

Product Brief

40 V StrongIRFET™ power MOSFET family

Low $R_{DS(on)}$, high current technology for battery powered applications

Infineon introduces an extension of the successful StrongIRFET™ family in 40 V devices for battery powered applications including power tools, DC motor drives, and Li-ion battery pack protection.

The new family of 40 V StrongIRFET™ power MOSFETs feature low on-state resistance ($R_{DS(on)}$) for improved performance in low frequency applications, very high-current carrying capability, soft body diode, and 3 V typical threshold voltage to improve noise immunity. Each device in the family is 100 percent avalanche tested at industry highest avalanche current levels to ensure the most robust solution for demanding industrial applications.

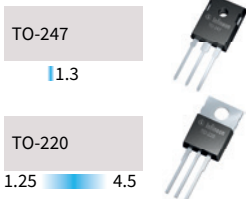
The 40 V devices are available in both through-hole (THD) and surface mount (SMD) packages.

Key features and benefits

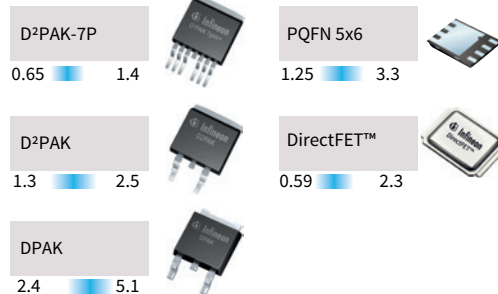
- > Designed for industrial applications
- > High-current carrying capability, highest in the industry for some packages
- > Low $R_{DS(on)}$ to reduce system conduction loss
- > Wide portfolio to address the needs of various applications
- > Softer body diode improved performance in low frequency applications
- > 3 V typical threshold voltage to improve noise immunity
- > Same silicon used in a variety of packages offering supply chain flexibility

StrongIRFET™ 40 V portfolios

Through-hole (THD)



Surface mount (SMD)



Maximum $R_{DS(on)}$ (mΩ) value at $V_{GS}=10$ V

Applications

- > Low voltage drives (power and gardening tools)
- > Battery powered circuits
- > Radio controlled electric toys



Product portfolios

Standard level gate drive

$R_{DS(on) \text{ max at } V_{GS}=10 \text{ V}}$ [mΩ]	TO-252 (DPAK)	TO-263 (D ² PAK)	TO-263 (D ² PAK 7pin)	SuperSO8 / PQFN 5x6	DirectFET™	TO-220	TO-247
<1			IRFS7430TRL7PP 0.75 mΩ				
1-2		IRFS7430TRLPBF 1.3 mΩ	IRFS7434TRL7PP 1.0 mΩ	IRFH7084TRPBF 1.25 mΩ	IRF7739L1TRPBF 1.0 mΩ	IRFB7430PBF 1.3 mΩ	IRFP7430PBF 1.3 mΩ
			IRFS7437TRL7PP 1.4 mΩ	IRFH7004TRPBF 1.4 mΩ	IRF7480MTRPBF 1.2 mΩ	IRFB7434PBF 1.6 mΩ	
		IRFS7434TRLPBF 1.6 mΩ		IRF40H210 1.7 mΩ	IRF7946TRPBF 1.4 mΩ	IRFB7434PBF 1.6 mΩ	
		IRFS7437TRLPBF 1.8 mΩ			IRF40DM229 1.85 mΩ		
2-4	IRFR7440TRPBF 2.4 mΩ	IRFS7440TRLPBF 2.5 mΩ		IRFH7440TRPBF 2.4 mΩ	IRF7483MTRPBF 2.3 mΩ	IRFB7437PBF 2.0 mΩ	
	IRFR7446TRPBF 3.9 mΩ			IRFH7446TRPBF 3.3 mΩ		IRFB7440PBF 2.5 mΩ	
						IRFB7446PBF 3.3 mΩ	
4-10	IRF40R207 5.1 mΩ					IRF40B207 4.5 mΩ	

Logic level gate drive

$R_{DS(on) \text{ max at } V_{GS}=10 \text{ V}}$ [mΩ]	TO-263 (D ² PAK)	TO-263 (D ² PAK 7pin)	DirectFET™	TO-220
<1		IRL40SC228 0.65 mΩ	IRL7472L1TRPBF 0.59 mΩ	
		IRL40SC209 0.8 mΩ		
1-2			IRL7486MTRPBF 1.25 mΩ	IRL40B209 1.25 mΩ
	IRL40S212 1.9 mΩ			IRL40B212 1.9 mΩ
2-4				IRL40B215 2.7 mΩ

The flagship product is the IRL40SC228, which is available in the D²PAK 7-pin package, enabling the lowest $R_{DS(on)}$ in the market (0.65 mΩ max. at 10 V) with 360 A current handling capability, suitable for low switching frequency, high current applications such as BLDC drive.

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