

# CPC5902

Optically Coupled I<sup>2</sup>C Bus Repeater  
Provides 3750V<sub>rms</sub> Galvanic Isolation

Industry's First  
Optically Coupled  
I<sup>2</sup>C Bus Repeater

### Features:

- Low EM and RF Generation - No Internal Clock
- Bidirectionally Buffers Both I<sup>2</sup>C Signals
- Extends and Isolates I<sup>2</sup>C Interfaces
- Supports Standard and Fast-mode I<sup>2</sup>C (400kbps)
- Supports Direct Static-State Buffering Without Refresh
- Operates on 2.7V to 5.5V
- Glitch-Free Operation
- Translates Voltage Levels

### Robust:

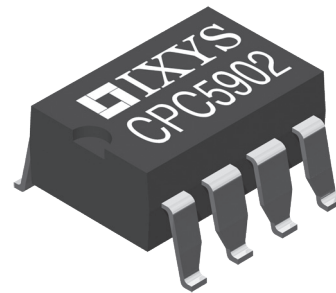
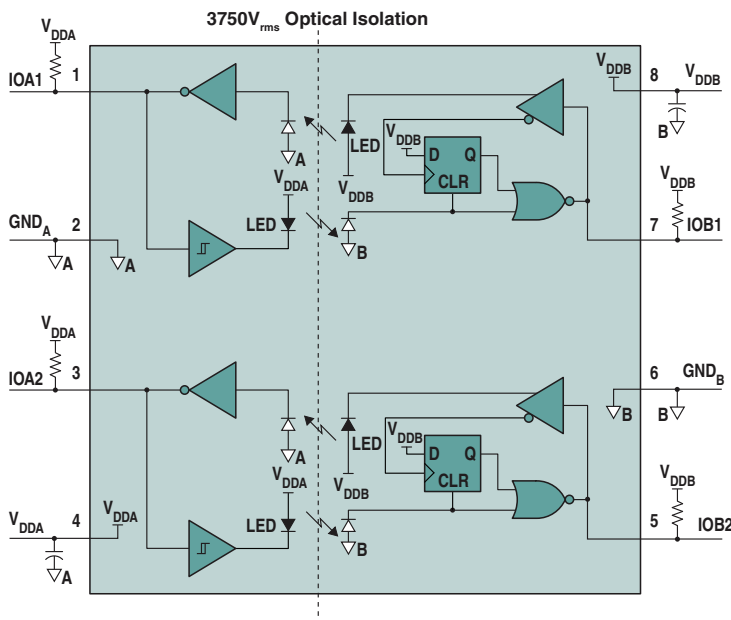
- Immune to External EMI and RFI
- High Voltage Isolation - Tested Above 6kV<sub>pk</sub> for Adverse Environments

### Example Applications:

- Power Over Ethernet
- I<sup>2</sup>C Bus Length Extender
- Isolated Signal Monitoring and Control
- Power Supply High-Side Interface

Technical Brief, TB-101 "Optically Isolating an I<sup>2</sup>C Interface," Available

### CPC5902 Functional Block Diagram

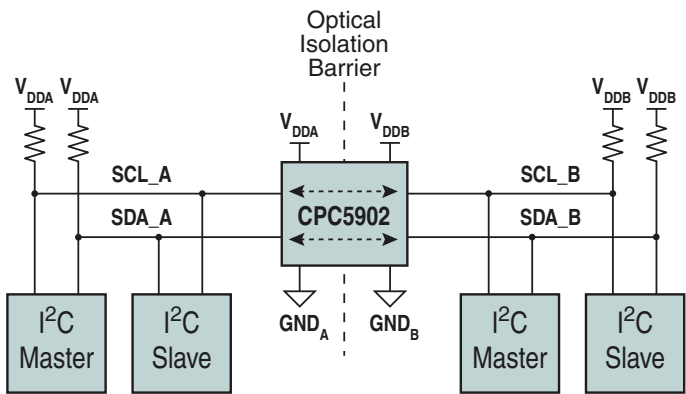


- UL 1577 Certified Component: File E76270
- EN/IEC 60950 Certified Component: TUV Certificate: B 11 10 49410 007

### CPC5902 Ordering Information

Part	Description
CPC5902G	8-Pin DIP in Tubes (50 / Tube)
CPC5902GS	8-Pin Surface Mount in Tubes (50 / Tube)
CPC5902GSTR	8-Pin Surface Mount, Tape & Reel (1000 / Reel)

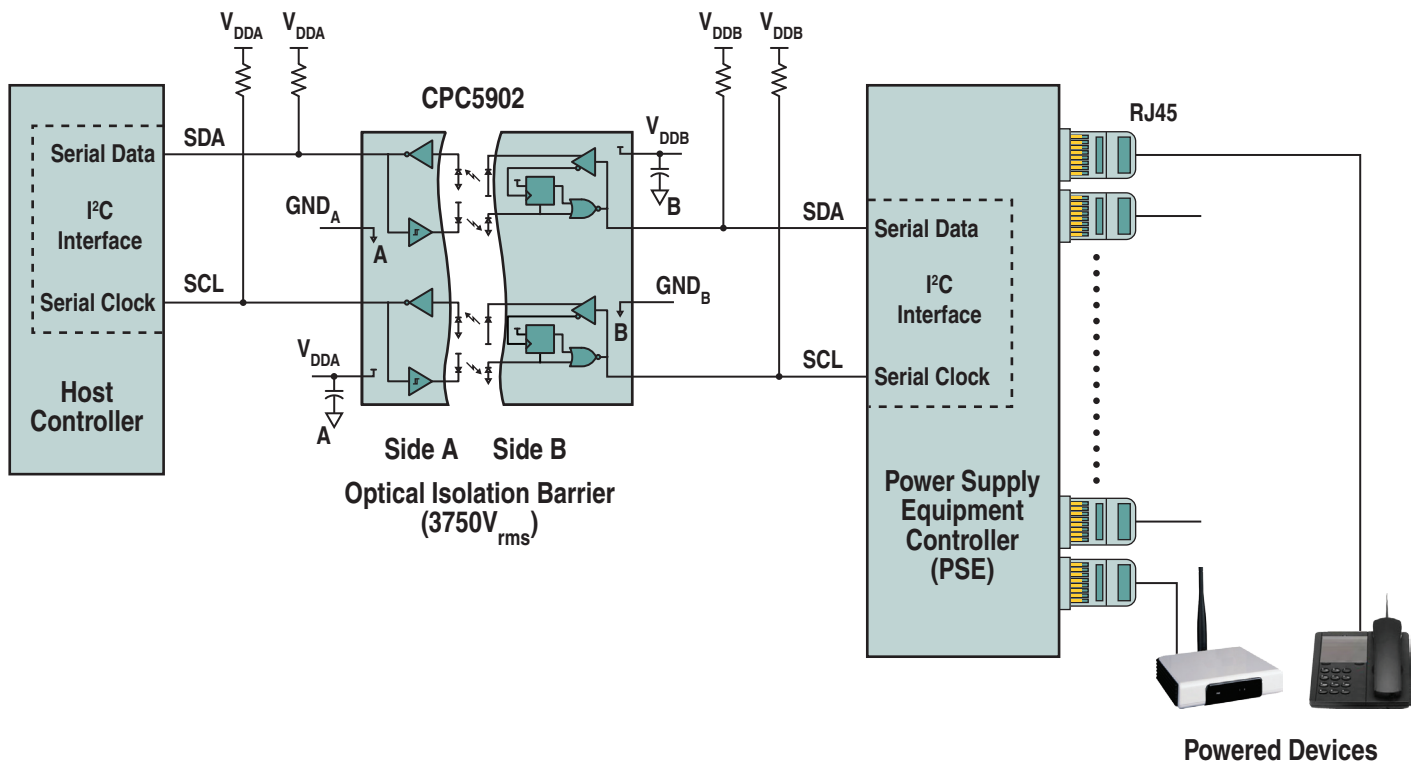
## CPC5902 Optically Coupled Bus Repeater: I<sup>2</sup>C Bus Application



- Replaces **Multiple** Logic Optoisolators
- **3750V<sub>rms</sub>** Galvanic Isolation
- **Multiple Masters and Slaves** on Same Bus
- I<sup>2</sup>C Fast-mode Operation up to **400kbps**
- **Bidirectionally Buffers** Two I<sup>2</sup>C Signals
- Supports I<sup>2</sup>C **Clock Stretching**
- Internal **Glitch Suppression** Circuitry
- Supports Bus **Level Translation**: 2.7V to 5.5V
- Passes **DC Signals** - No Refresh Needed

## CPC5902 Optically Coupled Bus Repeater: Power-over-Ethernet (PoE) Application

- Provides **Communications Interface** Between Host Controller and PSE Controller
- Provides **3750V<sub>rms</sub> Galvanic Isolation** Between Host Controller and PSE Controller
- **Protects** Host Controller During Power Supply **Surge Tests**
- **Bidirectionally Buffers** Clock and Data Signals Between Host Controller and PSE Controller
- **Simplifies** Bus Design by Replacing Multiple Logic Optoisolators
- Provides any Necessary **Bus Level Translation** Between Host Controller and PSE Controller



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