

ISOLATED PRODUCTS CROSS-REFERENCE GUIDE

Designed for Applications in:

» CHARGING
STATIONS



» ENERGY
STORAGE



» AC/DC
CONVERSION



» SOLAR
OPTIMIZATION

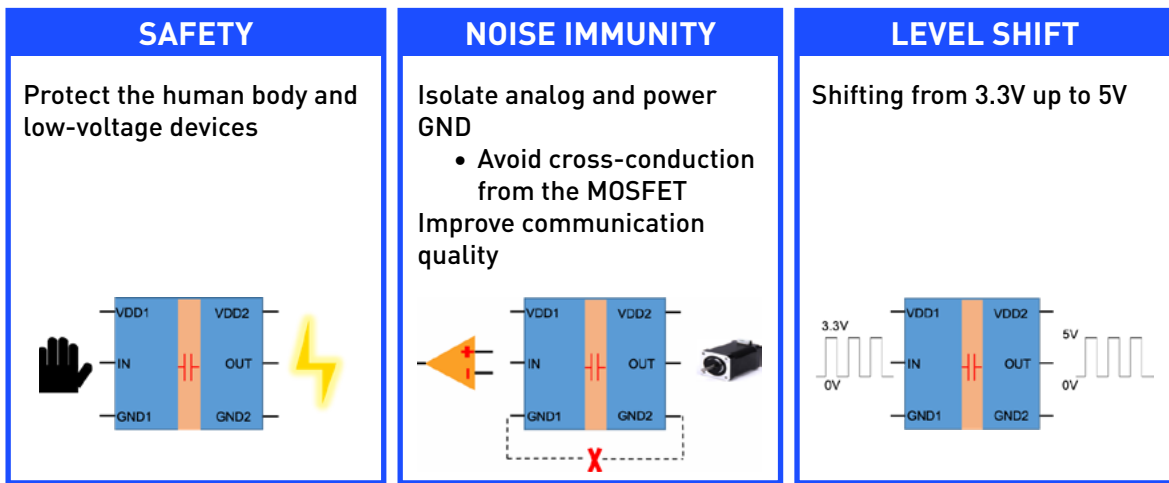


Introduction

MPS has a whole family of isolated solutions that are pin-to-pin compatible with existing solutions on the market. These products are designed to be compliant with both UL1577 and VDE-0884 standards.

Visit [monolithicpower.com/isolation](https://www.monolithicpower.com/isolation) for more information.

Why Do We Need Isolation?



Product Offerings

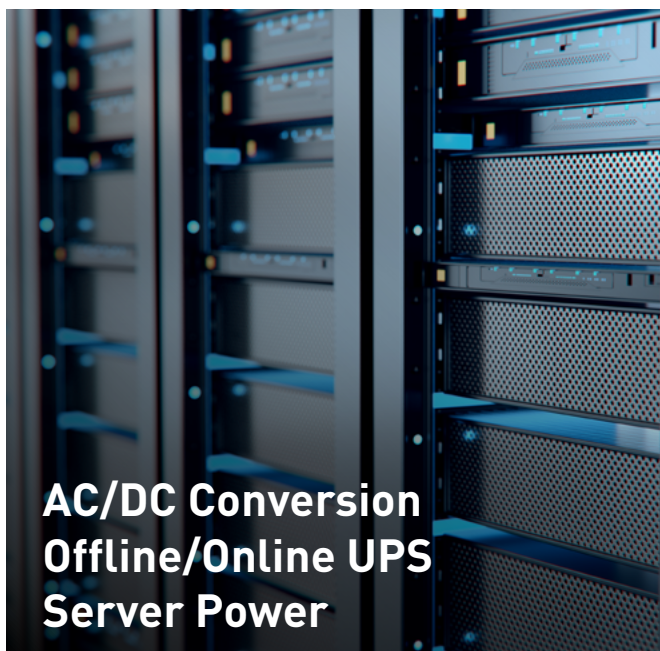
- » Isolated Gate Drivers
- » Isolated Current Sensors
- » Isolated Power Modules
- » Digital Isolators
- » Digital Isolators with Power

Advantages

- » Pin-to-pin compatible with existing solutions to alleviate supply shortages
- » Wide driver bias range enables more flexibility with FET selection (SiC, GaN, IGBT)
- » Higher source and sink peak currents enable higher efficiency

Applications

- » Supports various isolation requirements to maximize system safety level
- » Industry-leading performance
- » Supports UL1577 certification
- » Current sensors support IEC62368-1



DUAL-CHANNEL ISOLATED GATE DRIVERS

Family	Part Number	P2P Replacement	Applications
MP18831/51/71	MP18831-4CGY	Si823x UCC20520 UCC21520 UCC21521	Server PSUs Telecom PSUs Solar Inverters Energy Storage DCFC Charging Stations AC/DC Conversion Motor Drives
	MP18851-A4CGY		
	MP18851-A4CGSE		
	MP18831-A4BGLU		
	MP18851-A4BGLU		
	MP18871-A4BGLU		

DIGITAL ISOLATORS WITH INTEGRATED POWER

Family	Part Number	P2P Replacement	Applications
MPQ278xx	MPQ27831-HP-MGY-3	ISOW784x ISOW7821	Industrial Automation 5G RRU, Industrial CPE RS-485/422/CAN Interfaces Power Meters
	MPQ27821-LP-MGY-3		
	MPQ27811-HP-MGY-3		

DIGITAL ISOLATORS – NO INTEGRATED POWER

Family	Part Number	P2P Replacement	Applications
MP276xx	MP27622GY-Z (2 in/2 out)	IS07741/IS07641 Si8641 MAX14931	Industrial Automation/PLC RS-485/422/CAN Interfaces Power Meters EV/BMS
	MP27631GY-Z (3 in/1 out)		
	MP27633GY-Z (3 in/3 out)		

ISOLATED POWER MODULES

Family	Part Number	Description	Applications
MID02W0303A	MID02W0303AGY-2R/3R	0.25W 3.3V _{IN} /3.3V _{OUT} Isolated Power Module	Isolated Digital Isolator Bias, RS-485/422/CAN Interfaces, Isolated Sensor Power Supplies, Telecom/Networking
MID04W0503A	MID04W0503A-2R/3R	0.4W 5V _{IN} /3.3V _{OUT} Isolated Power Module	
MID06W0503A	MID06W0503A-2R/3R	0.6W 5V _{IN} /3.3V _{OUT} Isolated Power Module	
MID06W0505A	MID06W0505A-2S/3S	0.6W 5V _{IN} /5V _{OUT} Isolated Power Module	
MID1W0505A	MID1W0505A-2S/3S	1W 5V _{IN} /5V _{OUT} Isolated Power Module	

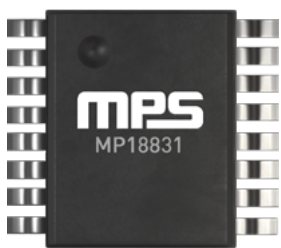
* “-2” denotes 1.5kV isolation, “-3” denotes 3kV isolation

ISOLATED ±5A TO ±50A CURRENT SENSORS

Family	Part Number	P2P Replacement	Applications
MCS1802	MCS1802GS-05	ACS725LLCTR-05AB-S ACS725LLCTR-10AB-S ACS725LLCTR-20AB-S ACS725LLCTR-30AB-S ACS725LLCTR-40AB-S ACS725LLCTR-50AB-S	Motor Control Inverters Smart Dimmers Appliances Load Detection and Management Switch-Mode Power Supplies Over-Current Fault Detection
	MCS1802GS-10		
	MCS1802GS-20		
	MCS1802GS-30		
	MCS1802GS-40		
	MCS1802GS-50		
MCS1803	MCS1803GS-05	ACS712ELCTR-05-B-T ACS712ELCTR-20-B-T ACS712ELCTR-30-B-T ACS724LLCTR-05AB-S ACS724LLCTR-10AB-S ACS724LLCTR-20AB-S ACS724LLCTR-30AB-S ACS724LLCTR-40AB-S ACS724LLCTR-50AB-S	
	MCS1803GS-10		
	MCS1803GS-20		
	MCS1803GS-30		
	MCS1803GS-40		
	MCS1803GS-50		

MP18831/51/71

Isolated Dual-Channel Gate Drivers



- Up to $5kV_{RMS}$ Isolation
- $CMTI > 100V/ns$
- 4A Source/4A Sink Peak Current
- SOIC-16NB/WB and LGA-13 Package
- P2P with the SI823x, UCC2x520 Families

MP27622/31/33

4-Channel to 6-Channel Digital Isolators



- Last 2 Digits Denote Number of I/O Channels
- Input Range: 2.5V to 5.5V
- Up to 150Mbps Data Rate
- $CMTI > 100V/ns$
- 13ns Propagation Delay
- Available in an SOICW-16 Package
- P2P with the ISO7741, Si8641, and MAX14931

MPQ27811/21/31

2-Channel to 4-Channel Digital Isolators with Power



- Input Range: 4.5V to 5.5V
- Integrated 1W Isolated Power
- Up to 50Mbps Data Rate
- $3kV_{RMS}$ Isolation, $CMTI > 100V/ns$
- Available in an SOICW-16 Package
- P2P with the ISOW784x, ISOW7821, and MAX14931

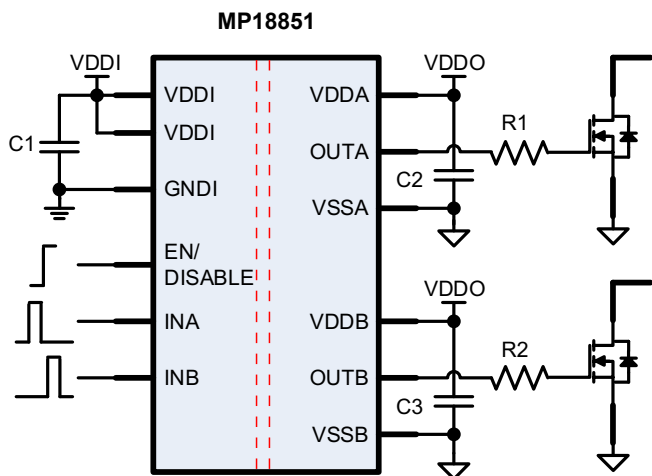
MID1W0505A/MID06W0505A

Isolated Power Modules

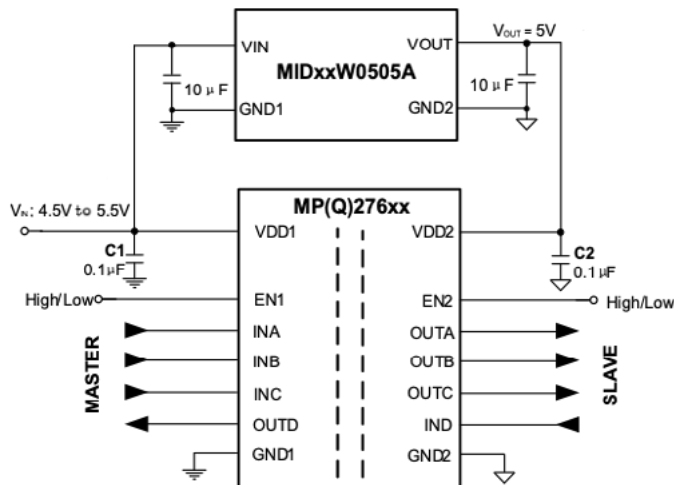


- Input Range: 4.5V to 5.5V, or 3 to 3.6V
- 5V/3.3V Output Voltage
- 0.6W/1W Output Options
- 0.4% Load/1.5% Line Regulation
- $1.5kV_{DC}$ or $3kV_{DC}$ Isolation
- Available in an SOICW-16 Package

Dual-Channel Isolated Gate Driver



Digital Isolator + Isolated Power Module



MCS1802/3

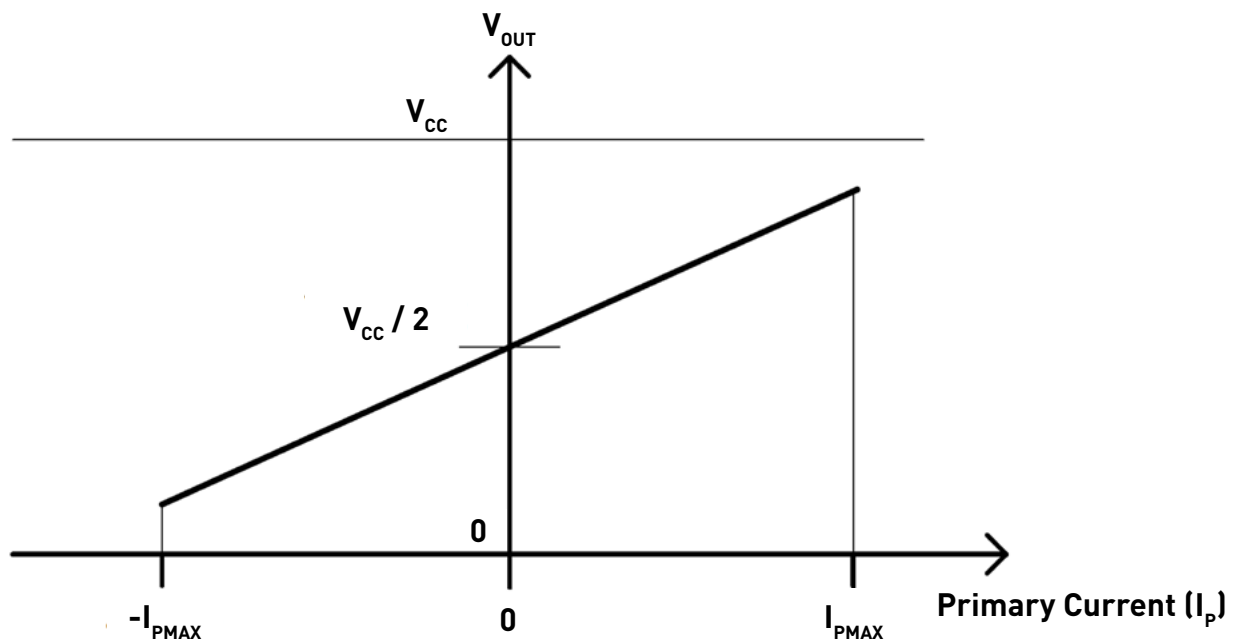
Complete Isolated Current Sensors in Small SOIC-8 Package



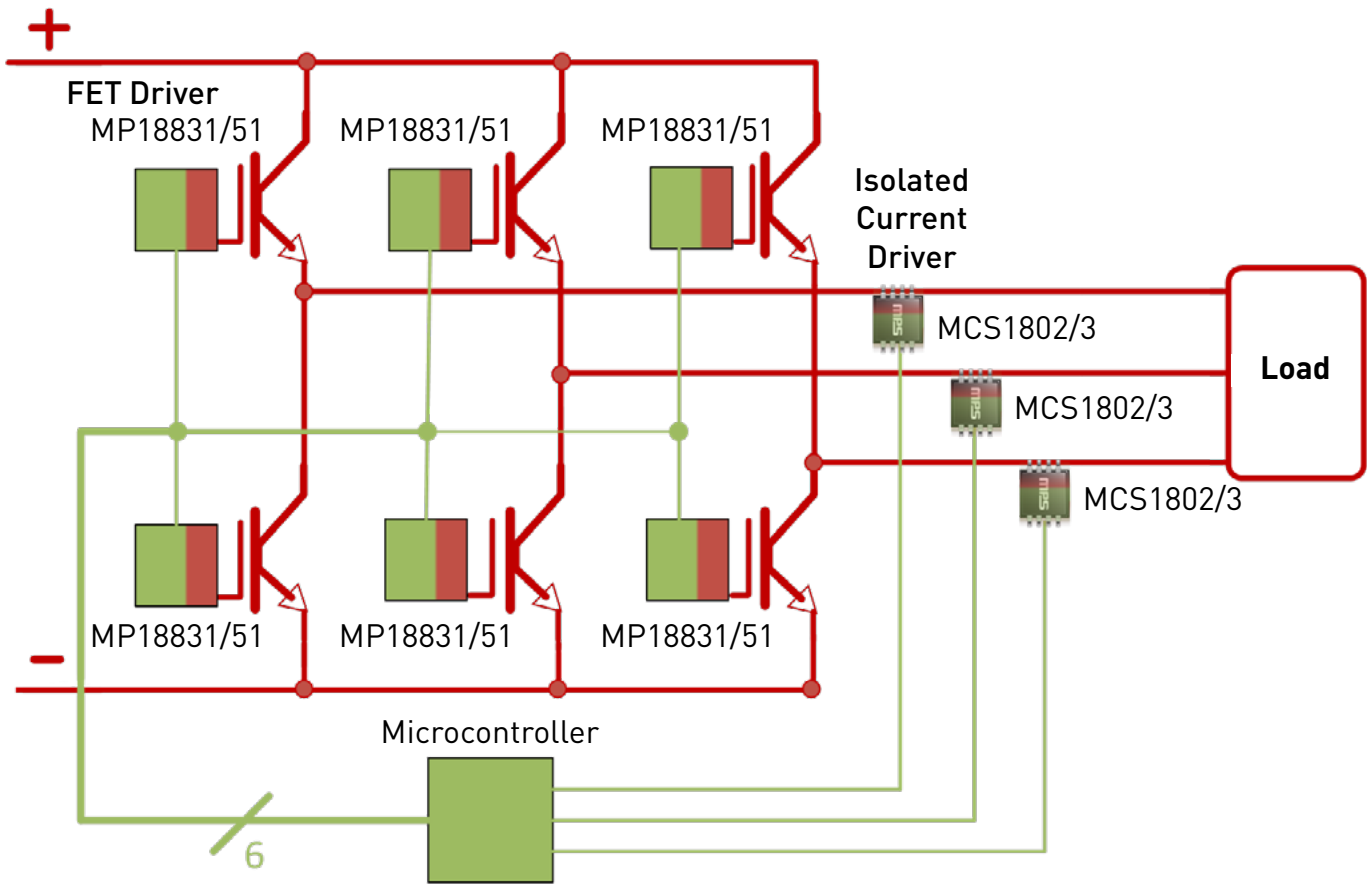
Wide $\pm 5\text{A}$ to $\pm 50\text{A}$ Sensing Range, Ratiometric Output



- Single IC is Easy to Design In
- Smallest Isolated Solution Footprint
- Power Efficient: $0.9\text{m}\Omega$ Primary Resistance
- Programmable Bandwidth Up to 100kHz
- Factory Calibrated for Accuracy Up to $+125^\circ\text{C}$
- Covers AC & DC Currents
 - 0A Defined at $V_{\text{CC}} / 2$



Three-Phase Inverter, High-Side Current Monitoring



Solar Panels



Motor Drivers



Home Appliances

Learn more at:

[monolithicpower.com/isolation](https://www.monolithicpower.com/isolation)

ABOUT MONOLITHIC POWER SYSTEMS

Who we are

We are creative thinkers. We break boundaries. We take technology to new levels. As a leading international semiconductor company, Monolithic Power Systems (MPS) creates cutting-edge solutions to improve the quality of life with green, easy-to-use products.

What we do

We make power design fun! With our innovative proprietary technology processes, we thrive on re-imagining and redefining the possibilities of high-performance power solutions in industrial applications, telecom infrastructures, cloud computing, automotive, and consumer applications.

Where we come from

It started with a vision. Michael Hsing, pioneering engineer and CEO, founded Monolithic Power Systems, Inc. in 1997 with the belief that an entire power system could be integrated onto a single chip. Under his leadership, MPS has succeeded not only in developing a monolithic power module that truly integrates an entire power system in a single package, but also it continues to defy industry expectations with its patented groundbreaking technologies.

Our values

We cultivate creativity.

As a company, we believe in creating an environment that encourages and challenges our employees to collaborate and think outside the box to excel beyond their preconceived capabilities.

We do not accept the status quo.

We do not believe in limitations. It is not about what is, but what can be. Possibilities are endless at MPS.

We are passionate about sustainability.

It's about the future. From materials to finances, we are committed to conservation. We will not tolerate waste in an effort to improve and preserve the quality of life.

We are committed to providing innovative products to our customers.

Let us do the heavy lifting. We relentlessly strive to make system design versatile and effortless to meet our customers' specific needs. We'll do the work, so our customers can have the fun!

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