

4-BITS BI-DIRECTIONAL LEVEL TRANSLATOR
AUTO DIRECTION 110Mbps PUSH-PULL APPLICATIONS

Description

The LXB0104 is a 4-bits bi-directional level translator for push-pull applications which incorporates a buffered architecture with edge rate accelerators (one shots) to improve the overall data rate up to 110Mbps at 3.3V to 5.0V translation. This device is a universal level translator with A port operating from 1.2V to 3.6V (V_{CCA}) and B port 1.65V to 5.5V (V_{CCB}). This allows for universal low-voltage bi-directional translation between any of the 1.2V, 1.5V, 1.8V, 2.5V, 3.3V, and 5V voltage nodes. For proper operation, please be aware V_{CCA} must not exceed V_{CCB} and the device driving the data I/Os of the LXB0104 must have drive strength of at least $\pm 2\text{mA}$.

The OE pin is used to activate the device. When OE is HIGH, the translator switch is on. Otherwise, when OE is LOW, the translator switch is off, and a high-impedance OFF-state exists between ports. OE pin is the input for the device and should never be left floating. To ensure the high-impedance OFF-state during power-up or power-down, OE pin should be tied to GND through a pulldown resistor before V_{CCA} becomes stable, the value of the resistor is recommended to be 10k Ω which is determined by the current-sourcing capability of the driver.

This device is fully specified for partial power-down applications using I_{OFF}. The I_{OFF} circuitry disables the output, preventing the damaging backflow current through the device when it is powered down. This inhibits current backflow into the device which prevents damage to the device. If an external pullup or pulldown resistor is used on the device I/O ports, the resistor values must be larger than 50k Ω to avoid affecting V_{OH} or V_{OL}.

Overall, the LXB0104 is designed for easy-to-use with auto direction. So, no need for a direction pin to minimize system effort. This device supports 5V tolerant I/O pins in only translate push-pull CMOS logic output applications.

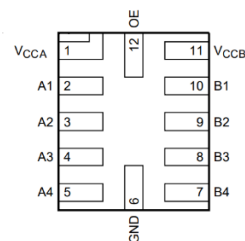
Features

- Bi-Directional Voltage Translation for Push-Pull Applications
- Specified from -40°C to +125°C
- V_{CCA} for A Port: 1.2V to 3.6V
- V_{CCB} for B Port: 1.65V to 5.5V
- Up & Down Translation Data Rate
 - $\leq 110\text{Mbps}$, $C_L = 15\text{pF}$, 3.3V to 5.0V Translation
 - $\leq 60\text{Mbps}$, $C_L = 15\text{pF}$, 1.8V to 3.3V Translation
 - $\leq 30\text{Mbps}$, $C_L = 15\text{pF}$, 1.2V to 1.8V Translation
- I_{OFF} Circuitry Provides Partial-Power-Down Mode Operation
- OE Pin Supports High-Impedance Exists Between Ports
- ESD Protection Exceeds JESD 22
 - 7000V HBM (B1 to B4 Port), 3000V HBM (A Port)
 - 1500V CDM (C101)
- Latchup Exceeds 100mA per JESD 17
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An automotive-compliant part is available under a separate datasheet ([LXB0104Q](#))**

Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

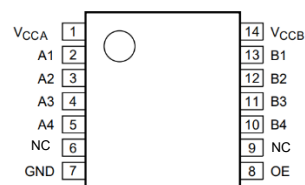
Pin Assignments

(Top View)

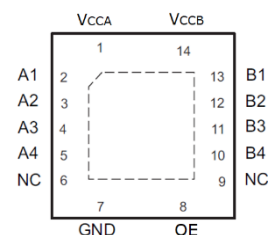


(Transparent Top View)

U-QFN1720-12 (Type CJ)



TSSOP-14



V-QFN3535-14 (Type CJ)

Applications

- GPIO, SPI, SDIO, UART
- Telecom infrastructures
- Industrial
- High-performance computing
- Wide array of products such as:
 - PCs, networking, notebooks
 - Smart phones
 - Tablets

Pin Descriptions

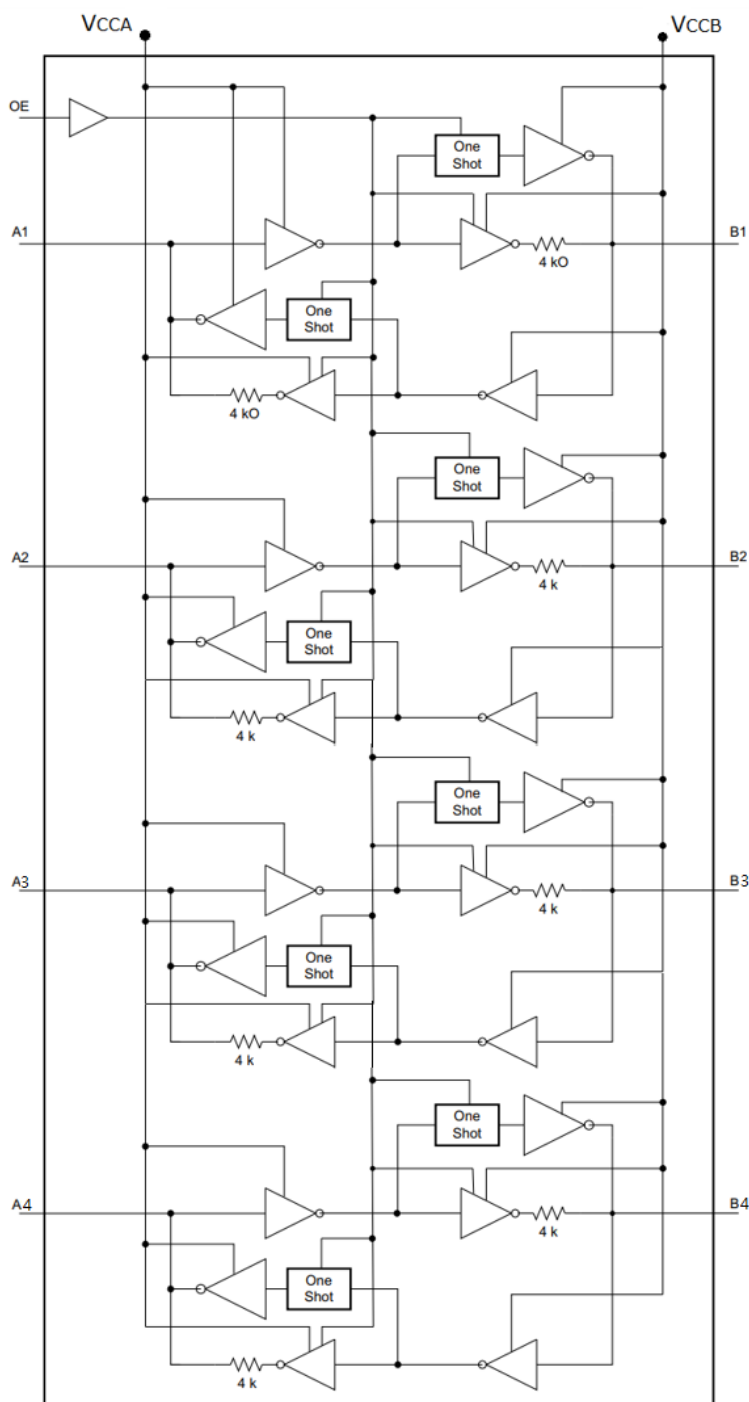
Pin Name	Pin Number			Function
	TSSOP-14	U-QFN1720-12 (Type CJ)	V-QFN3535-14 (Type CJ)	
V _{CCA}	1	1	1	Supply Voltage, A Port
A1	2	2	2	Input/Output 1
A2	3	3	3	Input/Output 2
A3	4	4	4	Input/Output 3
A4	5	5	5	Input/Output 4
NC	6	—	6	No Connection. Not internally connected.
GND	7	6	7	Ground
OE	8	12	8	Output Enable; OE is high-active.
NC	9	—	9	No Connection. Not internally connected.
B4	10	7	10	Input/Output 4
B3	11	8	11	Input/Output 3
B2	12	9	12	Input/Output 2
B1	13	10	13	Input/Output 1
V _{CCB}	14	11	14	Supply Voltage, B Port

Absolute Maximum Ratings (Note 4)

Symbol	Parameter	Rating	Unit
ESD HBM	Human Body Model ESD Protection (B Port)	±7	kV
	Human Body Model ESD Protection (A Port)	±3	kV
ESD CDM	Charged Device Model ESD Protection	±1.5	kV
V _{CCA} , V _{CCB}	Supply Reference Voltage Range	-0.5 to +6.0	V
V _I	Input Voltage Range	-0.5 to +6.0	V
V _O	Voltage Range Applied to Any Output in the High-Z or Power-Off State	-0.5 to +6.0	V
I _{IK}	Input Clamp Current, V _I < 0	-50	mA
I _{OK}	Output Clamp Current, V _O < 0	-50	mA
I _O	Continuous Output Current	±50	mA
	Continuous Current Through V _{CCA} , V _{CCB} , or GND	±100	mA
T _J	Operating Junction Temperature	-40 to +150	°C
T _{STG}	Storage Temperature	-65 to +150	°C

Note: 4. Stresses greater than those listed under *Absolute Maximum Ratings* can 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 Ratings* for extended periods can affect device reliability.

Functional Diagram



For proper operation, please be aware:

1. V_{CCA} must not exceed V_{CCB} and the device driving the data I/Os of the LXB0104 must have drive strength of at least $\pm 2\text{mA}$.
2. OE pin is the input for the device and should never be left floating. OE pin should be tied to GND through a pull-down resistor before V_{CCA} becomes stable, the value of the resistor is recommended to be $10\text{k}\Omega$ which is determined by the current-sourcing capability of the driver.
3. If an external pullup or pull-down resistor is used on the device I/O ports, the resistor values must be larger than $50\text{k}\Omega$ to avoid affecting V_{OH} or V_{OL} .

Recommended Operating Conditions

Symbol	Parameter	Min	Max	Unit
V _{CCA}	Reference Voltage, A Port	1.2	3.6	V
V _{CCB}	Reference Voltage, B Port	1.65	5.5	V
V _I	Input Voltage, OE = Low (OFF), A1, A2	0	4.5	V
	Input Voltage, OE = Low (OFF), B1, B2	0	5.5	V
	OE = High (ON)	0	V _{CCI} (Note 5)	V
V _O	Output Voltage, OE = Low (OFF), A1, A2	0	4.5	V
	Output Voltage, OE = Low (OFF), B1, B2	0	5.5	V
	OE = High (ON)	0	V _{CCO} (Note 5)	V
Δt/ΔV	Input Transition Rise or Fall Rate	0	40	ns/V
I _{PASS}	Pass Transistor Current	—	64	mA
T _A	Operating Free-Air Temperature	-40	+125	°C

Note: 5. V_{CCI} is the supply voltage associated with the input port; V_{CCO} is the supply voltage associated with the output port.

Electrical Characteristics (All typical values are measured at T_A = +25°C, unless otherwise specified, Notes 6 & 7.)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V _{CCA}	A Port Supply Voltage	—	1.2	—	3.6	V
V _{CCB}	B Port Supply Voltage	—	1.65	—	5.5	V
V _{IH}	Input High-Level Voltage	A port & B port, data input	V _{CCI} × 0.65	—	V _{CCI}	V
V _{IL}	Input Low-Level Voltage	A port & B port, data input	0	—	V _{CCI} × 0.35	V
V _{OHA}	Output High-Level Voltage	A port, V _{CCA} = 1.2V, I _{OH} = -20μA	V _{CCA} × 0.8	—	—	V
		A port, V _{CCA} = 1.4V to 3.6V, I _{OH} = -20μA	V _{CCA} - 0.4	—	—	V
V _{OLA}	Output Low-Level Voltage	A port, V _{CCA} = 1.2V, I _{OL} = +20μA	—	—	V _{CCA} × 0.2	V
		A port, V _{CCA} = 1.4V to 3.6V, I _{OL} = +20μA	—	—	0.4	V
V _{OHB}	Output High-Level Voltage	B port, I _{OH} = -20μA, V _{CCB} = 1.65V to 5.5V	V _{CCB} - 0.4	—	—	V
V _{OLB}	Output Low-Level Voltage	B port, I _{OL} = +20μA, V _{CCB} = 1.65V to 5.5V	—	—	0.4	V
C _{IOE}	OE Pin Capacitance	V _{CCA} = 1.2V to 3.6V	—	3	—	pF
C _{IOA}	A Port I/O Capacitance	V _{CCA} = 1.2V to 3.6V	—	5	—	pF
C _{IOB}	B Port I/O Capacitance	V _{CCB} = 1.65V to 5.5V	—	11	—	pF
I _{CCA} + I _{CCB}	Total Supply Current	V _{IN} = GND, I _O = 0, V _{CCA} = 1.2V to 3.6V V _{CCB} = 1.65V to 5.5V	—	1	20	μA
I _{CCA}	A Port Supply Current	V _{IN} = GND, I _O = 0, V _{CCA} = 1.2V to 3.6V V _{CCB} = 1.65V to 5.5V	—	0.5	10	μA
		V _{IN} = GND, I _O = 0, V _{CCA} = 3.6V, V _{CCB} = 0	—	0.5	8	μA
		V _{IN} = GND, I _O = 0, V _{CCA} = 0, V _{CCB} = 5.5V	—	0.5	-8	μA
		V _{IN} = GND, I _O = 0, V _{CCA} = 1.2V to 3.6V V _{CCB} = 1.65V to 5.5V	—	0.5	10	μA
I _{CCB}	B Port Supply Current	V _{IN} = GND, I _O = 0, V _{CCA} = 1.2V to 3.6V V _{CCB} = 1.65V to 5.5V	—	0.5	10	μA
		V _{IN} = GND, I _O = 0, V _{CCA} = 3.6V, V _{CCB} = 0	—	0.5	-8	μA
		V _{IN} = GND, I _O = 0, V _{CCA} = 0, V _{CCB} = 5.5V	—	0.5	8	μA
		V _{IN} = GND, I _O = 0, V _{CCA} = 1.2V to 3.6V V _{CCB} = 1.65V to 5.5V	—	0.5	5	μA
I _{CCZA}	High Impedance State V _{CCA} Current	OE = V _{IN} = GND, I _O = 0, V _{CCA} = 1.2V to 3.6V V _{CCB} = 1.65V to 5.5V	—	0.5	5	μA
I _{CCZB}	High Impedance State V _{CCB} Current	OE = V _{IN} = GND, I _O = 0, V _{CCA} = 1.2V to 3.6V V _{CCB} = 1.65V to 5.5V	—	0.5	5	μA
I _{OZ}	Off-State Output Current	OE = GND, A port: 1.2V to 3.6V B port: 1.65V to 5.5V	—	±0.5	±5	μA
I _{OFF}	Off-State Leakage Current	A port, V _I or V _O = 0 to 3.6V, V _{CCA} = 0 V _{CCB} = 0 to 5.5V	—	±0.5	±10	μA
		B port, V _I or V _O = 0 to 5.5V, V _{CCB} = 0 V _{CCA} = 0 to 3.6V	—	±0.5	±10	μA

Notes: 6. V_{CCA} must be less than or equal to V_{CCB}. V_{CCI} is the supply voltage associated with the input port.

7. All DC current are measured at T_A = +25°C as typical values and maximum values are measured among T_A = -40°C to +125°C.

Dynamic Switching Characteristics (Notes 8 & 9, unless otherwise specified.)

$V_{CCA} = 1.2V$, $T_A = +25^{\circ}C$ & $+125^{\circ}C$

Parameter	From (Input)	To (Output)	$V_{CCB} = 1.8V$	$V_{CCB} = 2.5V$	$V_{CCB} = 3.3V$	$V_{CCB} = 5.0V$	Unit
			Max	Max	Max	Max	
t_{PD}	A	B	12.5	10.5	11.0	11.0	ns
	B	A	17.5	16.5	17.0	17.0	ns
t_{EN}	OE	A	1.0	1.0	1.0	1.0	μs
	OE	B	1.0	1.0	1.0	1.0	μs
t_{DIS}	OE	A	380	360	330	330	ns
	OE	B	350	330	320	320	ns
t_{RA}, t_{FA}	A port rise time and fall time		9.5	9.3	9.2	9.2	ns
t_{RB}, t_{FB}	B port rise time and fall time		5.5	5.3	5.2	5.2	ns
t_{SKO}	Skew time, between channels		0.5	0.5	0.5	0.5	ns
Data rate	—		30	30	30	30	Mbps

Test conditions: $C_L = 15pF$ includes probe and jig capacitance. R_L = Load resistance. For measuring data rate, pulse width, propagation delay, output rise and fall time and enable time, $R_L = 1M\Omega$. For measuring disable time, $R_L = 50k\Omega$. All input pulses are supplied by generators having the following characteristics: PRR = 10MHz, $Z_O = 50\Omega$, $dv / dt \geq 1V/ns$. See load circuit for details.

$V_{CCA} = 1.8V$, $T_A = +125^{\circ}C$

Parameter	From (Input)	To (Output)	$V_{CCB} = 1.8V$	$V_{CCB} = 2.5V$	$V_{CCB} = 3.3V$	$V_{CCB} = 5.0V$	Unit
			Max	Max	Max	Max	
t_{PD}	A	B	—	7.4	7.1	7.0	ns
	B	A	—	8.5	7.9	7.6	ns
t_{EN}	OE	A	—	0.8	0.8	0.8	μs
	OE	B	—	0.8	0.8	0.8	μs
t_{DIS}	OE	A	—	240	240	240	ns
	OE	B	—	210	210	210	ns
t_{RA}, t_{FA}	A port rise time and fall time		—	6.2	6.1	6.0	ns
t_{RB}, t_{FB}	B port rise time and fall time		—	5.3	4.9	4.8	ns
t_{SKO}	Skew time, between channels		—	0.5	0.5	0.5	ns
Data rate	—		—	55	65	65	Mbps

Test conditions: $C_L = 15pF$ includes probe and jig capacitance. R_L = Load resistance. For measuring data rate, pulse width, propagation delay, output rise and fall time and enable time, $R_L = 1M\Omega$. For measuring disable time, $R_L = 50k\Omega$. All input pulses are supplied by generators having the following characteristics: PRR = 10MHz, $Z_O = 50\Omega$, $dv / dt \geq 1V/ns$. See load circuit for details.

$V_{CCA} = 2.5V$, $T_A = +125^{\circ}C$

Parameter	From (Input)	To (Output)	$V_{CCB} = 1.8V$	$V_{CCB} = 2.5V$	$V_{CCB} = 3.3V$	$V_{CCB} = 5.0V$	Unit
			Max	Max	Max	Max	
t_{PD}	A	B	—	—	6.2	5.9	ns
	B	A	—	—	6.5	6.2	ns
t_{EN}	OE	A	—	—	0.7	0.7	μs
	OE	B	—	—	0.7	0.7	μs
t_{DIS}	OE	A	—	—	220	220	ns
	OE	B	—	—	210	210	ns
t_{RA}, t_{FA}	A port rise time and fall time		—	—	5.5	5.5	ns
t_{RB}, t_{FB}	A port rise time and fall time		—	—	4.8	4.7	ns
t_{SKO}	Skew time, between channels		—	—	0.5	0.5	ns
Data rate	—		—	—	75	80	Mbps

Test conditions: $C_L = 15pF$ includes probe and jig capacitance. R_L = Load resistance. For measuring data rate, pulse width, propagation delay, output rise and fall time and enable time, $R_L = 1M\Omega$. For measuring disable time, $R_L = 50k\Omega$. All input pulses are supplied by generators having the following characteristics: PRR = 10MHz, $Z_O = 50\Omega$, $dv / dt \geq 1V/ns$. See load circuit for details.

- Notes:
8. For correct operation, the device driving the data I/Os of the LXB0104 must have a minimum drive capability of $\pm 2mA$.
 9. See Figure 1, t_{PD} is the same as t_{PLH} and t_{PHL} ; t_{EN} is the same as t_{PZL} and t_{PZH} ; t_{DIS} is the same as t_{PLZ} and t_{PHZ} .

Dynamic Switching Characteristics (Notes 8 & 9, unless otherwise specified.) (continued)

$V_{CCA} = 3.3V$, $T_A = +125^{\circ}C$

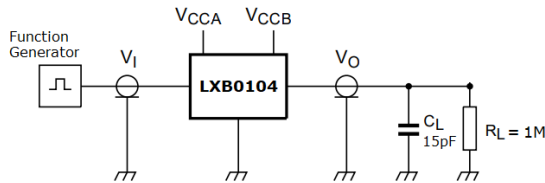
Parameter	From (Input)	To (Output)	$V_{CCB} = 1.8V$	$V_{CCB} = 2.5V$	$V_{CCB} = 3.3V$	$V_{CCB} = 5.0V$	Unit
			Max	Max	Max	Max	
t_{PD}	A	B	—	—	—	3.9	ns
	B	A	—	—	—	4.8	ns
t_{EN}	OE	A	—	—	—	0.7	μs
	OE	B	—	—	—	0.7	μs
t_{DIS}	OE	A	—	—	—	210	ns
	OE	B	—	—	—	210	ns
t_{RA}, t_{FA}	A port rise time and fall time		—	—	—	4.8	ns
t_{RB}, t_{FB}	A port rise time and fall time		—	—	—	4.6	ns
t_{SKO}	Skew time, between channels		—	—	—	0.5	ns
Data rate	—		—	—	—	110	Mbps

Test conditions: $C_L = 15pF$ includes probe and jig capacitance. R_L = Load resistance. For measuring data rate, pulse width, propagation delay, output rise and fall time and enable time, $R_L = 1M\Omega$. For measuring disable time, $R_L = 50k\Omega$. All input pulses are supplied by generators having the following characteristics: $PRR = 10MHz$, $Z_O = 50\Omega$, $dv / dt \geq 1V/ns$. See load circuit for details.

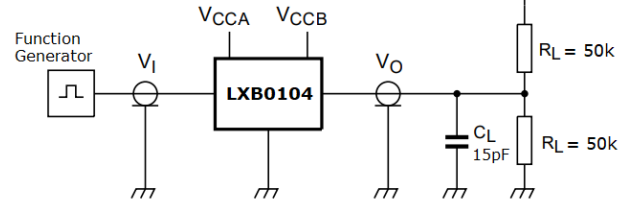
- Notes:
8. For correct operation, the device driving the data I/Os of the LXB0104 must have a minimum drive capability of $\pm 2mA$.
 9. See Figure 1, t_{PD} is the same as t_{PLH} and t_{PHL} ; t_{EN} is the same as t_{PZL} and t_{PZH} ; t_{DIS} is the same as t_{PLZ} and t_{PHZ} .

Parameter Measurement Information

DATA RATE and t_{PD} MEASUREMENTS

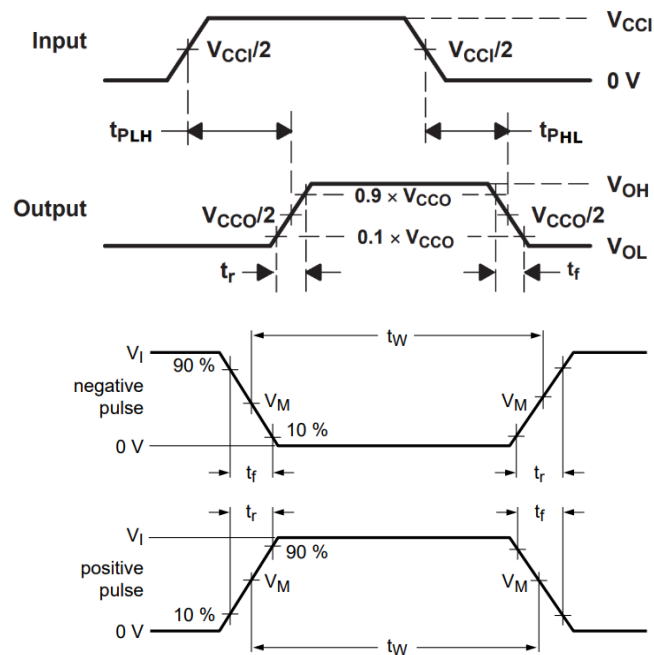


ENABLE and DISABLE MEASUREMENTS



$t_{PZL}, t_{PLZ} = 2 \times V_O$
 $t_{PHZ}, t_{PZH} = \text{Open}$

VOLTAGE WAVEFORMS FOR PROPAGATION DELAY TIMES



DISABLE MEASUREMENT WAVEFORMS

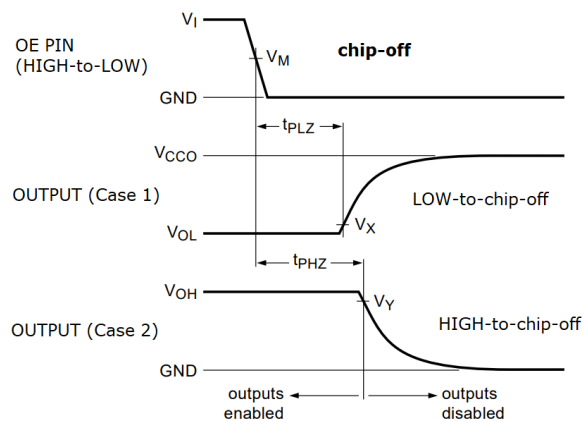


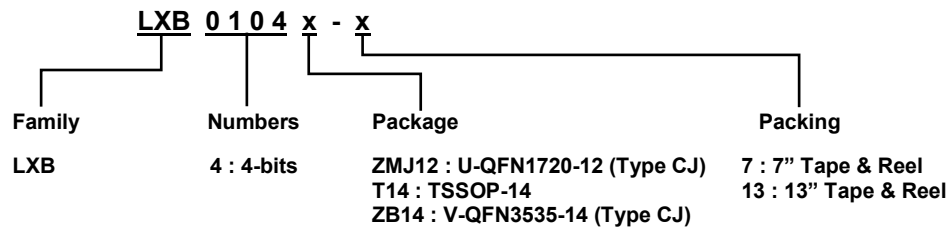
Figure 1. The LXB0104 must be driven at least $\pm 2\text{mA}$ for proper operation.
Load circuit and function generators having the following characteristics: $\text{PRR} \leq 10\text{MHz}$, $\text{ZO} = 50\Omega$, $\text{dv} / \text{dt} \geq 1.0\text{V/ns}$

Package Characteristics

Symbol	Parameter	Package	Test Conditions	Min	Typ	Max	Unit
θ_{JA}	Thermal Resistance Junction-to-Ambient	U-QFN1720-12 (Type CJ)	Note 10	—	102	—	°C/W
		TSSOP-14		—	110	—	
		V-QFN3535-14 (Type CJ)		—	62	—	
θ_{JC}	Thermal Resistance Junction-to-Case	U-QFN1720-12 (Type CJ)	Note 10	—	32	—	
		TSSOP-14		—	54	—	
		V-QFN3535-14 (Type CJ)		—	25	—	

Note: 10. Test condition for each of the package type(s): device mounted on JEDEC standard PCB per JESD51, with minimum recommended pad layout.

Ordering Information



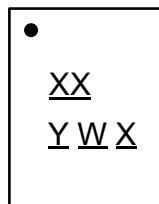
Orderable Part Number	Part Number Suffix	Package Code	Package	Packing (Note 11)	
				Qty.	Carrier
LXB0104ZMJ12-7	-7	ZMJ12	U-QFN1720-12 (Type CJ)	3,000	7" Tape and Reel
LXB0104T14-13	-13	T14	TSSOP-14	2,500	13" Tape and Reel
LXB0104ZB14-13	-13	ZB14	V-QFN3535-14 (Type CJ)	5,000	13" Tape and Reel

Notes: 11. The taping orientation is located on our website at <https://www.diodes.com/assets/Packaging-Support-Docs/AP02007.pdf>.
 12. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.
 13. Pad layout as shown in Diodes Incorporated's package outline PDFs, which can be found on our website at <http://www.diodes.com/package-outlines.html>.

Marking Information

(1) U-QFN1720-12 (Type CJ)

(Top View)

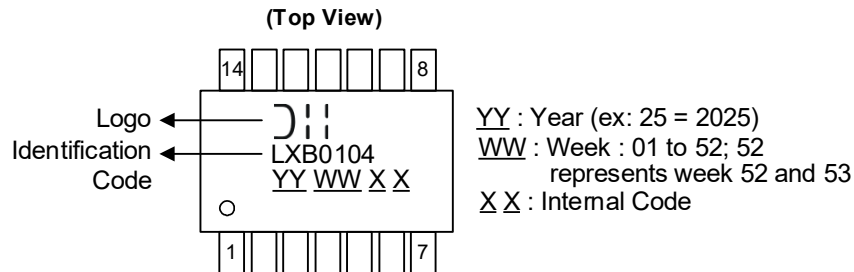


XX : Identification Code
Y : Year : 0 to 9 (ex: 5 = 2025)
W : Week : A to Z : week 1 to 26;
 a to z : week 27 to 52; z represents
 week 52 and 53
X : Internal Code

Orderable Part Number	Package	Identification Code
LXB0104ZMJ12-7	U-QFN1720-12 (Type CJ)	BU

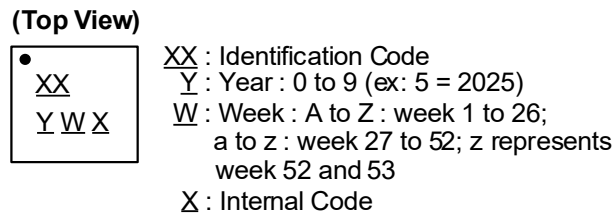
Marking Information (continued)

(2) TSSOP-14



Orderable Part Number	Package	Identification Code
LXB0104T14-13	TSSOP-14	LXB0104

(3) V-QFN3535-14 (Type CJ)

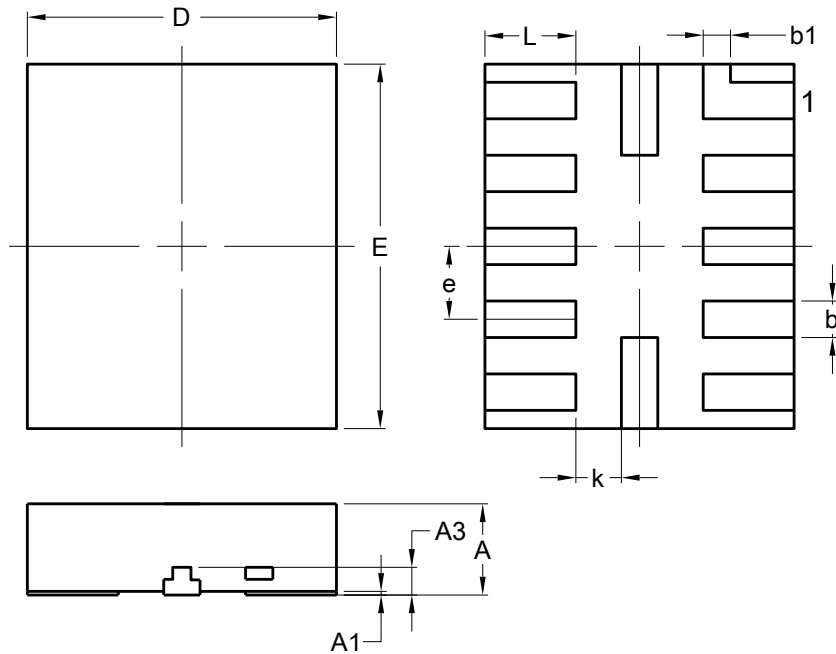


Orderable Part Number	Package	Identification Code
LXB0104ZB14-13	V-QFN3535-14 (Type CJ)	BV

Package Outline Dimensions

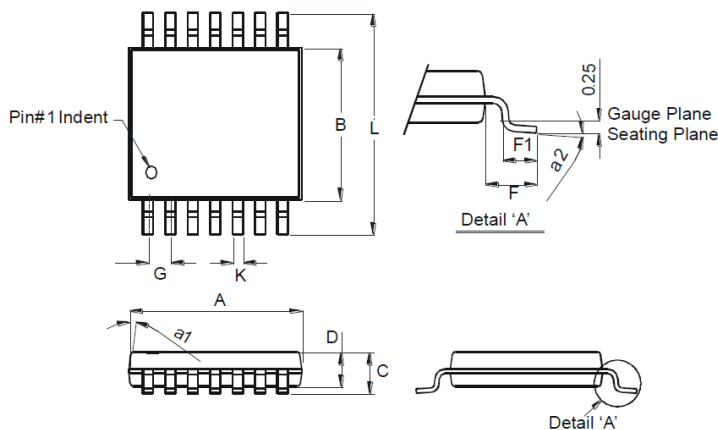
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

U-QFN1720-12 (Type CJ)



U-QFN1720-12 (Type CJ)			
Dim	Min	Max	Typ
A	0.450	0.550	--
A1	0.00	0.050	--
A3	0.152 REF		
b	0.150	0.250	--
b1	0.150 REF		
D	1.600	1.800	--
E	1.900	2.100	--
e	0.400 BSC		
k	0.250 REF		
L	0.400	0.600	--
All Dimensions in mm			

TSSOP-14

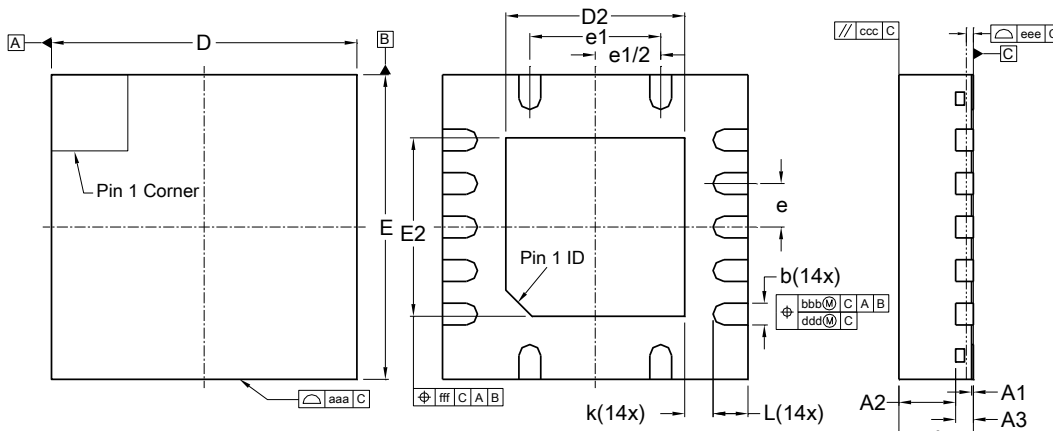


TSSOP-14		
Dim	Min	Max
a1	7° (4X)	
a2	0°	8°
A	4.9	5.10
B	4.30	4.50
C	-	1.2
D	0.8	1.05
F	1.00 Typ	
F1	0.45	0.75
G	0.65 Typ	
K	0.19	0.30
L	6.40 Typ	
All Dimensions in mm		

Package Outline Dimensions (continued)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

V-QFN3535-14 (Type CJ)

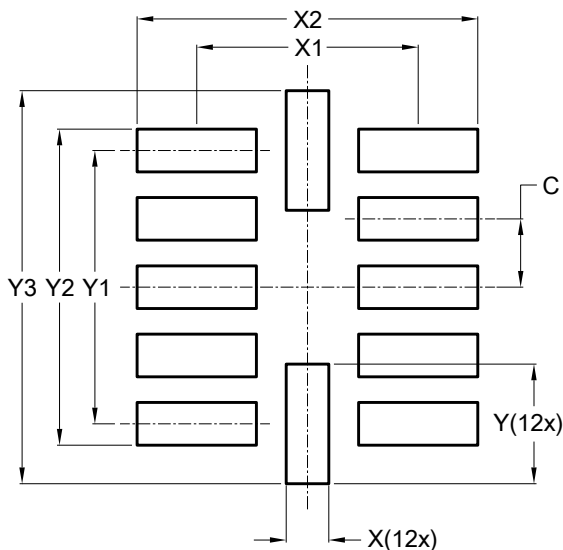


V-QFN3535-14 (Type CJ)			
Dim	Min	Max	Typ
A	0.80	0.90	0.85
A1	0.00	0.05	0.02
A2	--	--	0.65
A3	0.203 REF		
b	0.20	0.30	0.25
D	3.50 BSC		
D2	1.95	2.15	2.05
E	3.50 BSC		
E2	1.95	2.15	2.05
e	0.50 BSC		
e1	1.50 BSC		
L	0.30	0.50	0.40
k	0.325 REF		
aaa	0.1		
bbb	0.1		
ccc	0.1		
ddd	0.05		
eee	0.08		
fff	0.1		
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

U-QFN1720-12 (Type CJ)

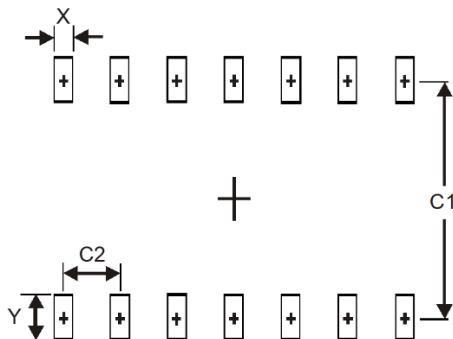


Dimensions	Value (in mm)
C	0.400
X	0.250
X1	1.300
X2	2.000
Y	0.700
Y1	1.600
Y2	1.850
Y3	2.300

Suggested Pad Layout (continued)

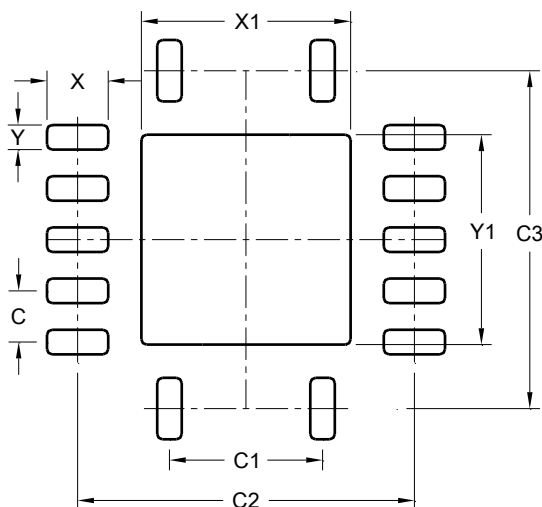
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TSSOP-14



Dimensions	Value (in mm)
X	0.45
Y	1.45
C1	5.9
C2	0.65

V-QFN3535-14 (Type CJ)



Dimensions	Value (in mm)
C	0.500
C1	1.500
C2	3.300
C3	3.300
X	0.600
X1	2.050
Y	0.240
Y1	2.050

Mechanical Data

- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Max Soldering Temperature +260°C for 30 secs as per JEDEC J-STD-020
- Weight:
 - U-QFN1720-12 (Type CJ): 21.5mg (Approximate)
 - TSSOP-14: 82.5mg (Approximate)
 - V-QFN3535-14 (Type CJ): 32.5mg (Approximate)

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