New Product Announcement

PI4ULS5V108Q
PI4ULS5V202Q

Automotive-Compliant 2-Bit and 8-Bit Level Shifters Simplify Logic Translation in Automotive Infotainment Applications

The PI4ULS5V108Q and PI4ULS5V202Q are automotive-compliant level shifters suitable for automotive applications requiring specific change control. They are AEC-Q100 qualified, with grade 1 temperature rating, PPAP capable, and are manufactured in IATF16949:2016 certified facilities.

Both are bidirectional voltage translators that do no require a DIR pin, which minimizes system effort (for PMBus, I^2C or SMBus).

PI4ULS5V108Q supports up to 100MHz up-translation and greater than 100MHz down-translation at ≤30pF cap load. The PI4ULS5V108Q supports 5V tolerance on I/O port, which makes it compatible with TTL levels in industrial and telecom applications. It can set up different voltage translation levels on each channel, which makes it very flexible.

The PI4ULS5V202Q is a 2-bit configurable, dual-supply, auto-sensing translator. Both the V_{CCA} and V_{CCB} supply rails are configurable from 1.2V to 5.5V. This allows voltage logic signals on the V_{CCA} side to be translated into lower, higher, or equal value voltage logic signals on the V_{CCB} side and vice-versa.

DIODES Advantage

- **Automotive Grade 1 Temperature Range (-40ºC~+125ºC)**
  Grade 1 is good for telematics, infotainment, ADAS, or other critical environments where temperature is at +125ºC.
- **Low Standby Current, 5V Tolerance I/O Port to Support TTL, and Low R_{ON}**
  Provides less signal distortion.
- **Supports Open-Drain and Push-Pull Applications**
  User does not need to select different type of level shifter to cover two applications.
- **PI4ULS5V108Q Supports up to 100MHz Up-Translation and Greater than 100MHz Down-Translation**
  High speed can increase the data frequency for the voltage translation in SPI or other interfaces. It can reduce the communication time between SOC and peripheral.
- **PI4ULS5V202Q is a 2-bit Bidirectional Level Shifter**
  It independently determines the direction of the data flow without requiring a directional pin. Each input/output channel has 10KΩ pull. It is an excellent match for open-drain applications, such as the I^2C.
- **Wide Range Voltage Support**
  PI4ULS5V108Q supports 0.95V~5.5V, PI4ULS5V202Q supports 1.2V~5.5V

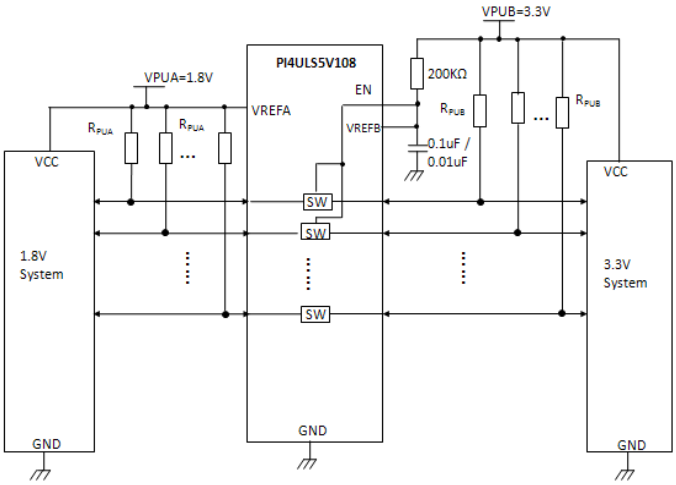
Applications

- Telematics/Infotainment/ADAS
- GPIO, MDIO, SDIO, SVID, UART, and SPI
- SMBus, PMBus, I^2C

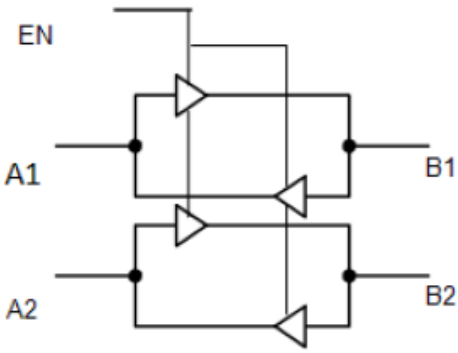
New Product Announcement

PI4ULS5V108Q
PI4ULS5V202Q

Typical Application Circuit



PI4ULS5V108Q



PI4ULS5V202Q

Automotive-Compliant Portfolio Overview

Part Number	Translation From (V)	Translation To (V)	Automatic Direction Sensing	Shift	Max Signal Rate	Output Stage	Prop Delay	Bits Needed	Temperature Range (°C)	Packages
PI4ULS5V108Q	0.95 to 3.3	1.8 to 5	Yes	Bidirectional	100MHz	Open-Drain and Push-Pull	2.2ns	8	-40 to +125	TSSOP-20
PI4ULS5V202Q	1.2 to 5.5	1.2 to 5.5	Yes	Bidirectional	20Mbps		N/A	2	-40 to +125	MSOP-8

Ordering Information

Part Number	Package Code	Package	Reel Size	# per Reel
PI4ULS5V108Q1LEX	L	TSSOP-20	13”	3,000
PI4ULS5V202Q1UEX	U	MSOP-8	13”	2,500

Cross Reference

Competitors	Package	Diodes Ordering Part #
TI	LSF0108QPWRQ1	PI4ULS5V108Q1LEX