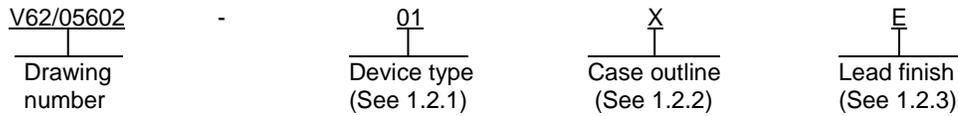




1. SCOPE

1.1 Scope. This drawing documents the general requirements of a high performance octal bus transceiver with adjustable output voltage and three-state outputs microcircuit, with an operating temperature range of -40°C to +85°C.

1.2 Vendor Item Drawing Administrative Control Number. The manufacturer's PIN is the item of identification. The vendor item drawing establishes an administrative control number for identifying the item on the engineering documentation:



1.2.1 Device type(s). 1/

<u>Device type</u>	<u>Generic</u>	<u>Circuit function</u>
01	SN74LVCC3245A-EP	Octal bus transceiver with adjustable output voltage and three-state outputs

1.2.2 Case outline(s). The case outlines are as specified herein.

<u>Outline letter</u>	<u>Number of pins</u>	<u>JEDEC PUB 95</u>	<u>Package style</u>
X	24	JEDEC M0-153	Plastic small outline package
Y	24	JEDEC M0-153	Plastic small outline package
Z	24	JEDEC MS-013	Plastic small outline package
U	24		Plastic small outline package

1.2.3 Lead finishes. The lead finishes are as specified below or other lead finishes as provided by the device manufacturer:

<u>Finish designator</u>	<u>Material</u>
A	Hot solder dip
B	Tin-lead plate
C	Gold plate
D	Palladium
E	Gold flash palladium
Z	Other

1/ Users are cautioned to review the manufacturers data manual for additional user information relating to this device.

<b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b>	SIZE <b>A</b>	CODE IDENT NO. <b>16236</b>	DWG NO. <b>V62/05602</b>
		REV <b>A</b>	PAGE <b>2</b>

1.3 Absolute maximum ratings. 2/

Supply voltage ranges, ( $V_{CCA}$ and $V_{CCB}$ ) .....	-0.5 V to +6.0 V
Input voltage range, ( $V_{IN}$ ): All A ports 3/ .....	-0.5 V to $V_{CCA} + 0.5$ V
All B ports 4/ .....	-0.5 V to $V_{CCB} + 0.5$ V
Except I/O ports 3/ .....	-0.5 V to $V_{CCA} + 0.5$ V
Output voltage range, ( $V_O$ ): 3/ All A ports .....	-0.5 V to $V_{CCA} + 0.5$ V
All B ports .....	-0.5 V to $V_{CCB} + 0.5$ V
Input clamp current, $I_{IK}$ ( $V_{IN} < 0$ ) .....	-50 mA 3/
Output clamp current, $I_{OK}$ ( $V_O < 0$ ) .....	-50 mA
Continuous output current, ( $I_O$ ) .....	$\pm 50$ mA
Continuous current through $V_{CCA}$ , $V_{CCB}$ , or GND .....	$\pm 100$ mA
Package thermal impedance, ( $\theta_{JA}$ ) 5/ : Case X .....	+88°C/W
Case Y .....	+63°C/W
Case Z .....	+46°C/W
Case U .....	+65°C/W
Storage temperature range, ( $T_{STG}$ ) .....	-65°C to +150°C

1.4 Recommended operating conditions. 6/

	$V_{CCA}$	$V_{CCB}$	Min	Max	Unit
Supply voltage, ( $V_{CCA}$ )			2.3	3.6	V
Supply voltage, ( $V_{CCB}$ )			3.0	5.5	V
High level input voltage, ( $V_{IHA}$ )	2.3 V	3.0 V	1.7		V
	2.7 V	3.0 V	2		
	3.0 V	3.6 V	2		
	3.6 V	5.5 V	2		
High level input voltage, ( $V_{IHB}$ )	2.3 V	3.0 V	2		V
	2.7 V	3.0 V	2		
	3.0 V	3.6 V	2		
	3.6 V	5.5 V	3.85		
Low level input voltage, ( $V_{ILA}$ )	2.3 V	3.0 V		0.7	V
	2.7 V	3.0 V		0.8	
	3.0 V	3.6 V		0.8	
	3.6 V	5.5 V		0.8	
Low level input voltage, ( $V_{ILB}$ )	2.3 V	3.0 V		0.8	V
	2.7 V	3.0 V		0.8	
	3.0 V	3.6 V		0.8	
	3.6 V	5.5 V		1.65	

2/ Stresses beyond those listed under “absolute maximum rating” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

3/ This value is limited to 4.6 V maximum.

4/ This value is limited to 6.0 V maximum.

5/ The package thermal impedance is calculated in accordance with JEDS 51-7.

6/ All unused inputs of the device must be held at the associated  $V_{CC}$  or GND to ensure proper device operation. Refer to the manufacturer for more details.

<b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b>	<b>SIZE A</b>	<b>CODE IDENT NO. 16236</b>	<b>DWG NO. V62/05602</b>
		REV A	PAGE 3

1.5 Recommended operating conditions - continued. 6/

	V <sub>CCA</sub>	V <sub>CCB</sub>	Min	Max	Unit
High level input voltage (control pins) (V <sub>IH</sub> ) (Referenced to V <sub>CCA</sub> )	2.3 V	3.0 V	1.7		V
	2.7 V	3.0 V	2		
	3.0 V	3.6 V	2		
	3.6 V	5.5 V	2		
Low level input voltage (control pins) (V <sub>IL</sub> ) (Referenced to V <sub>CCA</sub> )	2.3 V	3.0 V		0.7	V
	2.7 V	3.0 V		0.8	
	3.0 V	3.6 V		0.8	
	3.6 V	5.5 V		0.8	
Input voltage, (V <sub>IA</sub> )			0	V <sub>CCA</sub>	V
Input voltage, (V <sub>IB</sub> )			0	V <sub>CCB</sub>	V
Output voltage, (V <sub>OA</sub> )			0	V <sub>CCA</sub>	V
Output voltage, (V <sub>OB</sub> )			0	V <sub>CCB</sub>	V
High level output current, (I <sub>OHA</sub> )	2.3 V	3.0 V		-8	mA
	2.7 V	3.0 V		-12	
	3.3 V	3.0 V		-24	
High level output current, (I <sub>OHB</sub> )	2.3 V	3.3 V		-12	mA
	2.7 V	3.3 V		-12	
	3.3 V	3.0 V		-24	
Low level output current, (I <sub>OLA</sub> )	2.3 V	3.3 V		8	mA
	2.7 V	3.3 V		12	
	3.3 V	3.0 V		24	
Low level output current, (I <sub>OLB</sub> )	2.3 V	3.3 V		12	mA
	2.7 V	3.3 V		12	
	3.3 V	3.0 V		24	
Input transition rise or fall rate, ( $\Delta t/\Delta v$ )				10	ns/V
Operating free air temperature, (T <sub>A</sub> )			-40	85	°C

<b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b>	SIZE <b>A</b>	CODE IDENT NO. <b>16236</b>	DWG NO. <b>V62/05602</b>
		REV <b>A</b>	PAGE <b>4</b>

2. APPLICABLE DOCUMENTS

JEDEC – SOLID STATE TECHNOLOGY ASSOCIATION (JEDEC)

JEDEC PUB 95 – Registered and Standard Outlines for Semiconductor Devices

(Copies of these documents are available online at <http://www.jedec.org> or from JEDEC – Solid State Technology Association, 3103 North 10th Street, Suite 240–S, Arlington, VA 22201.)

3. REQUIREMENTS

3.1 Marking. Parts shall be permanently and legibly marked with the manufacturer’s part number as shown in 6.3 herein and as follows:

- A. Manufacturer’s name, CAGE code, or logo
- B. Pin 1 identifier
- C. ESDS identification (optional)

3.2 Unit container. The unit container shall be marked with the manufacturer’s part number and with items A and C (if applicable) above.

3.3 Electrical characteristics. The maximum and recommended operating conditions and electrical performance characteristics are as specified in 1.3, 1.4, and table I herein.

3.4 Design, construction, and physical dimension. The design, construction, and physical dimensions are as specified herein.

3.5 Diagrams.

3.5.1 Case outline(s). The case outline(s) shall be as shown in 1.2.2 and figure 1.

3.5.2 Terminal connections. The terminal connections shall be as shown in figure 2.

3.5.3 Logic diagram. The logic diagram shall be as specified in figure 3.

3.5.4 Function table. The function table shall be as specified in figure 4.

3.5.5 Timing waveforms. The timing waveforms shall be as shown in figure 5.

<b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b>	<b>SIZE A</b>	<b>CODE IDENT NO. 16236</b>	<b>DWG NO. V62/05602</b>
		REV      A	PAGE    5

TABLE I. Electrical performance characteristics. 1/

Test	Symbol	Test condition 2/	V <sub>CCA</sub>	V <sub>CCB</sub>	Limits		Unit	
					Min	Max		
High level output voltage	V <sub>OHA</sub>	I <sub>OH</sub> = -100 μA	3.0 V	3.0 V	2.9		V	
		I <sub>OH</sub> = -8 mA	2.3 V	3.0 V	2.0			
		I <sub>OH</sub> = -12 mA	2.7 V	3.0 V	2.2			
			3.0 V	3.0 V	2.4			
		I <sub>OH</sub> = -24 mA	3.0 V	3.0 V	2.2			
	2.7 V		4.5 V	2.0				
	V <sub>OHB</sub>	I <sub>OH</sub> = -100 μA	3.0 V	3.0 V	2.9		V	
		I <sub>OH</sub> = -12 mA	2.3 V	3.0 V	2.4			
			2.7 V	3.0 V	2.4			
		I <sub>OH</sub> = -24 mA	3.0 V	3.0 V	2.2			
2.7 V	4.5 V		3.2					
Low level output voltage	V <sub>OLA</sub>	I <sub>OL</sub> = 100 μA	3.0 V	3.0 V		0.1	V	
		I <sub>OL</sub> = 8 mA	2.3 V	3.0 V		0.6		
		I <sub>OL</sub> = 12 mA	2.7 V	3.0 V		0.5		
		I <sub>OL</sub> = 24 mA	3.0 V	3.0 V		0.5		
			2.7 V	4.5 V		0.5		
	V <sub>OLB</sub>	I <sub>OL</sub> = 100 μA	3.0 V	3.0 V		0.1	V	
		I <sub>OL</sub> = 12 mA	2.3 V	3.0 V		0.4		
			3.0 V	3.0 V		0.5		
		I <sub>OL</sub> = 24 mA	3.0 V	3.0 V		0.5		
			3.0 V	4.5 V		0.5		
Input current	Control inputs	I <sub>I</sub>	V <sub>I</sub> = V <sub>CCA</sub> or GND	3.6 V	3.6 V		±1	μA
				3.6 V	5.5 V		±1	
High impedance state output current	A or B ports	I <sub>OZ</sub> 3/	V <sub>O</sub> = V <sub>CCA/B</sub> or GND, V <sub>I</sub> = V <sub>IL</sub> or V <sub>IH</sub>	3.6 V	3.6 V		±5	μA
Quiescent supply current	B to A	I <sub>CCA</sub>	A port = V <sub>CCA</sub> or GND, I <sub>O</sub> = 0	3.6 V	Open		50	μA
			B port = V <sub>CCB</sub> or GND, I <sub>O</sub> = 0	3.6 V	3.6 V		50	
	B to A	I <sub>CCB</sub>	A port = V <sub>CCA</sub> or GND, I <sub>O</sub> = 0	3.6 V	3.6 V		50	μA
				5.5 V			80	
Quiescent supply current delta	A port	ΔI <sub>CCA</sub>	V <sub>I</sub> = V <sub>CCA</sub> - 0.6 V, Other inputs at V <sub>CCA</sub> or GND OE at GND and DIR at V <sub>CCA</sub>	3.6 V	3.6 V		0.5	mA
	OE		V <sub>I</sub> = V <sub>CCA</sub> - 0.6 V, Other inputs at V <sub>CCA</sub> or GND DIR at V <sub>CCA</sub>	3.6 V	3.6 V		0.5	
	DIR		V <sub>I</sub> = V <sub>CCA</sub> - 0.6 V, Other inputs at V <sub>CCA</sub> or GND OE at GND	3.6 V	3.6 V		0.5	
	A port	ΔI <sub>CCB</sub> 4/	V <sub>I</sub> = V <sub>CCA</sub> - 0.6 V, Other inputs at V <sub>CCA</sub> or GND OE at GND and DIR at GND	3.6 V	5.0 V		1.5	

See notes at end of table.

<b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b>	<b>SIZE A</b>	<b>CODE IDENT NO. 16236</b>	<b>DWG NO. V62/05602</b>
		<b>REV A</b>	<b>PAGE 6</b>

TABLE I. Electrical performance characteristics - Continued. 1/

Test	Symbol	Test condition <u>2/</u>	V <sub>CCA</sub>	V <sub>CCB</sub>	Limits		Unit	
					Min	Max		
Input capacitance	Control inputs	C <sub>i</sub>	V <sub>I</sub> = V <sub>CCA</sub> or GND	Open	Open	4 Typ		pF
	A or B ports	C <sub>io</sub>	V <sub>O</sub> = V <sub>CCA/B</sub> or GND	3.3 V	5.0 V	18.5 Typ		
Power dissipation capacitance per transceiver	Output enabled	C <sub>pd</sub>	V <sub>CCA</sub> = 3.3 V, V <sub>CCB</sub> = 5.0 V, T <sub>A</sub> = 25°C C <sub>L</sub> = 50 pF, f = 10 MHz			38 Typ		pF
	Output disabled					4.5 Typ		

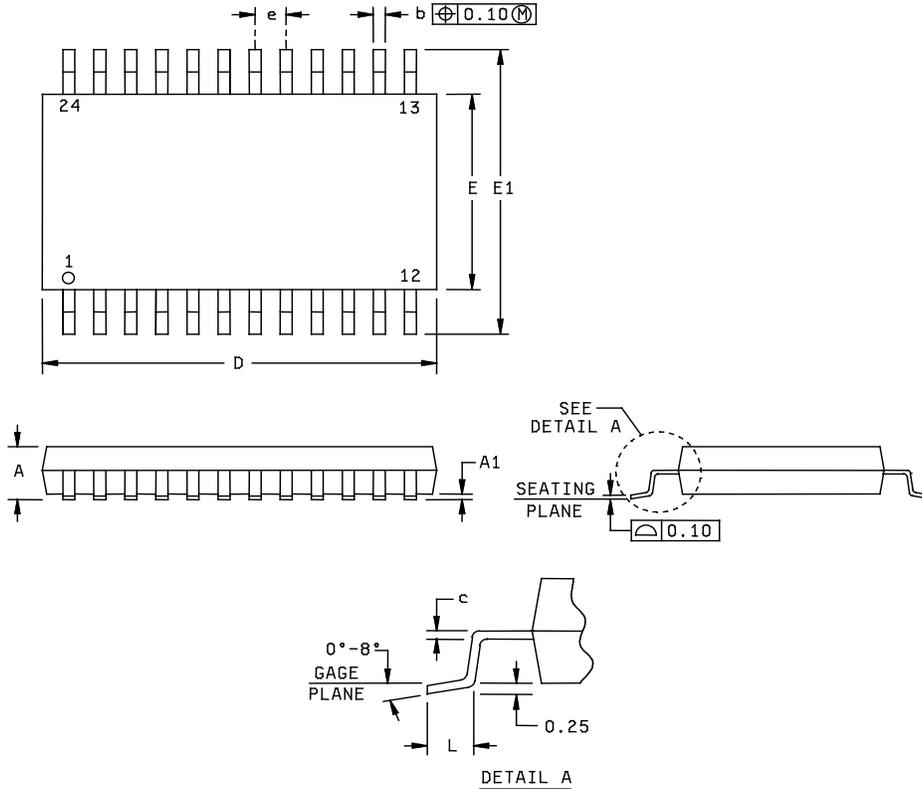
**Switching characteristics**

Test	From (Input)	To (Output)	Symbol	Test condition <u>3/</u>	V <sub>CCA</sub> = 2.5 V ± 0.2 V		V <sub>CCA</sub> = 2.7 V to 3.6 V		V <sub>CCA</sub> = 2.7 V to 3.6 V		Unit
					V <sub>CCB</sub> = 3.3 V ± 0.3 V		V <sub>CCB</sub> = 5.0 V ± 0.5 V		V <sub>CCB</sub> = 3.3 V ± 0.3 V		
					Min	Max	Min	Max	Min	Max	
Propagation delay high to low	A	B	t <sub>PHL</sub>	1	9.4	1	6	1	7.1	ns	
Propagation delay low to high			t <sub>PLH</sub>	1	9.1	1	5.3	1	7.2		
Propagation delay high to low	B	A	t <sub>PHL</sub>	1	11.2	1	5.8	1	6.4		
Propagation delay low to high			t <sub>PLH</sub>	1	9.9	1	7.0	1	7.6		
Propagation delay high to low	$\overline{\text{OE}}$	A	t <sub>PZL</sub>	1	14.5	1	9.2	1	9.7		
Propagation delay low to high			t <sub>PZH</sub>	1	12.9	1	9.5	1	9.5		
Propagation delay high to low	$\overline{\text{OE}}$	B	t <sub>PZL</sub>	1	13.0	1	8.1	1	9.2		
Propagation delay low to high			t <sub>PZH</sub>	1	12.8	1	8.4	1	9.9		
Propagation delay high to low	$\overline{\text{OE}}$	A	t <sub>PLZ</sub>	1	7.1	1	7.0	1	6.6		
Propagation delay low to high			t <sub>PHZ</sub>	1	6.9	1	7.8	1	6.9		
Propagation delay high to low	$\overline{\text{OE}}$	B	t <sub>PLZ</sub>	1	8.8	1	7.3	1	7.5		
Propagation delay low to high			t <sub>PHZ</sub>	1	8.9	1	7.0	1	7.9		

- 1/ Testing and other quality control techniques are used to the extent deemed necessary to assure product performance over the specified temperature range. Product may not necessarily be tested across the full temperature range and all parameters may not necessarily be tested. In the absence of specific parametric testing, product performance is assured by characterization and/or design.
- 2/ Test conditions are over recommended ranges of supply voltage and operating case temperature unless otherwise specified.
- 3/ For I/O ports, the parameter I<sub>OZ</sub> includes the input leakage current.
- 4/ This is the increase in supply current for each input that is at one of the specified voltage levels, rather than 0 V or the associated V<sub>CC</sub>.

<b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b>	<b>SIZE A</b>	<b>CODE IDENT NO. 16236</b>	<b>DWG NO. V62/05602</b>
		<b>REV A</b>	<b>PAGE 7</b>

Case X



Dimensions									
Symbol	Millimeters		Inches		Symbol	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A		1.20		.047	E	4.30	4.50	.169	.177
A1	0.05	0.15	.002	.006	E1	6.20	6.60	.244	.260
b	0.19	0.30	.007	.012	e	0.65 TYP		.026 TYP	
c	0.15 Nom		.006 Nom		L	0.50	0.75	.020	.030
D	7.70	7.90	.303	.311					

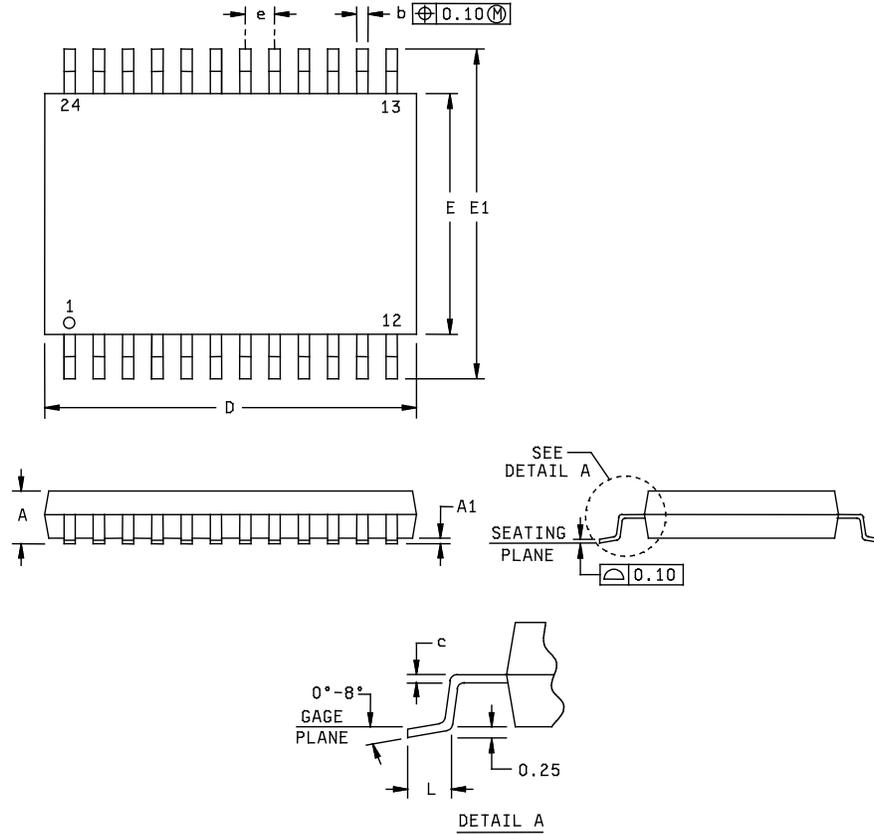
Notes:

1. This drawing is subject to change without notice.
2. Body dimensions do not include mold flash or protrusion not to exceed 0.15 mm.
3. Falls within JEDEC MO-153.

FIGURE 1. Case outlines.

DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO	SIZE A	CODE IDENT NO. 16236	DWG NO. V62/05602
		REV A	PAGE 8

Case Y



Dimensions									
Symbol	Millimeters		Inches		Symbol	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A		2.00		.079	E	5.00	5.60	.197	.220
A1	0.05		.002		E1	7.40	8.20	.291	.323
b	0.22	0.38	.009	.015	e	0.65 TYP		.026 TYP	
c	0.09	0.25	.004	.010	L	0.55	0.95	.022	.037
D	7.90	8.50	.311	.335					

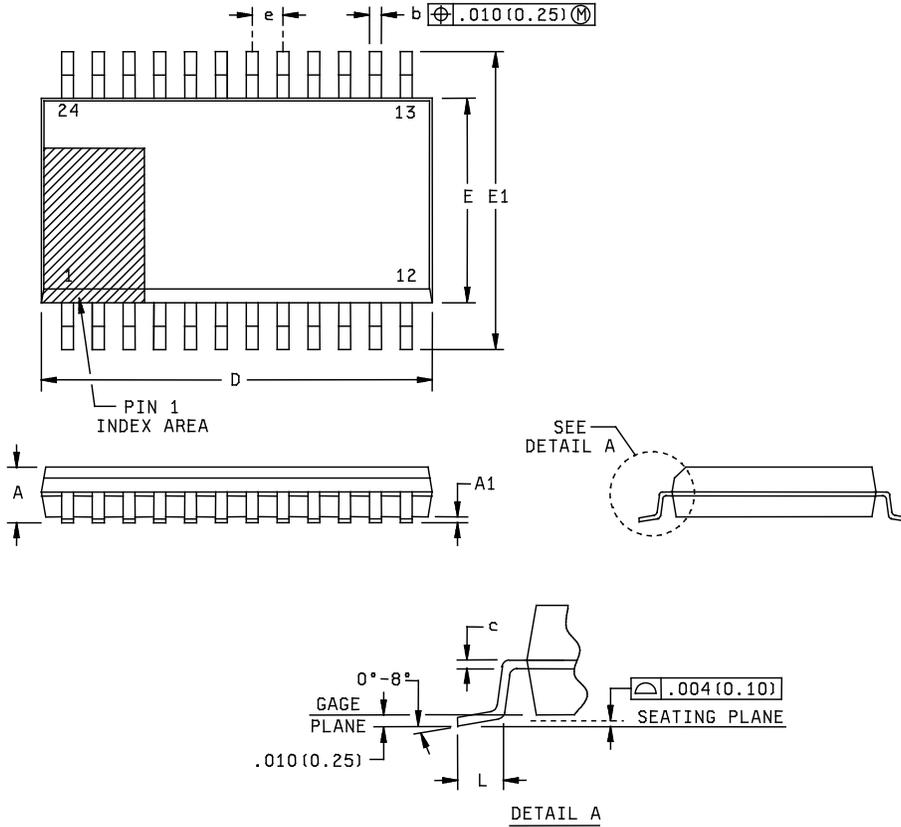
Notes:

1. This drawing is subject to change without notice.
2. Body dimensions do not include mold flash or protrusion not to exceed 0.15 mm.
3. Falls within JEDEC MO-150.

FIGURE 1. Case outline - Continued.

DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO	SIZE A	CODE IDENT NO. 16236	DWG NO. V62/05602
		REV A	PAGE 9

Case Z



Dimensions									
Symbol	Millimeters		Inches		Symbol	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A		2.65		.104	E	7.40	7.60	.291	.299
A1	0.10	0.30	.004	.012	E1	9.97	10.63	.393	.419
b	0.31	0.51	.012	.020	e	1.27 TYP		.050 TYP	
c	0.20	0.33	.008	.013	L	0.40	1.27	.016	.050
D	15.20	15.60	.598	.614					

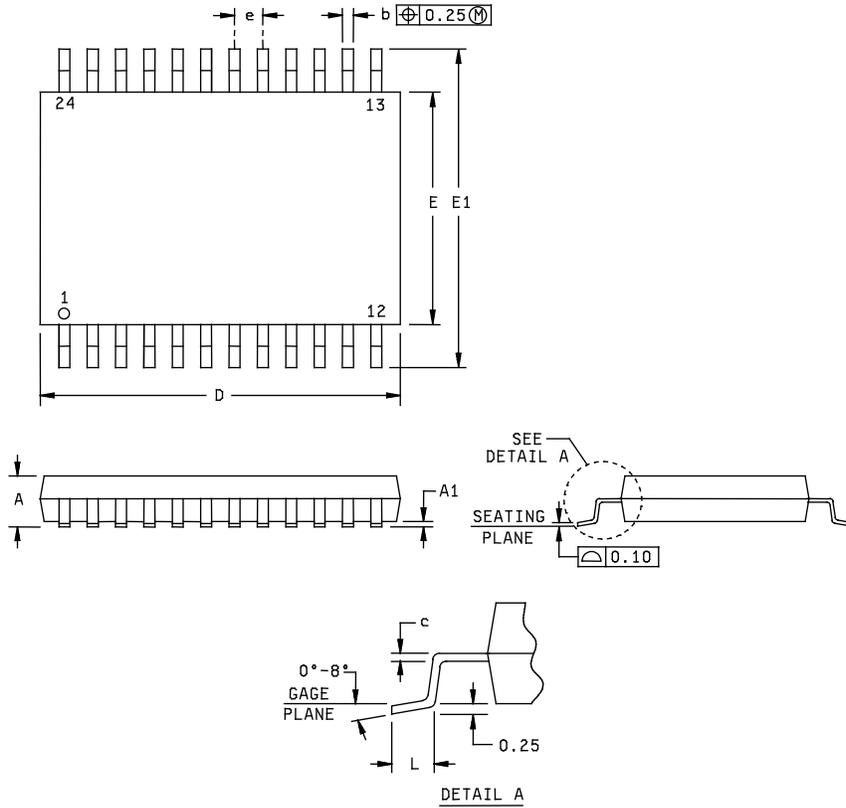
Notes:

4. This drawing is subject to change without notice.
5. Body dimensions do not include mold flash or protrusion not to exceed 0.15 mm.
6. Falls within JEDEC MO-150.

FIGURE 1. Case outline - Continued.

<b>DEFENSE SUPPLY CENTER, COLUMBUS</b> <b>COLUMBUS, OHIO</b>	<b>SIZE</b> <b>A</b>	<b>CODE IDENT NO.</b> <b>16236</b>	<b>DWG NO.</b> <b>V62/05602</b>
		<b>REV</b> <b>A</b>	<b>PAGE</b> <b>10</b>

Case U



Dimensions									
Symbol	Millimeters		Inches		Symbol	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A		2.00		.079	E	5.00	5.60	.197	.220
A1	0.05	0.15	.002	.006	E1	7.40	8.20	.291	.323
b	0.35	0.51	.014	.020	e	1.27 TYP		.050 TYP	
c	0.15 NOM		.006 NOM		L	0.55	1.05	.022	.041
D	14.70	15.30	.579	.602					

Notes:

1. This drawing is subject to change without notice.
2. Body dimensions do not include mold flash or protrusion not to exceed 0.15 mm.

FIGURE 1. Case outline - Continued.

DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO	SIZE <b>A</b>	CODE IDENT NO. <b>16236</b>	DWG NO. <b>V62/05602</b>
		REV <b>A</b>	PAGE <b>11</b>

Case X, Y, Z and U

Pin No.	Signal name	Pin No.	Signal name
1	V <sub>CCA</sub>	13	GND
2	DIR	14	B8
3	A1	15	B7
4	A2	16	B6
5	A3	17	B5
6	A4	18	B4
7	A5	19	B3
8	A6	20	B2
9	A7	21	B1
10	A8	22	$\overline{\text{OE}}$
11	GND	23	NC
12	GND	24	V <sub>CCB</sub>

NC: No internal connection

FIGURE 2. Terminal connections.

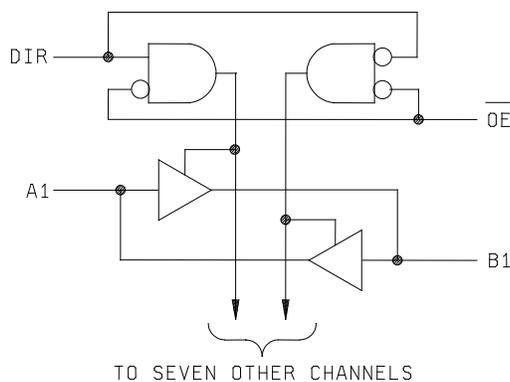


FIGURE 3. Logic diagram.

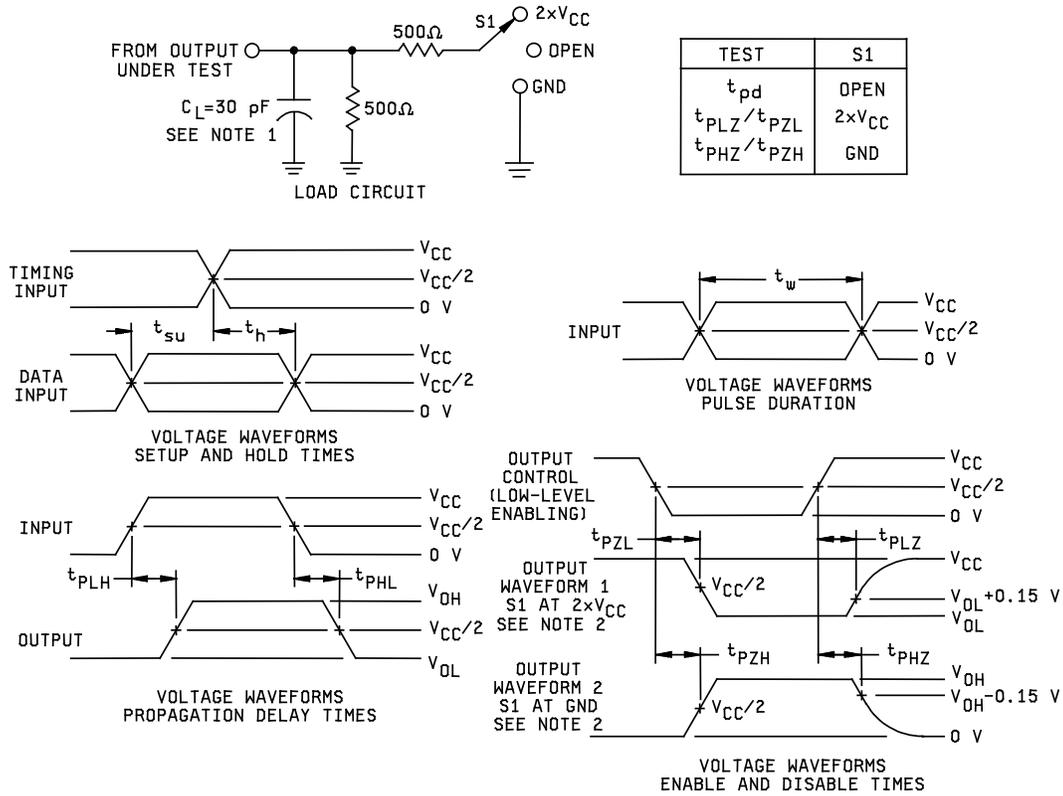
Inputs		Operation
$\overline{\text{OE}}$	DIR	
L	L	B data to A bus
L	H	A data to B bus
H	X	Isolation

(for each transceiver)

FIGURE 4. Function table.

<b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b>	<b>SIZE A</b>	<b>CODE IDENT NO. 16236</b>	<b>DWG NO. V62/05602</b>
		REV A	PAGE 12

Parameter measurement information for A port  
 $V_{CCA} = 2.5 \text{ V} \pm 0.2 \text{ V}$  and  $V_{CCB} = 3.3 \text{ V} \pm 0.3 \text{ V}$



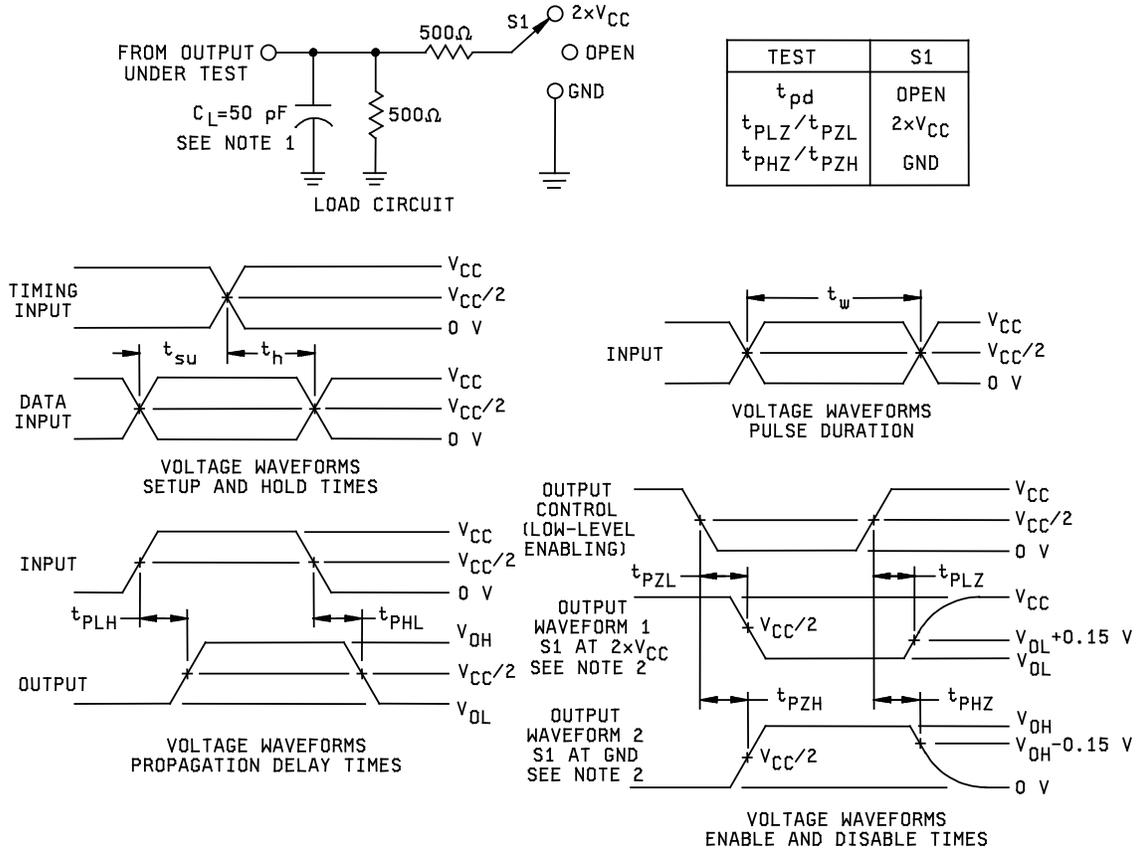
NOTES:

- $C_L$  includes probe and jig capacitance.
- Waveform 1 is for an output with internal conditions such that the output is low, except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high, except when disabled by the output control.
- All input pulses are supplied by generators having the following characteristics:  $PRR \leq 10 \text{ MHz}$ ,  $Z_o = 50\Omega$ ,  $t_r \leq 2 \text{ ns}$ ,  $t_f \leq 2 \text{ ns}$ .
- The outputs are measured one at a time, with one input transition per measurement.
- $t_{PLZ}$  and  $t_{PHZ}$  are the same as  $t_{dis}$ .
- $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{en}$ .
- $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{pd}$ .
- All parameters and waveforms are not applicable to all devices.

FIGURE 5. Timing waveforms.

<p><b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b></p>	<p><b>SIZE A</b></p>	<p><b>CODE IDENT NO. 16236</b></p>	<p><b>DWG NO. V62/05602</b></p>
		<p>REV A</p>	<p>PAGE 13</p>

Parameter measurement information for B port  
 $V_{CCA} = 2.5 \text{ V} \pm 0.2 \text{ V}$  and  $V_{CCB} = 3.3 \text{ V} \pm 0.3 \text{ V}$



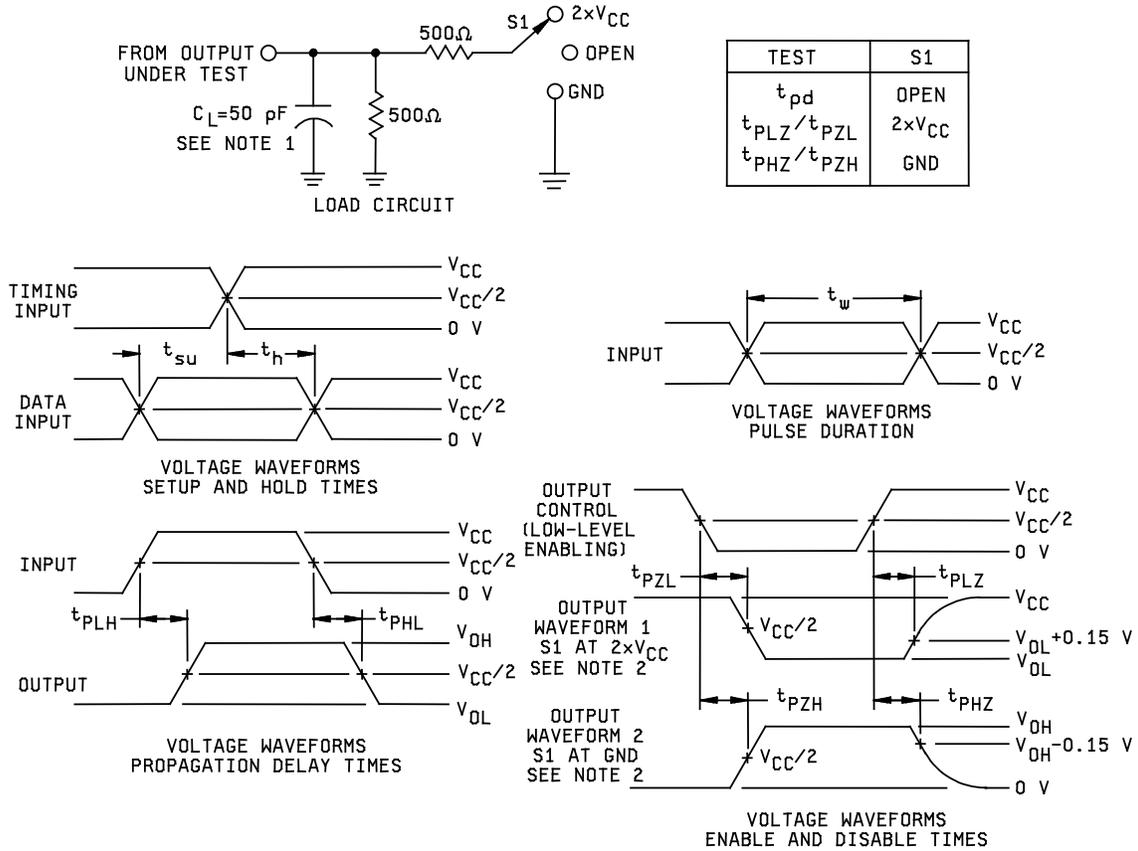
NOTES:

1.  $C_L$  includes probe and jig capacitance.
2. Waveform 1 is for an output with internal conditions such that the output is low, except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high, except when disabled by the output control.
3. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 10 \text{ MHz}$ ,  $Z_o = 50\Omega$ ,  $t_r \leq 0.2 \text{ ns}$ ,  $t_f \leq 0.2 \text{ ns}$ .
4. The outputs are measured one at a time, with one input transition per measurement.
5.  $t_{PLZ}$  and  $t_{PHZ}$  are the same as  $t_{dis}$ .
6.  $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{en}$ .
7.  $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{pd}$ .
8. All parameters and waveforms are not applicable to all devices.

FIGURE 5. Timing waveforms - Continued.

<b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b>	SIZE <b>A</b>	CODE IDENT NO. <b>16236</b>	DWG NO. <b>V62/05602</b>
		REV    A	PAGE    14

Parameter measurement information for B port  
 $V_{CCA} = 3.6 \text{ V}$  and  $V_{CCB} = 5.5 \text{ V}$



NOTES:

1.  $C_L$  includes probe and jig capacitance.
2. Waveform 1 is for an output with internal conditions such that the output is low, except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high, except when disabled by the output control.
3. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 10 \text{ MHz}$ ,  $Z_O = 50\Omega$ ,  $t_r \leq 0.2 \text{ ns}$ ,  $t_f \leq 0.2 \text{ ns}$ .
4. The outputs are measured one at a time, with one input transition per measurement.
5. All parameters and waveforms are not applicable to all devices.

FIGURE 5. Timing waveforms - Continued.

DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO	SIZE	CODE IDENT NO.	DWG NO.
	A	16236	V62/05602
	REV	A	PAGE 15

4. VERIFICATION

4.1 Product assurance requirements. The manufacturer is responsible for performing all inspection and test requirements as indicated in their internal documentation. Such procedures should include proper handling of electrostatic sensitive devices, classification, packaging, and labeling of moisture sensitive devices, as applicable.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Preservation, packaging, labeling, and marking shall be in accordance with the manufacturer's standard commercial practices for electrostatic discharge sensitive devices.

6. NOTES

6.1 ESDS. Devices are electrostatic discharge sensitive and are classified as ESDS class 1 minimum.

6.2 Configuration control. The data contained herein is based on the salient characteristics of the device manufacturer's data book. The device manufacturer reserves the right to make changes without notice. This drawing will be modified as changes are provided.

6.3 Suggested source(s) of supply. Identification of the suggested source(s) of supply herein is not to be construed as a guarantee of present or continued availability as a source of supply for the item.

Vendor item drawing administrative control number <u>1/</u>	Device manufacturer CAGE code	Vendor part number	Top side marking
V62/05602-01XE	01295	CLVCC3245AIPWREP	LH245AEP
V62/05602-01YE	01295	CLVCC3245AIDBREP	LH245AEP
V62/05602-01ZE	01295	CLVCC3245AIDWREP	LVCC3245A
V62/05602-01UE	01295	CLVCC3245AINSREP	LVCC3245A

1/ The vendor item drawing establishes an administrative control number for identifying the item on the engineering documentation.

CAGE code

01295

Source of supply

Texas Instruments, Inc.  
Semiconductor Group  
8505 Forest Lane  
P.O. Box 660199  
Dallas, TX 75243  
Point of contact: U.S. Highway 75 South  
P.O. Box 84, M/S 853  
Sherman, TX 75090-9493

<b>DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO</b>	<b>SIZE A</b>	<b>CODE IDENT NO. 16236</b>	<b>DWG NO. V62/05602</b>
		<b>REV      A</b>	<b>PAGE    16</b>