



## IntelliFET®

# New Product Announcement

ZXMS82090S14PQ  
ZXMS82120S14PQ  
ZXMS82180S14PQ

## Dual-Channel, High-Side Power Switches Provide Combined Protection for High Inrush Current Loads

The ZXMS82xxxS14PQ series of IntelliFETs consists of automotive-compliant, dual-channel, intelligent, high-side power switches designed to handle high inrush current loads while offering robust protection for both the device itself and the connected load.

This protection, from the integrated controller, extends to various potentially damaging events, such as overvoltage, overtemperature, short circuit, and electrostatic discharge.

These switches are particularly well-suited for driving automotive loads, encompassing inductive, capacitive, and resistive loads.

Each device features vertical DMOS MOSFETs with respective  $R_{DS(ON)}$  (Typ. @25°C):

- ZXMS82090S14PQ 75mΩ
- ZXMS82120S14PQ 100mΩ
- ZXMS82180S14PQ 150mΩ

The onboard diagnostics detect fault conditions and self-protection events, including open load, overload, and overtemperature shutdown.

Additional protection for reverse polarity and loss of ground is easily implemented with minimal additional components.

The ZXMS82xxxS14PQ series is available in the thermally efficient SO-14EP package with exposed underside heatsink.

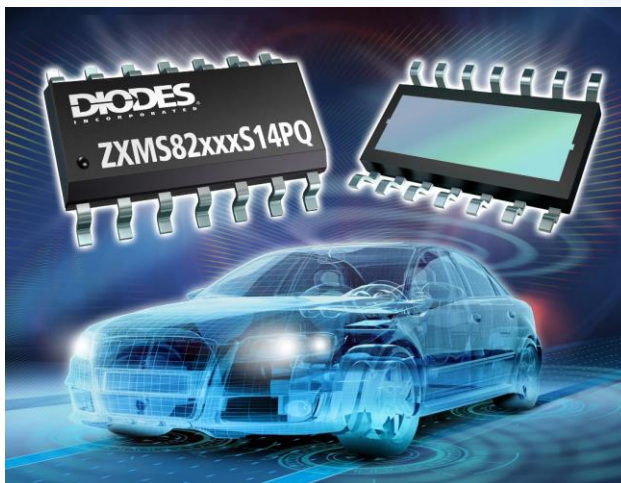
*Automotive-compliant - AEC qualified, manufactured in IATF 16949 certified sites supporting PPAP documents.*

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### The DIODES Advantage

**The ZXMS82xxxS14PQ series of IntelliFETs provides a compact dual-channel solution to safely drive automotive loads.**

- **Overvoltage Protection, Including Load Dump**  
Protects the device if the battery voltage exceeds the clamp voltage
- **Overtemperature Protection with Auto-Restart**  
Thermal shutdown when  $T_J$  max is reached during overload condition
- **Reverse Polarity Protection\***  
Protects the device should battery supply be accidentally reversed
- **Voltage Dependent Current Limiting**  
Protects the device and the load from an overcurrent condition
- **Loss of Ground Protection\***  
Protects the device and leaves the load OFF should the ground connection be lost
- **Diagnostics Using Current Sense**  
Enables measurement of load current, monitoring of overall application state, and detection of open load conditions

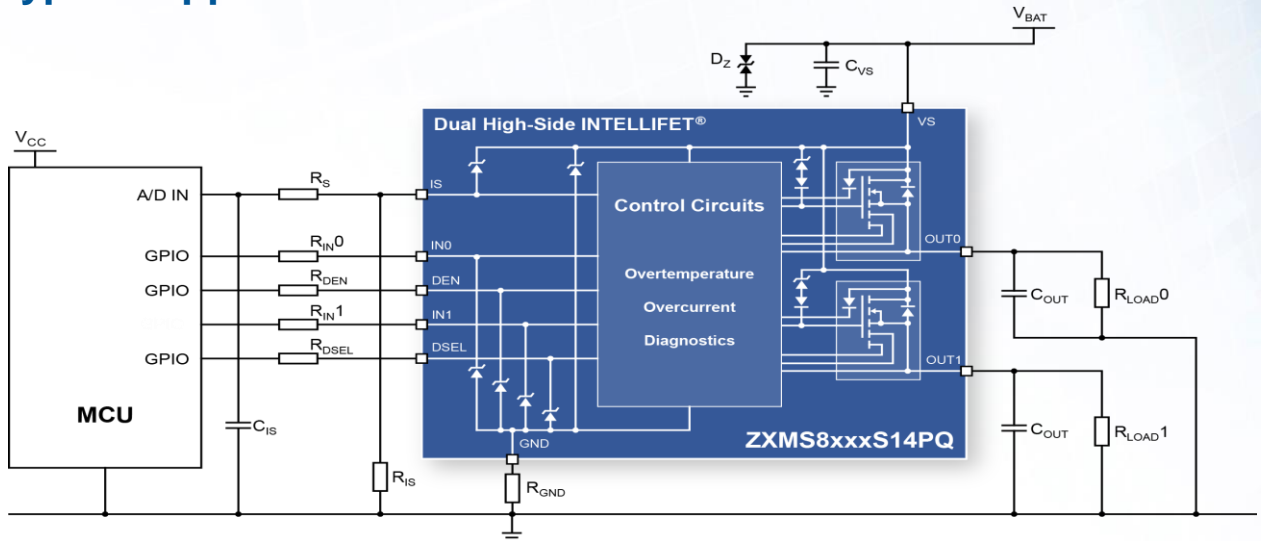
### Applications

\*using minimal external components

- 12V Automotive loads
- LEDs
- Bulbs
- Actuators
- Lighting systems
- Resistive, inductive, and capacitive loads
- Motors in automotive body control
- Relay, fuse, and discrete circuit replacement

[diodes.com](http://diodes.com)

## Typical Application



## Product Portfolio

Part Number	Channels	$R_{DS(ON)}$ @	$R_{DS(ON)}$ @	$I_{L(NOM)}$ One Channel	$I_{L(NOM)}$ Both Channels	$E_{AS MAX}$	Package
		$T_J = 25^\circ C$ (Typ)	$T_J = +150^\circ C$ (Max)				
		m $\Omega$	m $\Omega$	A	A	mJ	
<a href="#">ZXMS82090S14PQ</a>	2	75	180	3.5	2.5	42	SO-14EP
<a href="#">ZXMS82120S14PQ</a>	2	100	240	2.5	2	15	SO-14EP
<a href="#">ZXMS82180S14PQ</a>	2	150	360	2	1.5	30	SO-14EP

## Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Packing	
		Quantity	Carrier
<a href="#">ZXMS82090S14PQ-13</a>	<a href="#">Automotive</a>	2,500	Tape & Reel
<a href="#">ZXMS82120S14PQ-13</a>	<a href="#">Automotive</a>	2,500	Tape & Reel
<a href="#">ZXMS82180S14PQ-13</a>	<a href="#">Automotive</a>	2,500	Tape & Reel