

Automotive-Compliant 4-bit Level Shifter Simplifies Logic Translation in Automotive Applications

The PI4ULS3V304AQ is an automotive-compliant level shifter suitable for automotive applications requiring specific change control. It is qualified to AEC-Q100 Grade 1 and supports ambient temperatures up to 125°C.

The PI4ULS3V304AQ is also a bidirectional voltage translator operating without the need for a DIR pin, which minimizes system effort (for PMBus, I2C, or SMBus).

It supports up to 140 Mb/s data rate with a 100pF capacitive drive capability.

The PI4ULS3V304AQ is in the small footprint U-QFN1720-12 (Type A) package.



The Diodes Advantage

- Qualified to AEC-Q100 Grade 1, supporting ambient temperature range from -40 to +125°C**
 Suitable for telematics / infotainment / ADAS or other critical environments where temperature is at 125°C.
- Power-off protection function reduces the power supply current.**
 Both I/O ports will be in 3-state, which significantly reduces the power supply current and prevents unknown status on I/O ports.
- Ultra-low input voltage (A port) 0.9V ~ 2.0V**
 Supports 1.2V to 1.8V signal voltage from advanced process microprocessor.
- High driving capability and high data rate (up to 140Mbps)**
 Drives more devices in system and provides high data rate to shorten data transfer time.

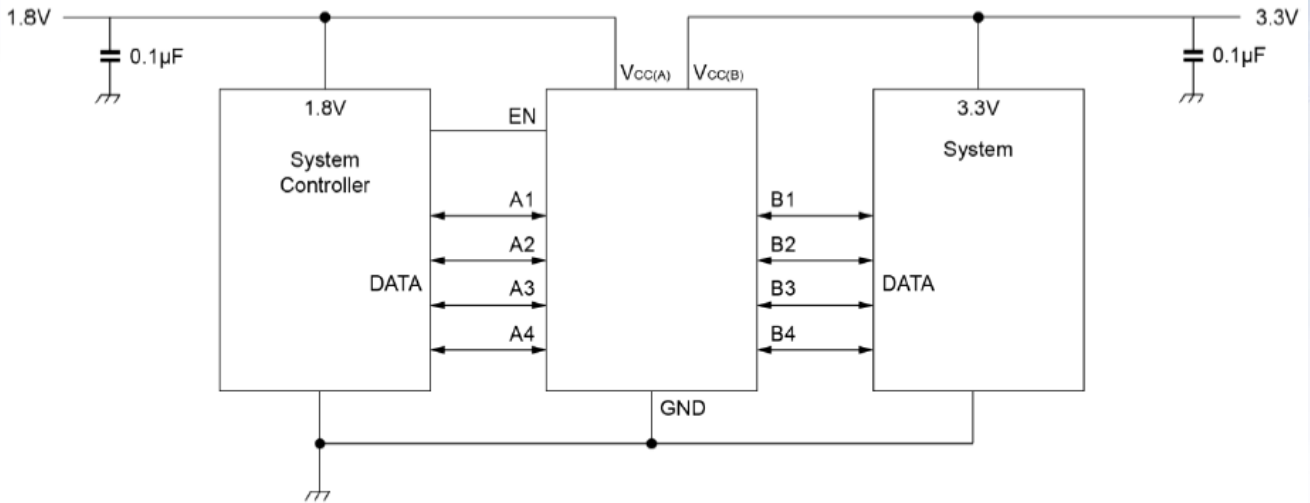
Application(s)

Level-shifting:

- Telematics, ADAS, Infotainment

Automotive compliant – AEC qualified in IATF 16949 certified manufacturing sites and supports PPAP documentation

Typical Application Circuit



Automotive-Compliant ULS Portfolio Overview

Part Number	Translation		Automatic Direction Sensing	Level Shift	Max Signal Rate	Prop Delay ns	Bits Needed	Temperature Range °C	Packages
	From V	To V							
PI4ULS5V108Q	0.95 to 3.3	1.8 to 5	Yes	Bidirectional	100MHz	2.2	8	-40 to 125	TSSOP-20
PI4ULS5V202Q	1.2 to 5.5	1.2 to 5.5	Yes	Bidirectional	20Mb/s	20	2	-40 to 125	MSOP-8
PI4ULS3V304AQ	0.9 to 2.0	1.65 to 3.6	Yes	Bidirectional	140MHz	3.0	4	-40 to 125	U-QFN1720-12

Ordering Information

Part Number	Package Code	Package	Moisture Sensitivity	Reel Size	# per Reel
PI4ULS3V304AQ1ZMAEX	ZMA	U-QFN1720-12	MSL 1	7"	3,000

Cross Reference

Competitors	Package	Diodes Ordering Part #
TI	TXB0104RUT	PI4ULS3V304AQ1ZMAEX