

## DC-DC Buck Converter Applications

Your **FIRST CHOICE**  
for Performance

### MOSFETs Features and Benefits:

- RoHS-compliant
- Halogen free
- Ideally suited for POL synchronous buck converter applications
- Very low  $R_{DS(on)}$  at 4.5V  $V_{GS}$
- Low conduction losses
- Improved full load efficiency and thermal performance
- High efficiency, even at light loads

### Power QFN Features and Benefits:

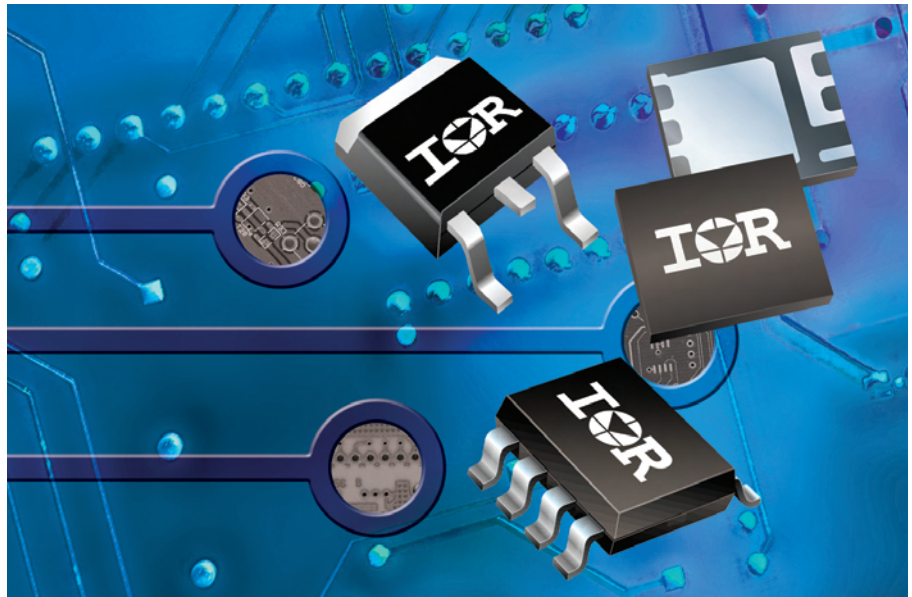
- Compact 5 x 6 mm<sup>2</sup> package
- Low thermal resistance
- Large source lead for more reliable soldering
- Pin compatible to SO-8
- Optimized for high volume production

### Market/Applications:

- Notebooks
- Point-of-load (POL) converters used in servers
- Advanced telecom and datacom systems

### The IR Advantage:

- Benchmark performance standards and manufacturing capabilities
- Widest range of packages up to 250V
- Industry-leading quality



International Rectifier offers a family of 30V synchronous buck MOSFETs for DC-DC synchronous point-of-load (POL) converters. The SO-8 synchronous MOSFETs are designed for high density applications requiring small size, high efficiency and improved thermal conduction, making them ideally suited for notebook applications and point-of-load (POL) converters used in servers, as well as advanced telecom and datacom systems.

The new 30V, N-channel devices are offered in standard D-Pak, SO-8 and the newly introduced "Power QFN" packages that are optimized for the high volume production. The power quad flat-pack no-lead (PQFN) packages provide improved thermal performance and flexibility for new designs within a common SO-8 package form factor.

These new MOSFETs offer significant gate oxide improvement over previous generations and provide high performance as part of a system-wide solution to optimize 12V<sub>IN</sub> / 1-3V<sub>OUT</sub> DC-DC synchronous buck converter applications. Low  $R_{DS(on)}$  and low  $Q_g$  makes these new parts ideally suited for point-of-load converter applications. The low conduction losses improve full-load efficiency and thermal performance while the low switching losses help to achieve high efficiency even at light loads. The new devices enable a simplified cost-effective migration for existing designs.

## DC-DC Buck Converter MOSFETs

Part Number	Function	Package	VDS (V)	VGS (V)	ID@ TA = 25°C (A)	R <sub>DS(on)</sub> (mΩ)		VTH (V)	QG (nC)
						VGS = 4.5V	VGS = 10V		
IRF8707PBF	Load Switch	SO-8	30	±20	11	17.5	11.9	>1.35	6.2
IRF8714PBF	Control FET	SO-8	30	±20	14	13.0	8.7	>1.35	8.1
IRF8721PBF	Control FET	SO-8	30	±20	14	12.5	8.5	>1.35	8.3
IRLR8721PBF	Control FET	D-Pak	30	±20	65	11.8	8.4	>1.35	8.5

Part Number	Function	Package	VDS (V)	VGS (V)	ID@ TA = 25°C (A)	R <sub>DS(on)</sub> (mΩ)		VTH (V)	QG (nC)
						VGS = 4.5V	VGS = 10V		
IRF8736PBF	Sync FET	SO-8	30	±20	18	6.8	4.8	>1.35	17
IRF7862PBF	Sync FET	SO-8	30	±20	21	4.5	3.7	>1.35	30
IRLR8743PBF	Sync FET	D-Pak	30	±20	160	3.9	3.1	>1.35	39

Two new part numbers IRFH7921PBF and IRFH7932PBF are offered in the new Power QFN package. The new PQFN provides designers the flexibility to shrink their form factor while improving performance and reliability. It measures at a compact 5 x 6 mm<sup>2</sup> and has a large source lead for more reliable soldering. The PQFN offers thermal impedance improvements of up to 30 percent and current rating improvements of up to 15 percent over SO-8 package. With its footprint and height advantage, PQFN fills the gap between SO-8 and DirectFET packages. The new package is optimized for high volume production.

Part Number	Function	Package	VDS (V)	VGS (V)	ID@ TA = 25°C (A)	R <sub>DS(on)</sub> (mΩ)		VTH (V)	QG (nC)
						VGS = 4.5V	VGS = 10V		
IRFH7921PBF	Control FET	PQFN	30	±20	15	12.5	8.5	>1.35	9.3
IRFH7932PBF	Sync FET	PQFN	30	±20	25	3.9	3.3	>1.35	34