



# New Product Announcement

## ZXMS82090S14PQ

## ZXMS82120S14PQ

## ZXMS82180S14PQ

## IntelliFET®

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

The DIODES 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, over-temperature, 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.

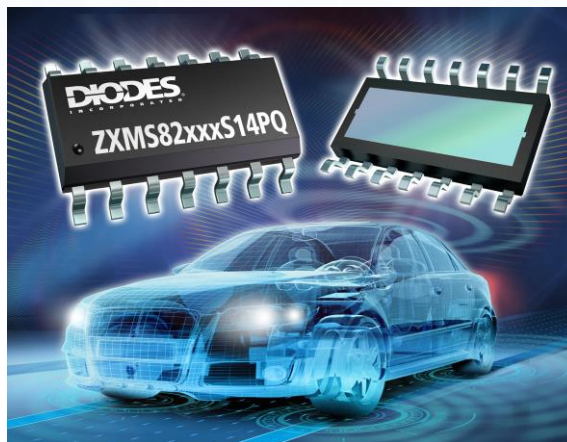
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### The DIODES Advantage

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

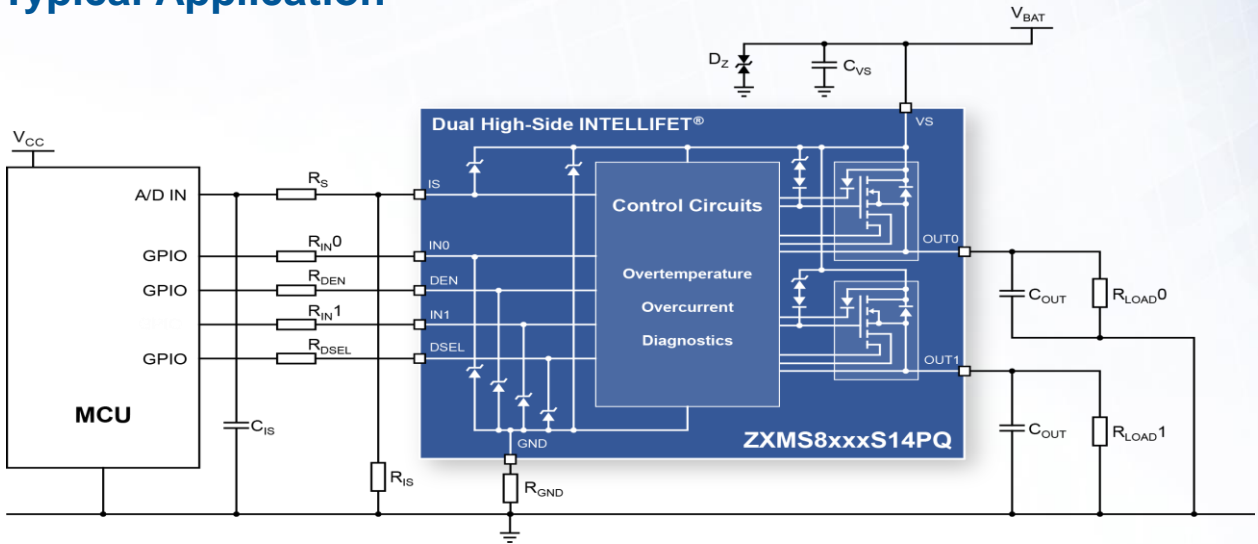
- **Overvoltage Protection, Including Load Dump**  
Protects the device if the battery voltage exceeds the clamp voltage
- **Overtemperature Protection with Auto-Restart**  
Thermal shutdown when  $T_J$  max is reached during overload condition
- **Reverse Polarity Protection\***  
Protects the device 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 load current to be measured, overall application state to be monitored, and detection of open load conditions

\*using minimal external components

### Applications

- 12V Automotive loads
- Automotive resistive, inductive and capacitive loads
- Automotive actuators
- Motors in automotive body control
- Automotive Lighting systems
- Automotive relay, fuse and discrete circuit replacement

## Typical Application



## Product Portfolio

Product	Channels	R <sub>DS(ON)</sub> @ T <sub>J</sub> = 25°C (mΩ)	R <sub>DS(ON)</sub> @ T <sub>J</sub> = +150°C (mΩ)	IL(NOM) One channel (A)	IL(NOM) Both channels (A)	E <sub>AS MAX</sub> (mJ)	Package
<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

## Order Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Cross Orderable P/N	Packing	
			Quantity	Carrier
<a href="#">ZXMS82090S14PQ-13</a>	<a href="#">Automotive</a>	BTS5090-2EKA	2500	Tape & Reel
<a href="#">ZXMS82120S14PQ-13</a>	<a href="#">Automotive</a>	BTS5120-2EKA	2500	Tape & Reel
<a href="#">ZXMS82180S14PQ-13</a>	<a href="#">Automotive</a>	BTS5180-2EKA	2500	Tape & Reel