

Solution For EV/HEV DC-DC Converter

Product Offering and Features

High Voltage:

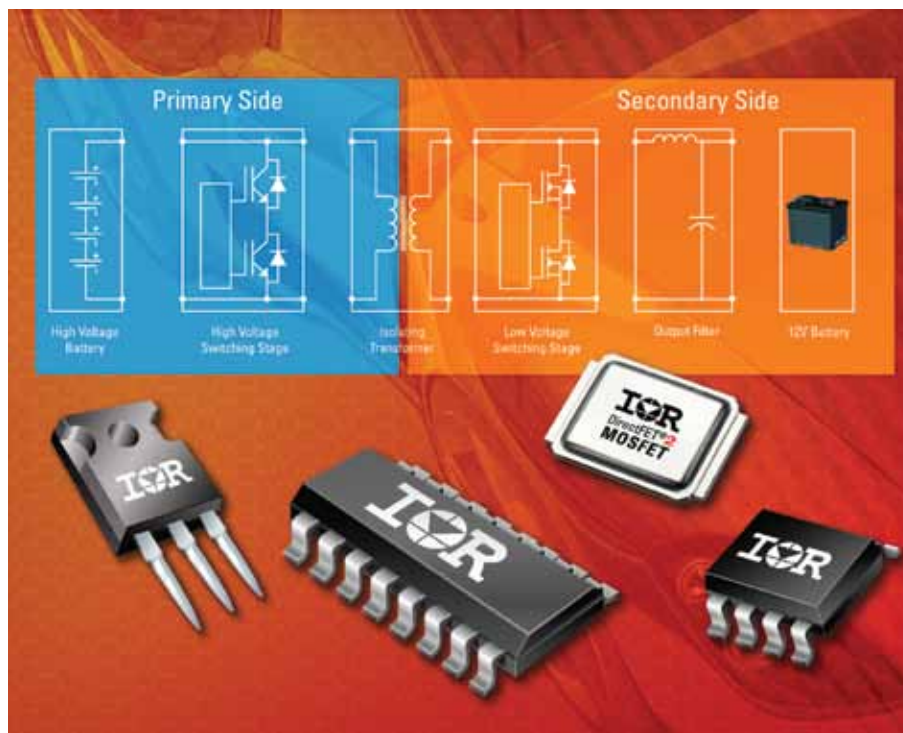
- Fast and high power HVIC drivers
- Superfast and highly efficient IGBTs

Low Voltage:

- MOSFETs optimized for better switching performance
- Synchronous rectification IC
- Fast dual channel low-side driver

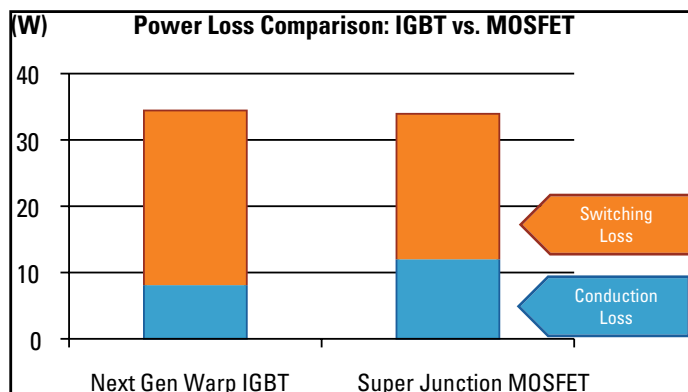
Benefits

- Automotive grade quality
- Products tailored specifically to DC/DC type of applications
- High performance IGBT for improved cost effectiveness
- DirectFETs® for best system efficiency
- Design simplification brought by SmartRectifier™ functionality



In conventional vehicles the electrical system is based on a 12V distribution network. When the vehicle is off and starting the electrical bus is supported by a 12V lead acid battery. When the vehicle is operating an alternator connected to the engine provides the power for all electrical loads and also recharges the battery.

But in HEV and EV vehicles the internal combustion engine can be off for extended periods of time, hence the alternator cannot be relied upon to provide power to auxiliary loads. Since in these vehicles a high voltage battery is already present a DC/DC converter can be used to replace the function performed by the alternator by linking the high voltage and low voltage distribution system. This DC/DC converter is isolated, often bi-directional, and is sized in the range of 1 to 3 kW.



SPECIFICATIONS

High Voltage Switching Stage Drivers					
Part Number	Description	Packages	Output Current	Offset Voltage	V _{CC} UVLO
AUIRS2191S	High Speed High and Low Side	SOIC16N	+3.5 / -3.5 A	600V	8.2 V
AUIRS21811S	High Speed High and Low Side	SOIC8	+1.9 / -2.3A	600V	8.2V
AUIRS21814S	High and Low Side	SOIC14N	+1.9 / -2.3A	600V	8.2V
AUIRS2184S	Half-bridge	SOIC8	+1.9 / -2.3A	600V	8.2V
AUIRS21844S	Half-bridge	SOIC14N	+1.9 / -2.3A	600V	8.2V
AUIRS2112S	High Speed High and Low Side	SOIC16W	+290 / -600mA	600V	8.2V

High Voltage Switching Stage IGBT				
Part Number	Package	V _{CES}	I _c @TC=100°C	V _{CE(ON)} typ
AUIRGP4063D	T0247	600V	48A	1.65V
AUIRGP35B60PD	T0247	600V	34A	1.85V
AUIRGP50B60PD1	T0247	600V	45A	2.00V

Synchronous Rectification Stage DirectFET®					
Part Number	V _{DS} (V)	Rds(on) max. @10Vgs (mOhm)	ID max @ 25°C (A)	Qg typ @10 Vgs (nC)	Can Size
AUIRF7669L2	100	4.4	114	81	Large
AUIRF7759L2	75	2.3	160	200	Large
AUIRF7739L2	40	1	270	220	Large
AUIRF7738L2	40	1.6	209	147	Large
AUIRF7737L2	40	2.2	167	104	Large
AUIRF7736M2	40	3.1	141	83	Medium

Synchronous Rectification Stage Drivers					
Part Number	Description	Packages	Output Current	Offset Voltage	V _{CC} UVLO
AUIRS4426S	Dual Channel Low Side	SOIC8	+2.3 / -3.3A	25V	
AUIRS4427S	Dual Channel Low Side	SOIC8	+2.3 / -3.3A	25V	
AUIRS4428S	Dual Channel Low Side	SOIC8	+2.3 / -3.3A	25V	

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