₉	B₄₀	A₄₀	B₄₁	A₄₁	B₄₂	A₄₂	B₄₃	A₄₃	B₄₄	A₄₄	B₄₅	A₄₅	B₄₆	A₄₆	B₄₇	A₄₇	B₄₈	A₄₈	B₄₉	A₄₉	B₅₀	A₅₀	B₅₁	A₅₁	B₅₂	A₅₂	B₅₃	A₅₃	B₅₄	A₅₄	B₅₅	A₅₅	B₅₆	A₅₆	B₅₇	A₅₇	B₅₈	A₅₈	B₅₉	A₅₉	B₆₀	A₆₀	B₆₁	A₆₁	B₆₂	A₆₂	B₆₃	A₆₃	B₆₄	A₆₄	B₆₅	A₆₅	B₆₆	A₆₆	B₆₇	A₆₇	B₆₈	A₆₈	B₆₉	A₆₉	B₇₀	A₇₀	B₇₁	A₇₁	B₇₂	A₇₂	B₇₃	A₇₃	B₇₄	A₇₄	B₇₅	A₇₅	B₇₆	A₇₆	B₇₇	A₇₇	B₇₈	A₇₈	B₇₉	A₇₉	B₈₀	A₈₀	B₈₁	A₈₁	B₈₂	A₈₂	B₈₃	A₈₃	B₈₄	A₈₄	B₈₅	A₈₅	B₈₆	A₈₆	B₈₇	A₈₇	B₈₈	A₈₈	B₈₉	A₈₉	B₉₀	A₉₀	B₉₁	A₉₁	B₉₂	A₉₂	B₉₃	A₉₃	B₉₄	A₉₄	B₉₅	A₉₅	B₉₆	A₉₆	B₉₇	A₉₇	B₉₈	A₉₈	B₉₉	A₉₉	B₁₀₀	A₁₀₀	B₁₀₁	A₁₀₁	B₁₀₂	A₁₀₂	B₁₀₃	A₁₀₃	B₁₀₄	A₁₀₄	B₁₀₅	A₁₀₅	B₁₀₆	A₁₀₆	B₁₀₇	A₁₀₇	B₁₀₈	A₁₀₈	B₁₀₉	A₁₀₉	B₁₁₀	A₁₁₀	B₁₁₁	A₁₁₁	B₁₁₂	A₁₁₂	B₁₁₃	A₁₁₃	B₁₁₄	A₁₁₄	B₁₁₅	A₁₁₅	B₁₁₆	A₁₁₆	B₁₁₇	A₁₁₇	B₁₁₈	A₁₁₈	B₁₁₉	A₁₁₉	B₁₂₀	A₁₂₀	B₁₂₁	A₁₂₁	B₁₂₂	A₁₂₂	B₁₂₃	A₁₂₃	B₁₂₄	A₁₂₄	B₁₂₅	A₁₂₅	B₁₂₆	A₁₂₆	B₁₂₇	A₁₂₇	B₁₂₈	A₁₂₈	B₁₂₉	A₁₂₉	B₁₃₀	A₁₃₀	B₁₃₁	A₁₃₁	B₁₃₂	A₁₃₂	B₁₃₃	A₁₃₃	B₁₃₄	A₁₃₄	B₁₃₅	A₁₃₅	B₁₃₆	A₁₃₆	B₁₃₇	A₁₃₇	B₁₃₈	A₁₃₈	B₁₃₉	A₁₃₉	B₁₄₀	A₁₄₀	B₁₄₁	A₁₄₁	B₁₄₂	A₁₄₂	B₁₄₃	A₁₄₃	B₁₄₄	A₁₄₄	B₁₄₅	A₁₄₅	B₁₄₆	A₁₄₆	B₁₄₇	A₁₄₇	B₁₄₈	A₁₄₈	B₁₄₉	A₁₄₉	B₁₅₀	A₁₅₀	B₁₅₁	A₁₅₁	B₁₅₂	A₁₅₂	B₁₅₃	A₁₅₃	B₁₅₄	A₁₅₄	B₁₅₅	A₁₅₅	B₁₅₆	A₁₅₆	B₁₅₇	A₁₅₇	B₁₅₈	A₁₅₈	B₁₅₉	A₁₅₉	B₁₆₀	A₁₆₀	B₁₆₁	A₁₆₁	B₁₆₂	A₁₆₂	B₁₆₃	A₁₆₃	B₁₆₄	A₁₆₄	B₁₆₅	A₁₆₅	B₁₆₆	A₁₆₆	B₁₆₇	A₁₆₇	B₁₆₈	A₁₆₈	B₁₆₉	A₁₆₉	B₁₇₀	A₁₇₀	B₁₇₁	A₁₇₁	B₁₇₂	A₁₇₂	B₁₇₃	A₁₇₃	B₁₇₄	A₁₇₄	B₁₇₅	A₁₇₅	B₁₇₆	A₁₇₆	B₁₇₇	A₁₇₇	B₁₇₈	A₁₇₈	B₁₇₉	A₁₇₉	B₁₈₀	A₁₈₀	B₁₈₁	A₁₈₁	B₁₈₂	A₁₈₂	B₁₈₃	A₁₈₃	B₁₈₄	A₁₈₄	B₁₈₅	A₁₈₅	B₁₈₆	A₁₈₆	B₁₈₇	A₁₈₇	B₁₈₈	A₁₈₈	B₁₈₉	A₁₈₉	B₁₉₀	A₁₉₀	B₁₉₁	A₁₉₁	B₁₉₂	A₁₉₂	B₁₉₃	A₁₉₃	B₁₉₄	A₁₉₄	B₁₉₅	A₁₉₅	B₁₉₆	A₁₉₆	B₁₉₇	A₁₉₇	B₁₉₈	A₁₉₈	B₁₉₉	A₁₉₉	B₂₀₀	A₂₀₀	B₂₀₁	A₂₀₁	B₂₀₂	A₂₀₂	B₂₀₃	A₂₀₃	B₂₀₄	A₂₀₄	B₂₀₅	A₂₀₅	B₂₀₆	A₂₀₆	B₂₀₇	A₂₀₇	B₂₀₈	A₂₀₈	B₂₀₉	A₂₀₉	B₂₁₀	A₂₁₀	B₂₁₁	A₂₁₁	B₂₁₂	A₂₁₂	B₂₁₃	A₂₁₃	B₂₁₄	A₂₁₄	B₂₁₅	A₂₁₅	B₂₁₆	A₂₁₆	B₂₁₇	A₂₁₇	B₂₁₈	A₂₁₈	B₂₁₉	A₂₁₉	B₂₂₀	A₂₂₀	B₂₂₁	A₂₂₁	B₂₂₂	A₂₂₂	B₂₂₃	A₂₂₃	B₂₂₄	A₂₂₄	B₂₂₅	A₂₂₅	B₂₂₆	A₂₂₆	B₂₂₇	A₂₂₇	B₂₂₈	A₂₂₈	B₂₂₉	A₂₂₉	B₂₃₀	A₂₃₀	B₂₃₁	A₂₃₁	B₂₃₂	A₂₃₂	B₂₃₃	A₂₃₃	B₂₃₄	A₂₃₄	B₂₃₅	A₂₃₅	B₂₃₆	A₂₃₆	B₂₃₇	A₂₃₇	B₂₃₈	A₂₃₈	B₂₃₉	A₂₃₉	B₂₄₀	A₂₄₀	B₂₄₁	A₂₄₁	B₂₄₂	A₂₄₂	B₂₄₃	A₂₄₃	B₂₄₄	A₂₄₄	B₂₄₅	A₂₄₅	B₂₄₆	A₂₄₆	B₂₄₇	A₂₄₇	B₂₄₈	A₂₄₈	B₂₄₉	A₂₄₉	B₂₅₀	A₂₅₀	B₂₅₁	A₂₅₁	B₂₅₂	A₂₅₂	B₂₅₃	A₂₅₃	B₂₅₄	A₂₅₄	B₂₅₅	A₂₅₅	B₂₅₆	A₂₅₆	B₂₅₇	A₂₅₇	B₂₅₈	A₂₅₈	B₂₅₉	A₂₅₉	B₂₆₀	A₂₆₀	B₂₆₁	A₂₆₁	B₂₆₂	A₂₆₂	B₂₆₃	A₂₆₃	B₂₆₄	A₂₆₄	B₂₆₅	A₂₆₅	B₂₆₆	A₂₆₆	B₂₆₇	A₂₆₇	B₂₆₈	A₂₆₈	B₂₆₉	A₂₆₉	B₂₇₀	A₂₇₀	B₂₇₁	A₂₇₁	B₂₇₂	A₂₇₂	B₂₇₃	A₂₇₃	B₂₇₄	A₂₇₄	B₂₇₅	A₂₇₅	B₂₇₆	A₂₇₆	B₂₇₇	A₂₇₇	B₂₇₈	A₂₇₈	B₂₇₉	A₂₇₉	B₂₈₀	A₂₈₀	B₂₈₁	A₂₈₁	B₂₈₂	A₂₈₂	B₂₈₃	A₂₈₃	B₂₈₄	A₂₈₄	B₂₈₅	A₂₈₅	B₂₈₆	A₂₈₆	B₂₈₇	A₂₈₇	B₂₈₈	A₂₈₈	B₂₈₉	A₂₈₉	B₂₉₀	A₂₉₀	B₂₉₁	A₂₉₁	B₂₉₂	A₂₉₂	B₂₉₃	A₂₉₃	B₂₉₄	A₂₉₄	B₂₉₅	A₂₉₅	B₂₉₆	A₂₉₆	B₂₉₇	A₂₉₇	B₂₉₈	A₂₉₈	B₂₉₉	A₂₉₉	B₃₀₀	A₃₀₀	B₃₀₁	A₃₀₁	B₃₀₂	A₃₀₂	B₃₀₃	A₃₀₃	B₃₀₄	A₃₀₄	B₃₀₅	A₃₀₅	B₃₀₆	A₃₀₆	B₃₀₇	A₃₀₇	B₃₀₈	A₃₀₈	B₃₀₉	A₃₀₉	B₃₁₀	A₃₁₀	B₃₁₁	A₃₁₁	B₃₁₂	A₃₁₂	B₃₁₃	A₃₁₃	B₃₁₄	A₃₁₄	B₃₁₅	A₃₁₅	B₃₁₆	A₃₁₆	B₃₁₇	A₃₁₇	B₃₁₈	A₃₁₈	B₃₁₉	A₃₁₉	B₃₂₀	A₃₂₀	B₃₂₁	A₃₂₁	B₃₂₂	A₃₂₂	B₃₂₃	A₃₂₃	B₃₂₄	A₃₂₄	B₃₂₅	A₃₂₅	B₃₂₆	A₃₂₆	B₃₂₇	A₃₂₇	B₃₂₈	A₃₂₈	B₃₂₉	A₃₂₉	B₃₃₀	A₃₃₀	B₃₃₁	A₃₃₁	B₃₃₂	A₃₃₂	B₃₃₃	A₃₃₃	B₃₃₄	A₃₃₄	B₃₃₅	A₃₃₅	B₃₃₆	A₃₃₆	B₃₃₇	A₃₃₇	B₃₃₈	A₃₃₈	B₃₃₉	A₃₃₉	B₃₄₀	A₃₄₀	B₃₄₁	A₃₄₁	B₃₄₂	A₃₄₂	B₃₄₃	A₃₄₃	B₃₄₄	A₃₄₄	B₃₄₅	A₃₄₅	B₃₄₆	A₃₄₆	B₃₄₇	A₃₄₇	B₃₄₈	A₃₄₈	B₃₄₉	A₃₄₉	B₃₅₀	A₃₅₀	B₃₅₁	A₃₅₁	B₃₅₂	A₃₅₂	B₃₅₃	A₃₅₃	B₃₅₄	A₃₅₄	B₃₅₅	A₃₅₅	B₃₅₆	A₃₅₆	B₃₅₇	A₃₅₇	B₃₅₈	A₃₅₈	B₃₅₉	A₃₅₉	B₃₆₀	A₃₆₀	B₃₆₁	A₃₆₁	B₃₆₂	A₃₆₂	B₃₆₃	A₃₆₃	B₃₆₄	A₃₆₄	B₃₆₅	A₃₆₅	B₃₆₆	A₃₆₆	B₃₆₇	A₃₆₇	B₃₆₈	A₃₆₈	B₃₆₉	A₃₆₉	B₃₇₀	A₃₇₀	B₃₇₁	A₃₇₁	B₃₇₂	A₃₇₂	B₃₇₃	A₃₇₃	B₃₇₄	A₃₇₄	B₃₇₅	A₃₇₅	B₃₇₆	A₃₇₆	B₃₇₇	A₃₇₇	B₃₇₈	A₃₇₈	B₃₇₉	A₃₇₉	B₃₈₀	A₃₈₀	B₃₈₁	A₃₈₁	B₃₈₂	A₃₈₂	B₃₈₃	A₃₈₃	B₃₈₄	A₃₈₄	B₃₈₅	A₃₈₅	B₃₈₆	A₃₈₆	B₃₈₇	A₃₈₇	B₃₈₈	A₃₈₈	B₃₈₉	A₃₈₉	B₃₉₀	A₃₉₀	B₃₉₁	A₃₉₁	B₃₉₂	A₃₉₂	B₃₉₃	A₃₉₃	B₃₉₄	A₃₉₄	B₃₉₅	A₃₉₅	B₃₉₆	A₃₉₆	B₃₉₇	A₃₉₇	B₃₉₈	A₃₉₈	B₃₉₉	A₃₉₉	B₄₀₀	A₄₀₀	B₄₀₁	A₄₀₁	B₄₀₂	A₄₀₂	B₄₀₃	A₄₀₃	B₄₀₄	A₄₀₄	B₄₀₅	A₄₀₅	B₄₀₆	A₄₀₆	B₄₀₇	A₄₀₇	B₄₀₈	A₄₀₈	B₄₀₉	A₄₀₉	B₄₁₀	A₄₁₀	B₄₁₁	A₄₁₁	B₄₁₂	A₄₁₂	B₄₁₃	A₄₁₃	B₄₁₄	A₄₁₄	B₄₁₅	A₄₁₅	B₄₁₆	A₄₁₆	B₄₁₇	A₄₁₇	B₄₁₈	A₄₁₈	B₄₁₉	A₄₁₉	B₄₂₀	A₄₂₀	B₄₂₁	A₄₂₁	B₄₂₂	A₄₂₂	B₄₂₃	A₄₂₃	B₄₂₄	A₄₂₄	B₄₂₅	A₄₂₅	B₄₂₆	A₄₂₆	B₄₂₇	A₄₂₇	B₄₂₈	A₄₂₈	B₄₂₉	A₄₂₉	B₄₃₀	A₄₃₀	B_{431</}

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL}$ (max); or open)

See footnotes at end of device types 01 and 04.

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions. (pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL(max)}$; or open)

| Subgroup | Symbol | MIL-STD-883 Test No. | Pin | R_{IF} | R₀ | B₀ | A₀ | B_{US₀} | GND | B_{US₁} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ | B₁₄ | B₁₃ | B₁₂ | B₁₁ | B₁₀ | B₉ | B₈ | B₇ | B₆ | B₅ | B₄ | B₃ | B₂ | B₁ | B₀ | B_{US₀} | A₃ | B₃ | R₃ | B₂ | A₂ | B₁ | B₀ | B_{US₀} | A₁ | B₁ | R₁ | B_E | S | R₂ | B₂ | A₂ | B_{US₃} | GND | B_{US₂} | GND | B₁₉ | B₁₈ | B₁₇ | B₁₆ | B₁₅ |
<th rowspan="2
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions (pins not designated may be high $\geq 2.0\text{ V}$; or $T_{ow} \leq V_{IL(\text{max})}$; or open)

See footnotes at end of device types 01 and 04.

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or $T_{OW} \leq Y_{IL}$ (max); or open)

Subgroup	Symbol	MIL-STD-883 Test No.	Pin	Test limits																										
				Test No.	RLE	R ₀	B ₀	A ₀	BUS ₀	GND	BUS ₁	A ₁	B ₁	R ₁	OUT	S	R ₂	B ₂	A ₂	BUS ₂	GND	BUS ₃	A ₃	B ₃	R ₃	DRCP	V _{CC}	Meas. terminal	Max	Min
9	t_{PLI2} (04)	3003	285	286	OUT	-	-	-	-	-	-	-	-	-	4.5 V	IN-E	-	-	-	-	-	-	-	-	-	5.0 V	1	3	24	ns
	t_{PLI2} (01)		287	288	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (04)		290	291	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (01)		292	293	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (04)		294	295	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (01)		296	297	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (04)		298	299	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (01)		300	301	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (04)		302	303	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (01)		304	305	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (04)		306	307	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (01)		308	309	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (04)		310	311	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (01)		312	313	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (04)		314	315	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns
	t_{PLI2} (01)		316	317	OUT	-	-	-	-	-	-	-	-	-	OUT	OUT	-	-	-	-	-	-	-	-	-	OUT	1	1	27	ns

See footnotes at end of device types 01 and 04.

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL(\max)}$; or open)

See footnotes at end of device types 01 and 04.

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL(\max)}$; or open)

Subgroup	Symbol	MIL-STD-883 Test No.	Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Test limits				
				R _L	R ₀	B ₀	A ₀	BUS ₀	GND	BUS ₁	A ₁	B ₁	GND	OUT	GND	OUT	S	R ₂	B ₂	GND	BUS ₂	GND	BUS ₃	A ₃	B ₃	DRC _P	V _{CC}	Meas.	terminal	Max.	Unit	
10	t _{PHI} _I (04)	3003	349																													
T _C = +125°C			350																													
	t _{PHI} _H (01)		351																													
	t _{PHI} _H (04)		352																													
	t _{PLH} _I (01)		353																													
	t _{PLH} _I (04)		354																													
	t _{PLH} _H (01)		355																													
	t _{PLH} _H (04)		356																													
	t _{PLL} _I (01,04)		357																													
	t _{PLL} _I (04)		358																													
	t _{PLL} _H (01)		359																													
	t _{PLL} _H (04)		360																													
	t _{PLZ} _I (01)		361																													
	t _{PLZ} _I (04)		362																													
	t _{PLZ} _H (01)		363																													
	t _{PLZ} _H (04)		364																													
	t _{PLZ} _I (01)		365																													
	t _{PLZ} _I (04)		366																													
	t _{PLZ} _H (01)		367																													
	t _{PLZ} _H (04)		368																													
	t _{PLZ} _I (01)		369																													
	t _{PLZ} _I (04)		370																													
	t _{PLZ} _H (01)		371																													
	t _{PLZ} _H (04)		372																													
	t _{PLZ} _I (04)		373																													
	t _{PLZ} _H (04)		374																													
	t _{PLZ} _I (01)		375																													
	t _{PLZ} _H (01)		376																													
	t _{PLZ} _I (04)		377																													
	t _{PLZ} _H (04)		378																													
	t _{PLZ} _I (01)		379																													
	t _{PLZ} _H (01)		380																													

See footnotes at end of device types 01 and 04.

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions [pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL(\max)}$; or open]

See footnotes at end of device types 91 and 94.

TABLE III. Group A inspection for device types 01 and 04 - Continued.
Terminal conditions (pins not designated may be high $\geq 2.0\text{ V}$; or $T_{\text{JW}} \leq V_{\text{IL(max)}}$; or open)

Subgroup	Symbol	MIL-STD-883 Test No.	Pin	Test 1												Test 2		Meas. terminal	Max Unit	Test 1 units			
				R _E	R ₀	A ₀	BUS ₀	GND	A ₁	B ₁	R ₁	S	R ₂	B ₂	A ₂	BUS ₂	GND	A ₃	B ₃	DREP	V _{CC}		
10 $T_C = +125^\circ\text{C}$	$t_{PL22}(04)$	3003	413	GND	OUT			IN-D									IN-D			5.0 V	R ₀	3	28 ns
	$t_{PH22}(04)$		414						417	OUT											R ₁		
			415						418											R ₂			
			416						419											R ₃			
	$t_{PH22}(04)$								420														
	$t_{PH22}(04)$								421	OUT													
									422														
									423														
									424														
	$t_{PH22}(04)$								425	OUT													
									426														
									427														
									428														
	$t_{PHL3}(04)$								429	IN-G	OUT												
									430														
									431														
									432														
	$t_{PHL3}(04)$								433	OUT													
									434														
									435														
									436														
	$t_{PLH3}(04)$								437	OUT													
									438														
									439														
									440														
	$t_{PLH3}(04)$								441	OUT													
									442														
									443														
									444														

11 Same tests, terminal conditions and units as for subgroup 9, except $T_C = -55^\circ\text{C}$.

See footnotes at end of device types 01 and 04.

NOTES:



1. C =
2. Input voltages are: A = 2.4 V; B = 0.4 V except * where A = 2.8 V; B = 1.1 V for device type 01 only.
3. The measurement terminal is all outputs. Output voltages shall be either:
H = 2.4 V minimum and L = 0.4 V maximum when using a high speed checker double comparator; or
H ≥ 1.5 V and L ≤ 1.5 V when using a high speed checker single comparator.
4. X = Don't care
5. Z = High impedance - The maximum current into or out of the disabled outputs shall be as shown:

Device type	01		04		
	V _{out}	0.4 V	2.4 V	0.4 V	2.4 V
R3 - R0	±20 μA		±20 μA	±20 μA	±20 μA
B3 - B0	-50 μA	200 μA	-200 μA	50 μA	

6. Test numbers 186 through 244 shall be run in sequence.
7. Maximum limits for device types are 01 = -20, 04 = -50.
8. Maximum limits for device types are 01 = 20, 04 = 50.

TABLE III. Group A inspection for device types 02 and 05
 Terminal conditions (pins not designated may be high $\geq 2.0 \text{ V}$, or low $\leq V_{IL(\max)}$; or open)

Subgroup	Symbol	MLT- STD-883 method	Pin Test No.	R _E	R _O	B ₀	A ₀	BU _S ₀	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DRCP	V _{CC}	Meas. terminal	Min Ma	Max Ma	Unit
1	V_{OH1} (05)	3006	1					GND	-15 mA	GND																							
	V_{OH2} (02,05)		2																														
			3																														
			4																														
			5	GND	-1 mA																												
			6																														
			7																														
			8																														
			9																														
	V_{OL3} (02,05)																																
			10						4.5 V	40 mA																							
			11																														
			12																														
			13																														
			14						4.5 V	24 mA																							
			15																														
			16																														
			17																														
			18						4.5 V	70 mA																							
			19																														
			20																														
			21																														
			22						4.5 V	48 mA																							
			23																														
			24																														
			25																														
			26						4.5 V	100 mA																							
			27																														
			28																														
			29																														
			30						GND	4 mA																							
			31																														
			32																														
			33																														
			34																														

See footnotes at end of device types 02 and 05.

TABLE III. Group A inspection for device types 02 and 05 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 ; or low $\leq I_{IL(max)}$; or open)

Subgroup	Symbol	MIL-STD-883 method	Pin Test No.	RLE	R ₀	B ₀	A ₀	BUS ₀	GND	BUS ₁	A ₁	B ₁	R ₁	B/E	000	S	R ₂	B ₂	A ₂	BUS ₂	GND	BUS ₃	A ₃	B ₃	R ₃	DRCP	V _{CC}	Meas. terminal	Test limits		
1	$I_{OL(02,05)}$	3007	35	GND	8 mA				4.5 V	GND	4.5 V						8 mA											4.5 V	R_0	0.45 V	
	$T_c = +25^\circ C$		36																												
	$I_{OL(02,05)}$		37																												
	$I_{OL(02,05)}$		38																												
	$I_{OL(02,05)}$		39																												
	$I_{OL(02,05)}$		40																												
	$I_{OL(02,05)}$		41																												
	$I_{OL(02,05)}$		42																												
	$I_{OL(02,05)}$		43																												
	$I_{OL(02,05)}$		44																												
	$I_{OL(02,05)}$		3009																												
	$I_{OL(02,05)}$		45																												
	$I_{OL(02,05)}$		46																												
	$I_{OL(02,05)}$		47																												
	$I_{OL(02,05)}$		48																												
	$I_{OL(02,05)}$		49																												
	$I_{OL(02,05)}$		50																												
	$I_{OL(02,05)}$		51																												
	$I_{OL(02,05)}$		52																												
	$I_{OL(02,05)}$		53																												
	$I_{OL(02,05)}$		54																												
	$I_{OL(02,05)}$		55																												
	$I_{OL(02,05)}$		56																												
	$I_{OL(02,05)}$		57																												
	$I_{OL(02,05)}$		58																												
	$I_{OL(02,05)}$		59																												
	$I_{OL(02,05)}$		60																												
	$I_{OL(02,05)}$		61																												
	$I_{OL(02,05)}$		62																												
	$I_{OL(02,05)}$		63																												
	$I_{OL(02,05)}$		64																												
	$I_{OL(02,05)}$		65																												
	$I_{OL(02,05)}$		66																												
	$I_{OL(02,05)}$		67																												
	$I_{OL(02,05)}$		68																												
	$I_{OL(02,05)}$		69																												
	$I_{OL(02,05)}$		70																												

See footnotes at end of device types 02 and 05.

TABLE III. Group A insulation for device types 02 and 05 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or $T_{ow} \leq T_{JL\max}$; or open)

Subgroup	Symbol	MIL-STD-883 method	Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Min. M	A	Unit	Test limits
			Test No.	R _E	R ₀	A ₀	B ₀	BUS ₀	GND	BUS ₁	A ₁	B ₁	R ₁	B _E	ODD	S	R ₂	B ₂	A ₂	GND	BUS ₂	A ₃	B ₃	DRCP	V _{CC}							
1	I _{LH2} (02,05)	3010	71					5.5 V									4.5 V															
T _C = +25°C			72																													
			73																													
			74																													
			75																													
			76																													
			77																													
			78																													
			79																													
			80																													
			81																													
			82																													
	I _{LH2} (10 ⁶) (02)		83																													
			84																													
			85																													
			86																													
	I _{LH3} (10 ⁶) (05)		87																													
			88																													
			89																													
			90																													
	I _{HP2} (10 ⁶) (02)		91																													
			92																													
			93																													
			94																													
	I _{HP3} (10 ⁶) (05)		95																													
			96																													
	I _{HM4} (10 ⁶) (05)		97																													
			98																													
			99																													
			100																													
			101																													
			102																													

See footnotes at end of device types 02 and 05.

TABLE III. Group A inspection for device types 02 and 05 - Continued.
 Terminal conditions (pins not designated may be $V_{H(\bar{H})} \geq 2.0$ V, or $T_{ow} \leq V_{IL(max)}$; or open)

Subgroup	Symbol	MIL-STD-883 method	Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Test limits	
			Test No.	R/E	R ₀	R ₀	A ₀	BUS ₀	GND	BUS ₁	A ₁	B ₁	R ₁	B/E	000	S	R ₂	B ₂	A ₂	BUS ₂	GND	BUS ₃	A ₃	R ₃	DRCP	V _{CC}	Meas. terminal	Max. Min. Unit	
1 $T_C = +25^\circ C$	I _{2H5} (05) (low)		103					4.5 V	4.5 V	GND																		100 μA	
			104																										
			105																										
			106																										
			107																										
	I _{2L2} (high) (02)		108																										
			109																										
			110																										
	I _{2L3} (high) (05)		111																										
			112																										
			113																										
			114																										
	I _{2H2} (high) (02)		115																										
			116																										
			117																										
			118																										
	I _{2H3} (high) (05)		119																										
			120																										
			121																										
			122																										
	I _{2H4} (high) (05)		123																										
			124																										
			125																										
			126																										
	I _{2H5} (high) (02,05)		127																										
			128																										
			129																										
			130																										
	I _{OS} (05)		131																										
			132																										
			133																										
			134																										

See footnotes at end of device types 02 and 05.

TABLE III. Group A inspection for device types 02 and 05 - Continued.
(pins not designated may be high ≥ 2.0 V_I, or low $\leq V_{IL\max}$; or open)

Subgroup	Symbol	MIL-STD-883 method	Pin Test No.	1 R _E	2 R _O	3 B _O	4 A _O	5 BU _{S0}	6 GND	7 BU _{S1}	8 A ₁	9 B ₁	10 R ₁	11 S	12 R ₂	13 B ₂	14 R ₂	15 GND	16 B ₂	17 GND	18 B ₃	19 GND	20 B ₃	21 R ₃	22 DRCP	23 V _{CC}	24 Meas. terminal	Test limits Max. Unit	
1	$T_C = +25^\circ C$	I ₀₅₂ (02)	3011	135 GND	136 GND	137 GND	138 GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	0.00	-20	-100		
		I ₀₅₃																							R ₀	-30	-130 mA		
		I ₀₅₂ (05)																							R ₁	-30	-130 mA		
		I ₀₅₃																							R ₂	-30	-130 mA		
		I _{CC} (02)	3005	145 GND	146 GND	147 GND	148 GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	0.00	-20	-100		
		I _{CC} (05)	3005	146 GND	147 GND	148 GND	149 GND	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	V _{CC}	105			
2																													
3																													
		V _{IC} (02,05)																											

TABLE III. Group A inspection for device types 02 and 05 - Continued.
[terminal] conditions

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See footnotes at end of device types 02 and 05.

TABLE III. Group A inspection for device types 02 and 05 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or $T_{OW} \leq T_{IL\max}$; or open)

Subgroup	Symbol	Pin	Test No.	RLE	R ₀	A ₀	B ₀	GND	\overline{BUS}_0	A ₁	B ₁	GND	4.5 V	OUT	S	R ₂	B ₂	A ₂	\overline{BUS}_2	GND	IN-A	IN-C	IN-A	IN-C	IN-B	5.0 V	DRCP	V _{CC}	Meas. terminal	Test limits	Max. Unit	
9	$t_{PHL}(02)$	222	3003		223	224	225	GND																								
$T_C = +25^\circ C$																																
	$t_{PHL}(05)$	226			227	228	229	GND																								
	$t_{PLH}(02)$	230			231	232	233	GND																								
	$t_{PLH}(05)$	234			235	236	237	GND																								
	$t_{PLZL}(02,05)$	238			239	240	241	GND																								
	$t_{PLZL}(05)$	242			243	244	245	GND																								
	$t_{PLZT}(02)$	246			247	248	249	GND																								
	$t_{PLZT}(05)$	250			251	252	253	GND																								

See footnotes at end of device types 02 and 05.

TABLE III. Group A inspection for device types 02 and 05. Continued.
 Terminal conditions: (pins not designated may be high ≥ 2.0 V, or $T_{ow} \leq T_{il(max)}$; or open)

Subgroup	Symbol	MIL-STD-883 Test No.	Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Test limits
				R _E	R _O	B _O	A _O	BUS ₀	GND	BUS ₁	A ₁	B ₁	R ₁	BUS ₂	GND	BUS ₃	A ₃	B ₃	R ₃	DRC _P	V _{CC}								
9 $T_c = +25^\circ C$	$t_{PHL1}(05)$	3003	254		255		256		257																				
	$t_{PHL2}(02)$		258		259		260		261																				
	$t_{PHL2}(05)$		262		263		264		265																				
	$t_{PLH2}(02)$		266		267		268		269																				
	$t_{PLH2}(05)$		270		271		272		273																				
	$t_{PLH3}(02)$		274		275		276		277																				
	$t_{PLH3}(05)$		278		279		280		281																				
	$t_{PLH3}(02)$		282		283		284		285																				

See footnotes at end of device types 02 and 05.

TABLE III. Group A inspection for device types 02 and 05 - Continued.
Terminal conditions (pins not designated may be high > 2.0 V; or low < V_L(max); or open)

The figure displays a timing diagram with multiple horizontal timelines representing different test points or pins. The vertical axis represents time, and the horizontal axis represents the sequence of test points.

- Test Points:**
 - Pin R₀: Test No. 3003, MIL-STD-883 method.
 - Pin B₀: Test No. 3003, MIL-STD-883 method.
 - Pin A₀: Test No. 3003, MIL-STD-883 method.
 - Pin IN-G: Test No. 286, MIL-STD-883 method.
 - Pin OUT: Test No. 288, MIL-STD-883 method.
 - Pin IN-F: Test No. 289, MIL-STD-883 method.
 - Pin IN-H: Test No. 290, MIL-STD-883 method.
 - Pin IN-I: Test No. 291, MIL-STD-883 method.
 - Pin IN-C: Test No. 292, MIL-STD-883 method.
 - Pin IN-A: Test No. 293, MIL-STD-883 method.
 - Pin IN-B: Test No. 294, MIL-STD-883 method.
 - Pin GND: Ground connection.
 - Pin 4.5 V: Power supply level.
 - Pin 5.0 V: Power supply level.
 - Pin OUT: Test No. 295, MIL-STD-883 method.
 - Pin IN-F: Test No. 296, MIL-STD-883 method.
 - Pin IN-H: Test No. 297, MIL-STD-883 method.
 - Pin IN-I: Test No. 298, MIL-STD-883 method.
 - Pin IN-J: Test No. 299, MIL-STD-883 method.
 - Pin IN-C: Test No. 300, MIL-STD-883 method.
 - Pin IN-A: Test No. 301, MIL-STD-883 method.
 - Pin OUT: Test No. 302, MIL-STD-883 method.
 - Pin IN-F: Test No. 303, MIL-STD-883 method.
 - Pin IN-H: Test No. 304, MIL-STD-883 method.
 - Pin IN-I: Test No. 305, MIL-STD-883 method.
 - Pin IN-B: Test No. 306, MIL-STD-883 method.
 - Pin IN-C: Test No. 307, MIL-STD-883 method.
 - Pin IN-A: Test No. 308, MIL-STD-883 method.
 - Pin OUT: Test No. 309, MIL-STD-883 method.
 - Pin IN-F: Test No. 310, MIL-STD-883 method.
 - Pin IN-H: Test No. 311, MIL-STD-883 method.
 - Pin IN-I: Test No. 312, MIL-STD-883 method.
 - Pin IN-B: Test No. 313, MIL-STD-883 method.
- Test Limits:** Indicated by arrows pointing to specific points on the waveforms, defining the acceptable range for each pin.

See footnotes at end of device types 02 and 05.

TABLE III. Group A inspection for device types 02 and 05 - Continued.
Terminal conditions (pins not designated may be high > 2.0 V. or low < V_t/max. or 0.001)

See footnotes at end of device types 02 and 05.

TABLE III. Group A inspection for device types 02 and 05 - Continued.
 Terminal conditions (pins not designated may be high > 2.0 V; or low < V₁ [max]; or open)

See footnotes at end of device types 02 and 05.

TABLE III. Group A inspection for device types 02 and 05 - Continued.

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- NOTES:**

 1. $C = \begin{cases} 3.0 \text{ V} & \text{if } 0.2 \\ 0 \text{ V} & \text{if } 0.2 \end{cases}$
 2. Input voltages are: $A = 2.4 \text{ V}$; $B = 0.4 \text{ V}$ except where $A = 2.8 \text{ V}$; $B = 1.1 \text{ V}$ for device type 02 only.
 3. The measurement terminal is all outputs. Output voltages shall be either:
 $H = 2.4 \text{ V}$ minimum and $L = 0.4 \text{ V}$ maximum when using a high speed checker double comparator; or
 $H \geq 1.5 \text{ V}$ and $L \leq 1.5 \text{ V}$ when using a high speed checker single comparator.
 4. $X = \text{Don't care.}$
 5. 7 = High impedance - The maximum current into or out of the disabled output shall be ...

Device type	V_{out}	0.4 V	2.4 V	0.4 V	2.4 V	0.5
$B_3 - B_0$	-50 μ A	200 μ A	-200 μ A	100 μ A		

6. Test numbers [59 through 21] shall be run in sequence

TABLE III. Group A inspection for device types 03 and 06
Terminal conditions (pins not designated may be high > 2.0 V; or low < V_{L(max)}; or open)

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be high $\geq 2.0\text{ V}$; or $T_{ow} \leq V_{IL}(\text{max})$; or open)

Subgroup	Symbol	MIL-STD-883 Test No.	Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Meas. terminal	Test limits			
				R _{LE}	R ₀	A ₀	BUS ₀	GND	BUS ₁	A ₁	B ₁	4.5 V	4 mA	GND	0 mA	R ₂	A ₂	BUS ₂	GND	A ₃	R ₃	v _{CC}	DRCP	Min	Max	Unit		
1	V _{OL6} (03,06)	3007	30	GND	4 mA			GND	4.5 V			4 mA	4.5 V	GND									4.5 V	R ₀	0.4	V		
			31																					R ₁				
			32																					R ₂				
			33																					R ₃				
			34																					0.00				
	V _{OL7} (03,06)		35																						R ₀	0.45		
			36																						R ₁			
			37																						R ₂			
			38																						R ₃			
			39																						0.00			
	V _{OL8} (03,06)		40																						R ₀	0.5		
			41																						R ₁			
			42																						R ₂			
			43																						R ₃			
			44																						0.00			
	I _{IL1} (03)	3009	45																						R ₀	0.5		
			46																						R ₁			
			47																						R ₂			
	I _{IL2} (06)		48																						R ₃			
			49																						0.36			
	I _{IL3} (03,06)		50																						R ₀	-0.36		
			51																						R ₁	-0.36		
			52																						R ₂	-0.36		
			53																						R ₃	-0.36		
			54																						0.00			
			55																						DRCP			
			56																						DRCP			
	I _{TH1} (03,06)	3010	57																						DRCP			
			58																						DRCP			
			59																						DRCP			
			60																						DRCP			
			61																						DRCP			
			62																						DRCP			
			63																						DRCP			
			64																						DRCP			

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be high > 2.0 V; or low < V_{IL} (max); or open)

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued,
Terminal conditions: (pins not designated may be high ≥ 2.0 V; or $T_{ow} \leq V_{IL(max)}$; or open)

Subgroup	Symbol	MIL-STD-883 method	Pin Test No.	1 RLE	2 R ₀	3 BUS ₀	4 GND	5 BUS ₁	6 GND	7 A ₁	8 R ₁	9 BE	10 GND	11 ODD	12 R ₂	13 A ₂	14 GND	15 BUS ₂	16 GND	17 A ₃	18 DRCP	19 V _{CC}	R ₃	Meas. terminal	Test limits	
1	I _{ZH4} (1ow) (06)	T _C = +25°C	97		GND	2.4 V	GND		4.5 V																	50 mA
			98																							
			99																							
			100																							
	I _{ZH5} (1ow) (03,06)		101																							
			102																							
			103																							
			104																							
	I _{ZL1} (high) (03,06)		105																							
			106																							
			107																							
			108																							
	I _{ZH1} (high) (03,06)		109																							
			110																							
			111																							
			112																							
	I _{ZL2} (high) (03)		113																							
			114																							
			115																							
			116																							
	I _{ZL3} (high) (06)		117																							
			118																							
			119																							
			120																							
	I _{ZH2} (high) (03)		121																							
			122																							
			123																							
			124																							
	I _{ZH3} (high) (06)		125																							
			126																							
			127																							
			128																							

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
terminal conditions (pins not designated may be high > 2.0 V; or low < V_L [max]; or open)

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be high $\geq 2.0\text{ V}$; or low $\leq V_{IL(\text{max})}$; or open)

Subgroup	Symbol	MIL-STD-883 Test No.	P_{IN}	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Meas. terminal	Test limits	
			R _{LE}	R _O	A ₀	BUS ₀	GND	BUS ₁	A ₁	R ₁	DRCP	ODD	OE	R ₂	A ₂	BUS ₂	GND	BUS ₃	A ₃	R ₃	DRCP	V _{CC}	Min	Max	Unit	
1	$V_{IC} = +25^\circ\text{C}$	158																						-1.2	V	
	$V_{IC} = 03, 06$	159																						-1.2	V	
2	Same tests, terminal conditions and limits for subgroup 1 except $T_C = +125^\circ\text{C}$ and V_{IC} tests are omitted.																									
3	Same tests, terminal conditions and limits for subgroup 1 except $T_C = -55^\circ\text{C}$ and V_{IC} tests are omitted.																									
	$T_C = +25^\circ\text{C}$	3014		161	B	X	B	B	L	B	X	GND	X	B	B	X	B	B	X	B	X	B	4.5 V	All outputs		
				162	B	B	B	A	L	B	H		H	H	H	H	H	H	H	H	H	H				
				163	B	B	B	A	L	B	H		H	H	H	H	H	H	H	H	H	H				
				164	B	B	B	A	L	B	H		H	H	H	H	H	H	H	H	H	H				
				165	B	B	B	A	L	B	H		H	H	H	H	H	H	H	H	H	H				
				166	B	B	B	A	L	B	H		H	H	H	H	H	H	H	H	H	H				
				167	B	B	B	A	L	B	H		H	H	H	H	H	H	H	H	H	H				
				168	A	B	B	A	Z	A	A		Z	Z	Z	Z	Z	Z	Z	Z	Z	Z				
				169	A	B	B	A	Z	A	A		Z	Z	Z	Z	Z	Z	Z	Z	Z	Z				
				170	A	B	B	A	Z	A	A		Z	Z	Z	Z	Z	Z	Z	Z	Z	Z				
				171	B	B	B	A	A	A	A		A	A	A	A	A	A	A	A	A	A				
				172	B	B	B	A	A	A	A		A	A	A	A	A	A	A	A	A	A				
				173	B	B	B	A	A	A	A		A	A	A	A	A	A	A	A	A	A				
				174	A	B	B	A	A	A	A		A	A	A	A	A	A	A	A	A	A				
				175	A	B	B	A	A	A	A		A	A	A	A	A	A	A	A	A	A				
				176	A	B	B	A	A	A	A		A	A	A	A	A	A	A	A	A	A				
				177	A	B	B	A	A	A	A		A	A	A	A	A	A	A	A	A	A				
				178	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				179	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				180	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				181	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				182	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				183	A	B	B	A	A	A	A		A	A	A	A	A	A	A	A	A	A				
				184	A	B	B	A	A	A	A		A	A	A	A	A	A	A	A	A	A				
				185	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				186	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				187	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				188	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				189	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				190	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				191	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				192	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				193	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				194	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				195	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				196	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				197	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				198	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				199	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				200	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				201	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				202	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				203	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				204	A	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				205	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				206	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				
				207	B	B	B	A	A	A	A		B	B	B	B	B	B	B	B	B	B				

FUNCTIONAL TESTS

 $\frac{2}{3}, \frac{3}{4}, \frac{3}{5}$

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL(\max)}$; or open)

Subgroup	Symbol	MIL-STD-883 method	Pin Test No.	1 R _E	2 R ₀	3 A ₀	4 BUS ₀	5 GND	6 BUS ₁	7 A ₁	8 R ₁	9 BUS ₂	10 GND	11 R ₂	12 BUS ₃	13 GND	14 A ₂	15 BUS ₂	16 GND	17 A ₃	18 R ₃	19 DRCP	20 V _{CC}	Meas. terminal	Test limits	
T _C = +25°C	TEST ₀₃	3014	208 209 210 211 212	B Z H L B	A X B A* B*	L B B A* B*	GND B* B* B	L A A L B L B	Z X B H A L B	A L B B A* B*	R ₁ H A L B	B GND B H B	X B H A L B	Z A B B B	X B H A L B	Z A B B B	A GND B H B	Z A B B B	A GND B H B	Z A B B B	A GND B H B	Z A B B B	4.5 V	A11 outputs	{ 2/ $\sqrt{3}$, 5/ $\sqrt{6}$, 6/	
T _C = +25°C	TEST ₀₆																									
8	Repeat subgroup 7 at T _C = -55°C and T _C = +125°C																									
T _C = +25°C	t _{PHL} ₍₀₃₎		3003	213																						
					214																					
					215																					
					216																					
	t _{PHL} ₍₀₆₎					217																				
						218																				
						219																				
						220																				
	t _{PLH} ₍₀₃₎						221																			
							222																			
							223																			
							224																			
	t _{PLH} ₍₀₆₎							225																		
								226																		
								227																		
								228																		
	t _{PZL} _(03,06)								229																	
									230																	
									231																	
									232																	
	t _{PZH} ₍₀₆₎									233																
										234																
										235																
										236																
	t _{PLZ} ₍₀₃₎										237															
											238															
											239															
											240															

See Footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be high \geq 2.0 V; or $T_{low} \leq V_{IL(max)}$; or open)

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL}$ (max); or open)

Subgroup	Symbol	MIL-STD-883 method	Pin Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Test limits
			R ₀	R ₀	BUS ₀	GND	BUS ₁	A ₁	R ₁	B/E	QD	OE	R ₂	BUS ₂	A ₂	GND	BUS ₃	A ₃	R ₃	DRCP	V _{CC}	Meas. terminal	Min. Max. Unit	
9 $T_C = +25^\circ C$	$t_{PHL2}(03)$	3003	273	GND	OUT	IN-D	GND	IN-D	GND	OUT	4.5 V	IN-E	OUT	IN-D	IN-D	GND	IN-D	IN-D	IN-D	OUT	OUT	5.0 V	R ₀ R ₁ R ₂ R ₃	3 22 ns
	$t_{PHL2}(06)$		274	1	275	276																		
	$t_{PLH2}(03)$		277	00T	00T	IN-D	IN-D	IN-D	IN-D	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	R ₀ R ₁ R ₂ R ₃	21 ns
	$t_{PLH2}(06)$		278	279	280																			
	$t_{PHL2}(03)$		281	282	283	284																		
	$t_{PHL2}(06)$		285	286	287	288																		
	$t_{PHL2}(03)$		289	290	291	292																		
	$t_{PHL2}(06)$		293	294	295	296																		
	$t_{PHL3}(03)$		297	298	299	300																		
	$t_{PHL3}(06)$		301	302	303	304																		

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal 1 conditions (pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL(max)}$; or open)

Subgroup	Symbol	MIL-STD-883 method	Pin Test No.	RLE	R ₀	IN-G	A ₀	BTS ₀	GND	BTS ₁	A ₁	R ₁	OUT	BE	000	4.5 V	GND	BTS ₂	A ₂	R ₂	OUT	IN-F	GND	BTS ₃	A ₃	R ₃	DRCP	V _{CC}	Meas. terminal	Test limits	
9	t_{PLH3} (03)	3003	305	306	307	308																									
	t_{PLH3} (06)																														
	t_{PHL4} (03) (06)																														
	t_{PHL4} (03) (06)																														
	t_{PLH5} (03) (06)																														
	t_{PLH5} (03) (06)																														
	t_{PHL6} (03) (06)																														
	t_{PHL6} (03) (06)																														
10	t_{PLH1} (03)																														
	t_{PLH1} (06)																														

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or low $\leq V_{IL(max)}$; or open)

Subgroup	Symbol	MIL-STD-883 Method	Pin Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Test Units				
																								Max	Min	Unit		
10 $T_c = +125^\circ C$	t_{PLH1} (03)	3003	333	334	335	336																					40	ns
	t_{PLH1} (06)																											
	t_{PLH1} (03,06)																											
	t_{PLH1} (06)																											
	t_{PLZ1} (03)																											
	t_{PLZ1} (06)																											
	t_{PHZ1} (03)																											
	t_{PHZ1} (06)																											
	t_{PHL2} (03)																											

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V or $T_{\text{low}} \leq V_{IL(\text{max})}$; or open)

Subgroup	Symbol	MIL-STD-883 Method	Pin Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Test limits				
				R ₀	A ₀	BUS ₀	GND	BUS ₁	A ₁	R ₁	BE	ODD	OE	R ₂	IN-E	BUS ₂	GND	BUS ₃	A ₃	R ₃	DRCP	V _{CC}	Meas. terminal	Min	Max	Unit		
10	t _{PHL2} (06)	3003	365	GND	OUT			IN-D	GND			4.5 V											5.0 V	R ₀	30	ns		
T _C = +25°C			366																					R ₁	R ₂	R ₃		
	t _{PLH2} (03)		367																						R ₀	37		
			368																					R ₁	R ₂	R ₃		
	t _{PLH2} (06)		369																						R ₀	33		
			370																						R ₁	R ₂	R ₃	
	t _{PLH2} (03)		371																						R ₀	28		
			372																						R ₁	R ₂	R ₃	
	t _{PLH2} (06)		373																						R ₀	28		
			374																						R ₁	R ₂	R ₃	
	t _{PLH2} (03)		375																						R ₀	26		
			376																						R ₁	R ₂	R ₃	
	t _{PLH2} (03)		377																						R ₀	26		
			378																						R ₁	R ₂	R ₃	
	t _{PLH2} (06)		379																						R ₀	26		
			380																						R ₁	R ₂	R ₃	
	t _{PLH2} (06)		381																						R ₀	26		
			382																						R ₁	R ₂	R ₃	
	t _{PLH2} (03)		383																						R ₀	26		
			384																						R ₁	R ₂	R ₃	
	t _{PLH2} (06)		385																						R ₀	28		
			386																						R ₁	R ₂	R ₃	
	t _{PLH2} (03)		387																						R ₀	28		
			388																						R ₁	R ₂	R ₃	
	t _{PLH2} (06)		389																						R ₀	26		
			390																						R ₁	R ₂	R ₃	
	t _{PLH2} (03)		391																						R ₀	28		
			392																						R ₁	R ₂	R ₃	
	t _{PLH2} (06)		393																						R ₀	28		
			394																						R ₁	R ₂	R ₃	
	t _{PLH2} (03)		395																						R ₀	28		
			396																						R ₁	R ₂	R ₃	

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; or $T_{ow} \leq t_{il,max}$; or open)

Subgroup	Symbol	MIL-STD-883 method	Pin Test No.	R _L	A ₀	A ₁	R ₁	B _E	0DD	IN-D	GND	B _{S1}	A ₂	B _{S2}	GND	B _{S3}	A ₃	R ₃	DRCP	V _{CC}	Meas. terminal	Test limits			
																						Min	Max	Unit	
10	$t_{pl,22}(06)$		3003	397	GND	OUT				IN-D	GND												26	ns	
$T_C = +125^\circ C$				398																					
	$t_{PH22}(03)$			399																					
				400																					
	$t_{PH22}(06)$			401	OUT					IN-D															
				402																					
				403																					
				404																					
	$t_{PH3}(03)$			405	OUT					IN-D															
				406																					
				407																					
				408																					
	$t_{PH3}(06)$			409	IN-G	OUT				IN-F															
				410																					
				411																					
				412																					
	$t_{PLH3}(03)$			413	OUT					IN-F															
				414																					
				415																					
				416																					
	$t_{PLH3}(06)$			417	OUT					IN-F															
				418																					
				419																					
				420																					
	$t_{PLH3}(06)$			421	OUT					IN-F															
				422																					
				423																					
				424																					
	$t_{PLH4}(03)$			425																					
				426																					
				427																					
				428																					

See footnotes at end of device types 03 and 06.

TABLE III. Group A inspection for device types 03 and 06 - Continued.
Terminal conditions (pins not designated may be tied to ground or V_{IL(max)}; or open)

Subgroup	Symbol	MIL-STD-883 Test No.	Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Test limits	
			R ₀	A ₀	BUS ₀	GND	BUS ₁	A ₁	R ₁	BUS ₂	A ₂	R ₂	OE	0DD	OE	IN-H	IN-I	IN-H	IN-I	IN-H	IN-I	Meas. terminal	Min	Max	Unit
10 $T_C = +125^\circ C$	t _{pLHS} (03) (06)	3003	429 430																				0.00	40	ns
	t _{pHL5} (03) (06)			431 432																				36	36
	t _{pHL6} (03) (06)				433 434	IN-J																		40	36
	t _{pHL6} (03) (06)					435 436																		36	36
11	Same tests, terminal conditions and units as for subgroup 9, except $T_C = +125^\circ C$.																								

NOTES:

1. C = 

2. Input voltages are: A = 2.4 V; B = 0.4 V except * where A = 2.8 V; B = 1.1 V for device type 03 only.

3. The measurement terminal is all outputs. Output voltages shall be either:

H = 2.4 V minimum and L = 0.4 V maximum when using a high speed checker double comparator; or
H ≥ 1.5 V and L ≤ 1.5 V when using a high speed checker single comparator.

4. X = Don't care.

5. Z = High impedance - The maximum current into or out of the disabled outputs shall be as shown:

Device type	03				06			
	V _{out}	0.4 V	2.4 V	0.4 V	2.4 V	0.4 V	2.4 V	0.4 V
R ₃ - R ₀	±20 μ A	±20 μ A	±20 μ A	±20 μ A	±20 μ A	±20 μ A	±20 μ A	±20 μ A
B ₃ - B ₀	-50 μ A	-50 μ A	200 μ A	-200 μ A	100 μ A	-100 μ A	200 μ A	-200 μ A

6. Test numbers 161 through 212 shall be run in sequence.

7. Maximum limits for device types are: 03 = -20, 06 = -50.

8. Maximum limits for device types are: 03 = 20, 06 = 50.

6.4 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-M-38510, MIL-STD-1331, and as follows:

GND - - - - -	Electrical ground (common terminal)
VIN - - - - -	Voltage level at an input terminal
TC - - - - -	Case temperature
FOSC - - - - -	Oscillating frequency

6.5 Logistic support. Lead materials and finishes (see 3.3), are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2) and lead material and finish C (see 3.3). Longer length leads and lead forming shall not affect the part number.

6.6 Generic test data. Generic test data may be used to satisfy the requirements of 4.4.3. Group C generic test data shall be on date codes no more than one year old and on a die in the same microcircuit group (see appendix E of MIL-M-38510) with the same material, design and process and from the same plant as the die represented. Group D (see 4.4.4) generic data shall be on date codes no more than one year old and on the same package type (see terms, definitions, and symbols of MIL-M-38510) and from the same plant as the package represented. The vendor is required to retain the generic data for a period of not less than 36 months from the date of shipment.

6.7 Substitutability. 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-38510 device types and may have slight physical variations in relation to case size. The presence of this information shall 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-M-38510.

Military device type	Generic-industry type
01	2905
02	2906
03	2907
04	2915
05	2916
06	2917

6.8 Ordering guidance. Since the qualification and certification requirements have been removed from the specification, orders may be placed immediately.

6.9 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:

Army - ER
Navy - EC
Air Force - 17

Preparing activity:

Air Force - 17

(Project 5962-0603-7)

Review activities:

Army - AR, MI
Navy - OS, SH
Air Force - 11, 19, 85, 99
DLA - ES

User activities:

Army - SM
Navy - AS, CG, MC

Agent:

DLA - ES