

Benchmark MOSFETs Product Selection Guide



For a complete list of IR MOSFETs go to www.irf.com/product-info/hexfet

International
IR Rectifier
THE POWER MANAGEMENT LEADER

Broad Portfolio of MOSFETs Targeting Multiple Market Segments

Key Differentiators

- Industry brand leader in MOSFETs
- Leading performance MOSFETs
- Industry reputation for quality
- Broad product portfolio
- Widest range of packages up to 250V

Key Products

- Discrete HEXFET® MOSFETs
- Dual HEXFET® MOSFETs
- FETKY®



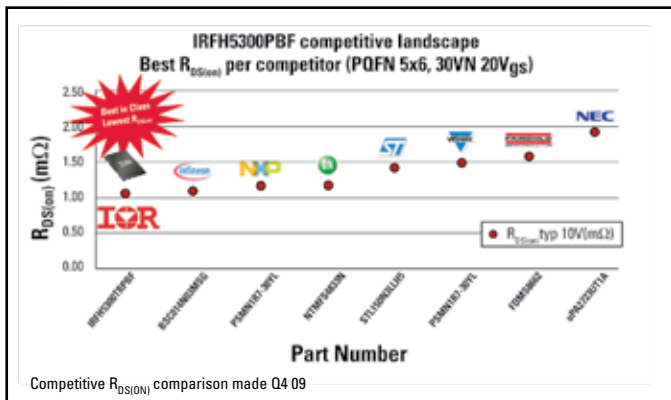
For a full list of the automotive MOSFETs please visit www.irf.com

Power QFN



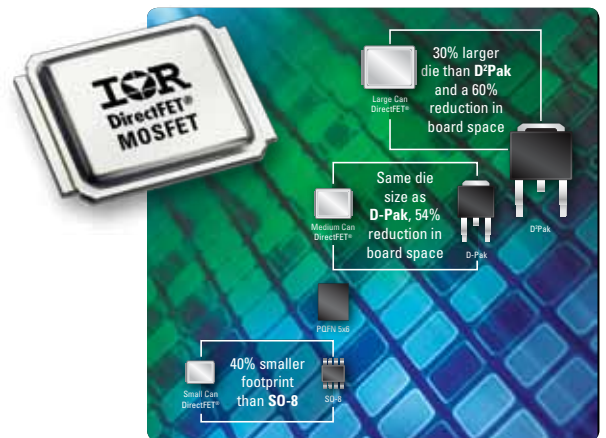
FEATURES

- Industry brand leader in MOSFET
- Benchmark thermal performance
- Lowest $R_{DS(ON)}$



International Rectifier will release an expansive portfolio of PQFN benchmark MOSFETs in early CY10.

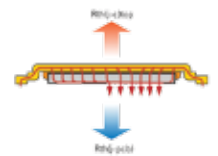
DirectFET®



International Rectifier's DirectFET® power package is a breakthrough surface-mount power MOSFET packaging technology designed for efficient topside cooling in combination with improved bottom-side cooling, the new package can be cooled on both sides to cut part count by up to 60%, and board space by as much as 50% compared to devices in standard or enhanced SO-8 packages.

THE IR ADVANTAGE

- Increases current density
- Cuts MOSFET part count by 60%
- Reduces PCB space by 50%
- Up to 50°C lower operating temperature increases reliability
- Lower total system cost
- Ultra low package resistance and inductance
- Industry lowest On-Resistance
- Compatible with existing surface mount techniques



Double-sided cooling for superior thermal performance

N-Channel MOSFETs

Voltage (V)	R _{DS(on)} @10Vgs max (mΩ)	R _{DS(on)} @4.5Vgs max (mΩ)	I _D @ T _C =25°C (A)	I _D @ T _A =25°C (A)	Q _g Typ @ 10Vgs (nC)	Q _g Typ @ 4.5Vgs (nC)	DirectFET		POFN 5x6	SO-8	D-PAK	D ² PAK	D ² PAK-7	TO-220	TO-247
							Part Number	Layout ²							
20	4.0	5.5	120			21					IRLR3717PBF				
20	4.4	5.7		20		22				IRF3717PBF					
20	5.7	7.8	93			18				IRFR3711ZPBF					
20	6.0	7.3	92			16					IRF3711ZSPBF			IRF3711ZPBF	
20	7.9	11.1	67			8.7					IRF3704ZSPBF			IRF3704ZPBF	
20	8.4	11.4	60			9.3				IRFR3704ZPBF					
20	11	15.5	49			7.2				IRLR3715ZPBF					
20	11	15.5	50			7.0					IRL3715ZSPBF			IRL3715ZPBF	
20	15	25	37			4.5				IRLR3714ZPBF					
20	16	26	36			4.8					IRL3714ZSPBF			IRL3714ZPBF	
24	1.0		429		180								IRF1324S-7PPBF		
24	1.5		353		160									IRF1324PBF	
24	1.65		340		160							IRF1324SPBF			
25	1.15	1.75	45	100	110	52			IRFH5250TRPBF ¹						
25	1.25	2.1	220	38		46	IRF6717MTRPBF	MX							
25	1.6	2.6	180	39		39	IRF6716MTRPBF	MX							
25	1.6	2.7	180	34		40	IRF6715MTRPBF	MX							
25	2.1	3.4	166	29		29	IRF6714MTRPBF	MX							
25	2.7	3.7		25		25			IRF8252PBF						
25	3.0	4.6	95	22		21	IRF6713STRPBF	SQ							
25	4.9	8.7	68	17		12	IRF6712STRPBF	SQ							
25	5.7	8.5	81			10				IRLR8256PBF					
25	5.9	11.9	37	12		8.8	IRF6710S2TRPBF	S1							
25	6.0	10.9	51	14.5	7.0				IRFH5255TRPBF ¹						
25	7.8	13.5	39	12		8.1	IRF6709S2TRPBF	S1							
25	8.7	12.9	57			6.8				IRLR8259PBF					
30		7.4	94		22					IRLR8113PBF					
30	1.4	2.1	100	40	120	50			IRFH5300TRPBF ¹						
30	1.7	2.4	180	32		49	IRF6727MTRPBF	MX							
30	1.7	2.4	180	32		51	IRF6726MTRPBF	MT							
30	1.85	2.9	100	35	77	37			IRFH5301TRPBF ¹						
30	2.1	3.5	100	32	76	29			IRFH5302TRPBF ¹						
30	2.2	3.2	170	28		36	IRF6725MTRPBF	MX							
30	2.4		235		160					IRF2903ZSPBF				IRF2903ZPBF	
30	2.5	3.5	150	27		33	IRF6724MTRPBF	MX							
30	2.8	3.8		24		44			IRF8788PBF						
30	3.1	3.9	160			39				IRLR8743PBF					
30	3.2	4.2	150			36								IRLB8743PBF ¹	
30	3.3	3.9	104	24		34			IRFH7932TRPBF						
30	3.3	4.5		21		30			IRF7862PBF						
30	3.5	5.1	76	24		20			IRFH7934TRPBF	IRF8734PBF					
30	3.8	4.5	150			32					IRL7833SPBF			IRL7833PBF	
30	4.8	6.8		18		17			IRF8736PBF						
30	4.8	6.8	76	20		17			IRFH7936TRPBF						
30	4.8	6.8	92			15								IRLB8748PBF ¹	
30	5.8	8.0	86			15				IRLR8726PBF					
30	6.0	7.1	105			23					IRL8113SPBF			IRL8113PBF	
30	6.3	7.8	87			17					IRF3709ZSPBF			IRF3709ZPBF	
30	7.1	11.8	42	16		9.6			IRFH3702TRPBF ³						
30	7.3	10.9	60	14		11	IRF6721STRPBF	SQ							
30	7.7	10.8	56	13		11	IRF6722MTRPBF	MP							
30	7.7	10.8	56	13		11	IRF6722STRPBF	ST							
30	8.0	12.8	35	11		7.9	IRF6720S2TRPBF	S1							
30	8.1	13.3	44	15		78			IRFH5306TRPBF ¹						
30	8.4	11.8	65			8.5				IRLR8721PBF					
30	8.5	12.5		14		8.3			IRF8721PBF						
30	8.5	12.5	34	15		9.3			IRFH7921TRPBF						
30	8.7	13		14		8.1			IRF8714PBF						
30	8.7	16	62			7.6								IRLB8721PBF ¹	
30	8.9	11.9	58			10				IRLR8729PBF					
30	9.5	12.5	59			9.7					IRF3707ZSPBF			IRF3707ZPBF	
30	11.9	17.5		11		6.2			IRF8707PBF						
30	12.4	17.9	29	12		5.4			IRFH3707TRPBF ³						
30	13.8	18.2	43			7.0				IRLR7807ZPBF					
40	1.0		270	46	220		IRF7739L2TRPBF ¹	L8							
40	1.4	1.7	380			120							IRLS3034-7PPBF		

These parts are Trench MOSFETs and should be used in switching power supply applications. For more information on IR's packages go to www.irf.com/package

¹ New Product

² For complete mounting guidelines please reference application note AN-1035 for DirectFET layouts at www.irf.com/package

³ PQFN 3x3

N-Channel MOSFETs

Voltage (V)	R _{DS(on)} @10V _{gs} max (mΩ)	R _{DS(on)} @4.5V _{gs} max (mΩ)	I _D @ T _C =25°C (A)	I _D @ T _A =25°C (A)	Q _g Typ @ 10V _{gs} (nC)	Q _g Typ @ 4.5V _{gs} (nC)	DirectFET		POFN 5x6	SO-8	D-PAK	D ² PAK	D ² PAK-7	TO-220	TO-247
							Part Number	Layout ²							
40	1.6		320		170								IRF2804S-7PPBF		
40	1.7		350		220										IRFP4004PBF
40	1.7	2.0	343			108						IRLS3034PBF		IRLB3034PBF	IRLP3034PBF
40	1.75		340		160							IRFS3004PBF ¹		IRFB3004PBF ¹	
40	2.0		270		160							IRF2804SPBF			
40	2.3		270		160									IRF2804PBF	
40	3.1	5.9	180			75						IRL1404ZSPBF		IRL1404ZPBF	
40	3.4	4.1	150	23		42	IRF6613TRPBF	MT					IRF1404ZSPBF		IRF1404ZPBF
40	3.7		180		100								IRF1404ZSPBF		IRF1404ZPBF
40	4.9	6.5	130			40					IRLR3114ZPBF				
40	5.0	5.9		18		33				IRF7842PBF					
40	5.0	6.2	106	19		29	IRF6616TRPBF	MX							
40	5.5		119		59						IRFR4104PBF				
40	5.5		120		68							IRF4104SPBF		IRF4104PBF	
40	8.3	9.9	55	12.7	19		IRF6614TRPBF	ST							
40	9.0		77		30						IRFR3504ZPBF				
55	2.6		240		130								IRF3805S-7PPBF		
55	6.5		110		76							IRF3205ZSPBF		IRF3205ZPBF	
55	7.5		91		63					IRFR1010ZPBF					
55	11		61		64						IRFZ48ZPBF			IRFZ48ZPBF	
55	11		62		40					IRFR48ZPBF					
55	8.0	12	89			44				IRLR3705ZPBF					
55	13.5	22.5	60			23				IRLR2905ZPBF					
55	13.9		51		29							IRFZ44ZSPBF		IRFZ44ZPBF	
55	24.5		30		18						IRFR4105ZPBF				
55	58	100	16			6.6					IRLR024ZPBF				
60	1.5		200	33	200		IRF7749L2TRPBF ¹	L8							
60	1.75		340		160							IRFS3006PBF		IRFB3006PBF	
60	1.9	2.2	300			110							IRLS3036-7PPBF		
60	2.1		293		200								IRFS3006-7PPBF		
60	2.4	2.8	270			91					IRLS3036PBF			IRLB3036PBF	
60	3.0		210		120						IRFS3206PBF			IRFB3206PBF	IRFP3206PBF
60	4.2		160		85						IRFS3306PBF			IRFB3306PBF	IRFP3306PBF
60	7.0		86		36		IRF6648TRPBF	MN							
60	8.4		79		46						IRFR1018EPBF	IRF1018ESPBF		IRF1018EPBF	
60	9.4			12	26					IRF7855PBF					
60	11		67	13.4	24		IRF6674TRPBF	MZ							
60	15.8		43		22						IRFR3806PBF	IRFS3806PBF		IRFB3806PBF	
75	1.85		350		380										IRFP4368PBF
75	2.3		160	26	200		IRF7759L2TRPBF ¹	L8							
75	2.6		260		160								IRFS3107-7PPBF		
75	3.0		230		160							IRFS3107PBF			
75	3.3		210		160									IRFB3077PBF	IRFP3077PBF
75	3.8		180		170								IRF2907ZS-7PPBF		
75	4.1		170		120							IRFS3207ZPBF		IRFB3207ZPBF	
75	4.5		170		180										IRFP2907ZPBF
75	5.8		120		79							IRFS3307ZPBF		IRFB3307ZPBF	
75	9.0		80		56						IRFR3607PBF	IRFS3607PBF		IRFB3607PBF	
75	16		53		50						IRFR2307ZPBF				
75	22		45		34						IRFR2607ZPBF				
80	9.5		68	12	36		IRF6646TRPBF	MN							
80	13.4			10	27					IRF7854PBF					
80	15			9.3	35					IRF7493PBF					
80	15		55		22		IRF6668TRPBF	MZ							
100	2.6		290		360										IRFP4468PBF
100	3.5		124	20	200		IRF7769L2TRPBF ¹	L8							
100	3.9	4.1	190			93							IRLS4030-7PPBF		
100	4.0		190		150								IRFS4010-7PPBF		
100	4.3	4.5	180			87						IRLS4030PBF		IRLB4030PBF	
100	4.5		180		150									IRFB4110PBF	IRFP4110PBF
100	4.7		180		143							IRFS4010PBF			
100	6.0		127		120							IRFS4310ZPBF		IRFB4310ZPBF	IRFP4310ZPBF
100	9.0		97		83							IRFS4410ZPBF		IRFB4410ZPBF	IRFP4410ZPBF
100	13		60	10.3	35		IRF6644TRPBF	MN							
100	14		73		90								IRFS4610PBF		IRFB4610PBF
100	14	16	63			34						IRLR3110ZPBF			
100	18			8.3	28					IRF7853PBF					

These parts are Trench MOSFETs and should be used in switching power supply applications. For more information on IR's packages go to www.irf.com/package

¹ New Product

² For complete mounting guidelines please reference application note AN-1035 for DirectFET layouts at www.irf.com/package

N-Channel MOSFETs

Voltage (V)	R _{DS(on)} @10Vgs max (mΩ)	R _{DS(on)} @4.5Vgs max (mΩ)	I _D @ T _C =25°C (A)	I _D @ T _A =25°C (A)	Q _g Typ @ 10Vgs (nC)	Q _g Typ @ 4.5Vgs (nC)	DirectFET		PQFN 5x6	SO-8	D-PAK	D ² PAK	D ² PAK-7	TO-220	TO-247
							Part Number	Layout ²							
100	18		56		69						IRFR3710ZPBF				
100	18		59		82							IRF3710ZSPBF		IRF3710ZPBF	
100	22			7.3	34				IRF7495PBF						
100	22		47	8.3	22		IRF6662TRPBF	MZ							
100	26.5		36		42							IRF540ZSPBF		IRF540ZPBF	
100	35		25	5.7	14		IRF6645TRPBF	SJ							
100	62		14.4	4.1	8.3		IRF7665S2TRPBF ¹								
100	62		19	4.2	8.7		IRF6655TRPBF	SH							
100	72.5		18		15									IRFB4212PBF	
100	190		8.7		6.9					IRFR120ZPBF					
150	5.9		171		151										IRFP4568PBF
150	11		67	11	97		IRF7779L2TRPBF ¹	L8							
150	11		104		77									IRFB4115PBF	
150	11.8		105		73							IRFS4115-7PPBF			
150	12.1		99		77						IRFS4115PBF				
150	15		83		71						IRFS4321PBF			IRFB4321PBF	
150	15.5		78		71										IRFP4321PBF
150	31		56	10	33				IRFH5015TRPBF ¹						
150	34.5		35	6.2	39		IRF6643TRPBF	MZ							
150	39		35		26									IRFB4615PBF	
150	42		33		26					IRFR4615PBF	IRFS4615PBF				
150	43			5.1	25				IRF7815TRPBF ¹						
150	44			5.1	35				IRF7494PBF						
150	56		28	4.9	25		IRF6775MTRPBF	MZ							
150	95		17		13									IRFB4019PBF	
200	9.7		130		161										IRFP4668PBF
200	20		76		100									IRFB4127PBF	
200	22		72		100						IRFS4127PBF				
200	25		65		70										IRFP4227PBF
200	26		62		70						IRFS4227PBF			IRFB4227PBF	
200	55		43	5.1	36				IRFH5020TRPBF ¹						
200	60		26	4.6	34		IRF6641TRPBF	MZ							
200	72.5		25		25									IRFB4620PBF	
200	78		24		25					IRFR4620PBF	IRFS4620PBF				
200	79			3.7	39					IRF7492PBF					
200	100		18		18									IRFB4020PBF	
200	100		19	2.7	26		IRF6785MTRPBF	MZ							
250	33		57		99										IRFP4332PBF
250	33		60		99									IRFB4332PBF	
250	38		35	6.6	110		IRF7799L2TRPBF ¹	L8							
250	45		44		72										IRFP4229PBF
250	46		46		72									IRFB4229PBF	
250	48		45		72						IRFS4229PBF				

Dual N-Channel MOSFETs

Voltage (V)	R _{DS(on)} @10Vgs max (mΩ)	R _{DS(on)} @4.5Vgs max (mΩ)	Configuration	Q _g Typ (nC)	PQFN 5x6	SO-8	TSSOP-8
25	11.3	15.4	Independent symmetric	9.5			IRF8852TRPBF ¹
30	3.0	4.0	Asymmetric half bridge	34	IRFH7911TRPBF ¹		
	8.6	14.5		8.3			
30	12.7	16.9	Asymmetric half bridge	7.6		IRF8513PBF	
	15.5	22.2		5.7			
30	15.5	21.6	Independent asymmetric	6.0		IRF8313PBF	
60	17.8		Independent symmetric	24		IRF7351PBF ¹	

N-Channel MOSFETs SOT-23

Voltage (V)	R _{DS(on)} @ 10Vgs max (mΩ)	R _{DS(on)} @ 4.5Vgs max (mΩ)	I _D @ TA=25°C (A)	Q _g Typ (nC)	SOT-23
30	27	40	5.2	2.6	IRLML0030TRPBF ¹
30	100	154	2.7	1.0	IRLML2030TRPBF ¹
60	92	116	2.7	2.5	IRLML0060TRPBF ¹
60	460	620	1.5	0.4	IRLML2060TRPBF ¹
100	220	235	1.6	2.5	IRLML0100TRPBF ¹

For a complete list of SOT-23 devices go to www.irf.com

These parts are Trench MOSFETs and should be used in switching power supply applications. For more information on IR's packages go to www.irf.com/package

¹ New Product

² For complete mounting guidelines please reference application note AN-1035 for DirectFET layouts at www.irf.com/package

Product Line	Applications	Key Products
 <p>Energy Saving Products</p> <p>Integrated design platforms that enable customers to add energy-conserving features that achieve lower operating energy costs and manufacturing Bill of Material (BOM) costs.</p>	<ul style="list-style-type: none"> • Appliances • Audio • Display • Industrial • Lighting • SMPS 	<ul style="list-style-type: none"> • Digital Control ICs • High-Voltage ICs • IGBTs • IRAM Integrated Power Modules • Intelligent Power Switches • MERs
 <p>Enterprise Power</p> <p>Optimized power management system solutions that deliver benchmark power density, efficiency and performance in enterprise power.</p>	<ul style="list-style-type: none"> • Servers • Storage Networks • Switchers & Routers • Workstations • Notebooks • Game Stations • Set-Top Box 	<ul style="list-style-type: none"> • DirectFET® • Low-Voltage ICs • Sup/BBuck™ • XPhase® • Power Monitor IC • iPOWIR®
 <p>Automotive</p> <p>Automotive grade power management solutions qualified to meet the needs of 12V, 24V and HE/EV applications with a zero defect goal.</p>	<ul style="list-style-type: none"> • AC and DC Motor Drives • Powertrain / Engine control • Body Electronics • Lighting • Class D Audio • Heavy Loads and Actuators 	<p>Automotive Qualified:</p> <ul style="list-style-type: none"> • HEXFET® Power MOSFETs • Intelligent Power Switches • Driver ICs (Low-, Mid- and High-Voltage) • IGBTs for Motor Drives, Various Loads
 <p>Benchmark MOSFETs</p> <p>IR continues to lead the industry by offering power MOSFETs with the lowest $R_{DS(on)}$ and widest range of packages up to 250V for a diverse range of applications.</p>	<ul style="list-style-type: none"> • Audio • Computing • Communications • Motor Control • Power Supply • Synchronous Rectification 	<ul style="list-style-type: none"> • Discrete HEXFET® MOSFETs • Dual HEXFET® MOSFETs • FETKY®
 <p>HiRel</p> <p>Our discrete components, complex hybrid power module assemblies and rugged DC-DC converters utilize leading-edge power technology which, together with demanding environmental specifications help engineers to meet their toughest design challenges.</p>	<ul style="list-style-type: none"> • Space • Military • Commercial Aviation • Rugged Industrial • Medical 	<ul style="list-style-type: none"> • RAD-Hard MOSFETs • Power Modules/Hybrid Solutions • Motor Control Solutions • DC-DC Converters