POWER MANAGEMENT PRODUCT SELECTION GUIDE

infineon + IOR = A Powerful Combination

International IOR Rectifier

AN INFINEON TECHNOLOGIES COMPANY

Volume 5

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SOLUTIONS BY APPLICATION

AC-DC SYSTEMS

POWER FACTOR CORRECTION

- IR's IR115x PFC Controllers utilize the proprietary One Cycle Control™ scheme which does not require input AC line sensing, reducing component count and circuit complexity. These controllers are used in continuous conduction mode boost PFC and implement average current mode control for low THD and improved noise immunity.
- The IRS2500 is a critical conduction or transition mode PFC control IC that can be used in boost or flyback converter modes. The IRS2500 is pin compatible with most industry standard critical conduction or transition mode PFC control ICs with additional improvements to increase performance.

PFC Control ICs

Part Number	Description
IR1152	Fixed 66KHz switching frequency with brownout protection and dual OVP protection.
IR1153	Fixed 22KHz switching frequency with brownout protection and programmable OVP protection.
IR1155	Programmable switching frequency and programmable OVP protection.
IRS2500	Fully integrated, fully protected PFC SMPS control IC designed to drive Boost or Flyback switching regulators.

PFC / Boost IGBTs

Part Number	V_{CES} (V)	Circuit	I_c @ 100C (A)	$V_{CE(on)}$ (max) (V)	Package
IRGB20B60PD1	600	Co-Pack	22	2.35	TO-220AB
IRGP20B60PD			22	2.35	TO-247AC
IRGP35B60PD			35	2.15	TO-247AC
IRGP50B60PD1			45	2.35	TO-247AC
IRG4(B/IB)C20W		Discrete	6.5	2.6	D2-Pak; TO-220AB; TO-220 FullPak
IRG4(B/IB/P)C30W			12	2.7	D2-Pak; TO-220AB; TO-220 FullPak; TO-247AC
IRG4(B/P)C40W			20	2.5	TO-262; D2-Pak; TO-220AB; TO-247AC
IRG4PC50W			27	2.3	TO-247AC
IRGP4069			35	1.85	TO-247AC
IRGP4063			48	2.14	TO-247AC
IRG4PF50W	900		28	2.7	TO-247AC

RESONANT HALF-BRIDGE

FLYBACK CONVERTER

- IR's Resonant half-bridge controllers enable compact design by providing a fully functional controller in an SO-8 package.
- IR's SmartRectifier™ ICs offer simple high efficiency solutions for secondary synchronous rectification.

Resonant Half-Bridge Control ICs

Part Number	Package	V_{OFFSET} (V)	I_{O+} & I_{O-} (mA)	Programmable Frequency (kHz)	Programmable Dead-time (ns)	OCP Threshold(V)
IRS27951S	SO-8	600	300/900	25-500	200-1800	2
IRS27952S				25-500		3
IRS279524S	SO-14			25-500		3

Synchronous Rectification Control ICs

Part Number	Package	V_{cc} max (V)	V_{FET} max (V)	Sw Freq. max (kHz)	Gate Drive (A)	V_{GATE} clamp (V)	Min. On-Time (ns)	Enable Pin	Channel	Automatic MOT Protection
IR1166S	SO-8	20	200	500	+1/ -4	10.7	Program. 250-3000	Yes	1	No
IR11662S				500	+1/ -4			Yes	1	Yes
IR1167AS				500	+2 / -7			Yes	1	No
IR11672AS				500	+2 / -7			Yes	1	Yes
IR1168S				500	+1/ -4		750	No	2	No
IR11682S				400	+1/ -4		850	No	2	Yes
IR1169S				500	+1/ -4		Program. 250-3000	Yes	1	No

SYNCHRONOUS RECTIFICATION MOSFETs

Synchronous rectification improves conversion efficiency because the MOSFET can operate below the knee of a diode offering lower conduction losses.

KEY PARAMETERS

- Low $R_{DS(on)}$
- Low output capacitance
- Low package inductance

Voltage (V)	$R_{DS(on)}$ max (mOhm) @ $10V_{GS}$	DirectFET®		PQFN		D²-Pak	D²-Pak-7lead	TO-220
		Part Number	Footprint	Part Number	Footprint			
30	1.4	IRF8301	MX	IRFH5300	5 x 6 B			
	1.95							IRLB3813
	2.4					IRF2903ZS		
	3.8			IRFHM830	3.3 x 3.3			
40	1	IRF7739L1	L8					
	1.25						IRFS3004-7P	
	1.3							IRFB7430
	1.4	IRF7946	MX					
	1.4			IRFH7004	5 x 6 B			
	1.4						IRFS7437-7P	
	1.6							IRFB7434
	1.75					IRFS3004		IRFB3004
	1.8					IRFS7437		
	2							IRFB7437
	2.4			IRFH7440	5 x 6 E			
	2.5					IRFS7440		IRFB7440
	3.3			IRFH7446	5 x 6 E			IRFB7446
55	2.6						IRF3805S-7P	
	3.3					IRF3805S		IRF3805
60	1.5	IRF7749L1	L8					
	2.1						IRFS3006-7P	
	2.5					IRFS3006		IRFB3006
	4.2			IRFH5006	5 x 6 B	IRFS3306		IRFB3306
	7	IRF6648	MN					
	9.4							
75	2.6						IRFS3107-7P	
	3					IRFS3107		
	3.3							IRFB3077
	5.8			IRFH5007	5 x 6 B	IRFS3307Z		IRFB3307Z
80	10	IRF6646	MN					
	13.4							
100	3.5	IRF7769L1	L8					
	4						IRFS4010-7P	
	4.7					IRFS4010		IRFB4110
	9			IRFH5010	5 x 6 B	IRFS4410Z		IRFB4410Z
	14	IRF6644	MN			IRFS4610		IRFB4610
	18					IRF3710ZS		IRF3710Z
150	12					IRFS4115	IRFS4115-7P	IRFB4115
	31			IRFH5015	5 x 6 B			
	34.5	IRF6643	MZ					
200	22					IRFS4127		IRFB4127

ACTIVE ORING

- Active ORing combines two or more power sources to create a redundant power source, preserving the input power supply in case one of the input sources fails. In the event of an input power failure, the Active ORing circuit disconnects the non-functioning power source as quickly as possible to prevent the system bus voltage from falling, and prevents large peak reverse currents.
- Active ORing MOSFETs have low conduction losses

MOSFETs

Voltage (V)	$R_{DS(on)}$ max (mOhm) @ $10V_{GS}$	DirectFET®		PQFN		D²-Pak	D²-Pak 7lead	TO-220
		Part Number	Footprint	Part Number	Footprint			
24	1						IRF1324S-7P	
	1.5					IRF1324S		IRF1324
25	0.95	IRF6717	MX	IRFH4201	5 x 6			
30	1.4	IRF8301	MX	IRFH5300	5 x 6 B			
	1.7	IRF6727M	MX					
	1.95							IRLB3813
	2.4					IRF2903ZS		
	3.8			IRFHM830	3.3 x 3.3			
100	4						IRFS4010-7P	
	4.7					IRFS4010		IRFB4110
	9			IRFH5010	5 x 6 B	IRFS4410Z		IRFB4410Z
	14	IRF6644	MN			IRFS4610		IRFB4610
	18					IRF3710ZS		IRF3710Z

TELECOM HOT SWAP

MOSFETs

Part Number	Voltage (V)	Package	$R_{DS(on)}$ max. @ $10V_{GS}$ (mΩ)
IRF1607	75	TO-220AB	7.5
IRFP2907	75	TO-247AC	4.5
IRF8010	100	TO-220AB	15
IRFB52N15D	150	TO-220AB	32

KEY FEATURES

- Linear mode capable for bus charging
- Low $R_{DS(on)}$
- SOA

ISOLATED DC-DC CONVERTER

Primary Side Controllers

Part Number	Description
IR2085S	High Speed 100V Self Oscillating 50% Duty Cycle Half Bridge Driver in an 8-Lead SOIC package.
IR2086S	High Speed 100V Self Oscillating 50% Duty Cycle Full Bridge High and Low Side Driver in a 16-lead SOIC package.

- Primary side MOSFETs are switched at high frequency and require a balance of low conduction and low switching losses.

MOSFETs

Voltage (V)	$R_{DS(on)}$ max (mOhm) @ $10V_{GS}$	DirectFET®		PQFN		D^2-Pak	D^2-Pak 7lead	TO-220
		Part Number	Footprint	Part Number	Footprint			
60	2.1						IRFS3006-7P	
	2.5					IRFS3006		IRFB3006
	4.2			IRFH5006	5 x 6 B	IRFS3306		IRFB3306
	7	IRF6648	MN					
	9.4							
75	2.6						IRFS3107-7P	
	3					IRFS3107		
	3.3							IRFB3077
	5.8			IRFH5007	5 x 6 B	IRFS3307Z		IRFB3307Z
80	10	IRF6646	MN					
	13.4							
100	4						IRFS4010-7P	
	4.7					IRFS4010		IRFB4110
	9			IRFH5010	5 x 6 B	IRFS4410Z		IRFB4410Z
	14	IRF6644	MN			IRFS4510		IRFB4510
	18					IRF3710ZS		IRF3710Z
150	12					IRFS4115	IRFS4115-7P	IRFB4115
	31			IRFH5015	5 x 6 B			
	34.5	IRF6643	MZ					

DC-DC POINT OF LOAD SOLUTIONS

- Computing & Storage
- Networking & Communications
- Test & Measurement
- Broadcast
- Industrial
- Consumer

Product & Solutions

Integrated

SINGLE PHASE Sup*IR*Buck®

Fully Integrated DC/DC POL.

MULTI PHASE PowIRstage®

Integrated MOSFETs and Driver for higher density solutions.

Discrete

DUAL MOSFETs FOR COMPACT DC-DC CONVERTER

Power Blocks

Voltage (V)	I_D @ T_C = 25C (A)	Configuration	PQFN Part Number	PQFN Footprint
25	25	Half-bridge Asymmetric	IRFH4247D	4x5
			IRFH4255D	5x6
	35		IRFH4253D	
	45		IRFH4251D	
	30/phase	Dual Half-bridge	IRF3546	6x8

- Power Blocks utilizing IR's PowIRstage® Packaging Platform for increased current density
- Dual half-bridge offers 2 phases at 30A per phase in 6x8 package

Dual MOSFETs

Voltage (V)	I_D @ T_A = 25C (A)	Configuration	$R_{DS(on)}$ (mΩ)	PQFN Part Number	PQFN Footprint	SO-8 Part Number
20	4.5	Independent Symmetric	45	IRLHS6276	2 x 2	
30	3.6		63	IRLHS6376	2 x 2	
	9.7		21.6			IRF8313TR
	13	Half-bridge Asymmetric	4	IRFH7911	5 x 6 C	
	8		16.9			IRF8513TR

PowIRstage® FOR HIGH CURRENT MULTI PHASE POL

	IR3553	IR3558	IR3551	IR3550	IR3548 Two-Phase
Continuous Output Current (A)	40A	45A	50A	60A	30A per Phase
Package Dimensions	4mm x 6mm	5mm x 6mm	5mm x 6mm	6mm x 6mm	6mm x 8mm

Sup*IR*Buck® INTEGRATED VOLTAGE REGULATORS

	1-21V	3-27V
1-4A	IR3897	
	IR3891	
4-6A	IR3898	IR3473
6-10A	IR3899	IR3475
10-16A	IR3894	IR3476
	IR3895	IR3477
16-25A	IR3847	

COMMON FEATURES

- Maximum switching frequency of 1.5 MHz
- Vref accuracy of +/- 1%
- Enable
- Programmable switching frequency
- PGood
- Pre-bias protection
- Thermal protection
- Programmable hiccup current limit
- Programmable over current

Sup*IR*Buck® Online Design Tool featuring parametric search, schematic capture, AC, Steady State, Transient Analysis, Thermal Analysis, BOM creation, and more…

mypower.irf.com/Sup*IR*Buck

POWER MOSFETs FOR DC-DC CONVERTERS

MOSFETs

Voltage (V)	I_D @ T_A = 25C (A)	$R_{DS(on)}$ max (mOhm) @ $10V_{GS}$	Q_G typ @ $10V_{GS}$ (nC)	Integrated Schottky	DirectFET®		PQFN	
					Part Number	Footprint	Part Number	Footprint
25	40	3.3	10				IRFHM4231	3.3 x 3.3
	40	2.2	17				IRFHM4226	3.3 x 3.3
	40	4.4	7.7				IRFHM4234	3.3 x 3.3
	60	3.5	10				IRFH4231	5 x 6 B
	60	4.5	8.2				IRFH4234	5 x 6 B
	74	3.7	11		IRF6811S	SQ		
	100	0.95	46				IRFH4201	5 x 6 B
	100	1.1	36	X			IRFH4210D	5 x 6 B
	100	1.1	36				IRFH4210	5 x 6 B
	100	1.35	26	X			IRFH4213D	5 x 6 B
	100	1.35	26				IRFH4213	5 x 6 B
	125	1.7	17		IRF6892S	S3C		
	160	1.3	26	X	IRF6894M	MX		
	168	1.6	25	X	IRF6893M	MX		
	213	1.1	35	X	IRF6898M	MX		
	16*	5.2	7.4		IRF6810S	S1		
30	40	4.3	13	X			IRFHM830D	3.3 x 3.3
	40	3.8	31				IRFHM830	3.3 x 3.3
	44	9	7.1				IRFH8334	5 x 6 E
	47	7.8	7.3				IRFHM831	3.3 x 3.3
	56	6.6	9.3				IRFH8330	5 x 6 E
	57	6.1	26				IRFHM832	3.3 x 3.3
	60	7.3	9.2		IRF8327S	SQ		
	82	5	15				IRFH8325	5 x 6 E
	90	4.1	14				IRFH8324	5 x 6 E
	120	3.1	41				IRFH8318	5 x 6 E
	140	2.5	25	X	IRF8306M	MX		
	150	2.5	28		IRF8308M	MX		
	169	2.1	30				IRFH8311	5 x 6 E
	170	2.2	28		IRF8304M	MX		
	190	1.8	35	X	IRF8302M	MX		

COMPLETE SOLUTION FOR ISOLATED SOLAR CONVERTERS

IGBTs

Part Number	V_{CES}	I_C	$V_{CE(on)}$	Package	Speed
IRGP4063DPBF	600 V	48 A	1.65 V	TO-247	8-30 kHz
IRGP4066DPBF		90 A	1.7 V	TO-247	8-30 kHz
IRGPS4067DPBF		160 A	1.7 V	Super TO-247	8-30 kHz
IRGP35B60PDPBF		34 A	2.25 V	TO-247	30-150 kHz
IRGP50B60PD1PBF		45 A	2.0 V	TO-247	30-150 kHz
IRG7PH35UDPBF	1200 V	20 A	1.9 V	TO-247	8-30 kHz
IRG7PH42UDPBF		30 A	1.7 V	TO-247	8-30 kHz
IRG7PH46UDPBF		40 A	1.7 V	TO-247	8-30 kHz

Gate Drive ICS

Part Number	Voltage (V)	Topology	$Io-_{(mA)}$ Sink
IRS2004	200 V	Half bridge, Single input	600
IRS2011		High side and Low side	1000
IRS2010		High side and Low side	3000
IRS2106	600 V	High side and Low side	600
IRS2181		High side and Low side	2300

COMPLETE SOLUTION FOR ISOLATED SOLAR CONVERTERS

MOSFETs

Voltage (V)	$R_{DS(on)}$ max (mOhm) @ $10V_{GS}$	DirectFET®		PQFN		D²-Pak	D²-Pak 7lead	TO-220	TO-247
		Part Number	Footprint	Part Number	Footprint				
60	1.5	IRF7749L1	L8						
	2.1						IRFS3006-7P		
	2.5					IRFS3006		IRFB3006	
	4.2			IRFH5006	5 x 6 B	IRFS3306		IRFB3306	
	8.4					IRF1018ES		IRF1018E	
	14.4			IRFH5406	5 x 6 B				
100	2.6								IRFP4468
	3.5	IRF7769L1	L8						
	4.0						IRFS4010-7P		
	4.7					IRFS4010		IRFB4110	IRFP4110
	9.0			IRFH5010	5 x 6 B	IRFS4410Z		IRFB4410Z	
	13.5			IRFH7110	5 x 6 E				
150	5.9								IRFP4568
	11.0	IRF7779L2	L8						
	12.0					IRFS4115	IRFS4115-7P	IRFB4115	
	31.0			IRFH5015	5 x 6 B				
200	9.7								IRFP4668
	22.0					IRFS4127		IRFB4127	
	55.0			IRFH5020	5 x 6 B				
250	17.5								IRFP4768
	38.0	IRF7799L1	L8						
300	69.0							IRFB4137	IRFP4137
	32.0								IRFP4868

TYPICAL THREE PHASE MOTOR DRIVE

*see page 3

- IR's *iMOTION*™ Integrated Design Platform delivers everything you need to design a complete variable speed motor control subsystem. From the front panel and power entry to the motor terminals, *iMOTION*™ brings powerful digital, analog and power silicon together with algorithms, development software and design tools.
- IRAM Integrated Power Modules offer gate drive, power switches, and protection circuitry in one compact package.

iMOTION™ Digital Control ICs

Part Number	Description
IRMC(K/F)312	Full featured Digital control IC with capability to control two motors and PFC in QFP100 package. Well suited for air conditioner application.
IRMC(K/F)311	Digital control IC with capability to control two motors and PFC in QFP64 package. Well suited for air conditioner application.
IRMC(K/F)341	Full featured Digital control IC for single motor drive in QFP64 package.
IRMC(K/F)343	Digital control IC with capability to control one motor and PFC in QFP64 package.
IRMC(K/F)371	Minimum feature set Digital control IC for single motor drive in QFP48 package. Well suited for fan application.
IRMC(K/F)171	Minimum feature set Digital control IC for single motor drive in QFP48 package. Well suited for refrigerator application.
IRMC(K/F)143	Digital control IC with capability to control one motor and PFC in QFP64 package.
IRMCK201	Digital control IC to control one encoder based motor.

IRAM – Integrated Power Modules

Part Number	Voltage (V) & Shunt	Typical Load (W)	I_0 @ T_c = 100°C (A_{RMS})	Package
IRAMS06UP60A	600 V Open Emitter	400W	3	SIP-1
IRAMS06UP60B	600 V Integr. Shunt	400W	3	SIP-1
IRAM136-1061A2	600 V Open Emitter	750W	5	SIP-1A
IRAMS10UP60A	600 V Open Emitter	750W	5	SIP-1
IRAMS10UP60B	600 V Integr. Shunt	750W	5	SIP-1
IRAMS12UP60A	600 V Open Emitter	1000W	6	SIP-1
IRAMX16UP60A	600 V Open Emitter	1500W	8	SIP-2
IRAMX16UP60B	600 V Integr. Shunt	1500W	8	SIP-2
IRAMX20UP60A	600 V Open Emitter	2500W	10	SIP-2
IRAMY20UP60B	600 V Integr. Shunt	2500W	10	SIP-3
IRAM136-3063B	600 V Integr. Shunt	3000W	15	SIP-3
IRAM136-3023B	600 V Integr. Shunt	750W	15	SIP-3

µIPM™

Cooler, Smaller, Cheaper, Simpler, Smarter

The Design Engineer's Dream

µIPM™ is International Rectifier's family of ultra compact, surface mount integrated power modules (patent pending) designed for low power motor drive applications.

Part Number	Size (mm)	Voltage (V)	$R_{DS(on)}$ typ	$R_{DS(on)}$ max	Current (DC at 25C)	Motor Current*		Motor Power $V_o = 150/75V_{RMS}$	Topology
						w/o HS	w HS		
IRSM836-024MA	12 x 12	250V	2.0Ω	2.4Ω	2A	470mA	550mA	60W/72W	Open Source
IRSM836-044MA	12 x 12	250V	0.90Ω	1.04Ω	4A	750mA	850mA	95W/110W	Open Source
IRSM836-025MA	12 x 12	500V	3.5Ω	4.0Ω	2A	360mA	440mA	93W/114W	Open Source
IRSM836-035MB	12 x 12	500V	1.85Ω	2.2Ω	3A	420mA	510mA	108W/135W	Common Source
IRSM836-035MA	12 x 12	500V	1.85Ω	2.2Ω	3A	420mA	510mA	108W/135W	Open Source
IRSM836-045MA	12 x 12	500V	1.45Ω	1.7Ω	4A	550mA	(750mA)	145W/195W	Open Source
IRSM808-105MH	9 x 8	500V	0.58Ω	0.8Ω	10A	1.1A	(1.5A)	285W/390W	Half Bridge
IRSM807-105MH	9 x 8	500V	0.58Ω	0.8Ω	10A	1.1A	(1.5A)	285W/390W	Half Bridge

*rms, Fc=16kHz ,2-phase PWM, ΔTca=70C, Ta=25

FEATURES:

- Smallest form factor in the industry at 12 x 12 x 0.9 mm
- Proprietary 3-phase gate drivers and bootstrap functionality
- Low $R_{DS(on)}$ Trench FREDFET
- Designed for use without a heat sink
- Protection features: shutdown pin, under-voltage lockout, over-current protection
- Open-source for leg-shunt current sensing
- Optimized dV/dt for loss and EMI trade offs
- Motor power range up to ~250W, without a heat sink

The *µIPM*™ Advantage

- Shortens design time
- Shrinks board space requirements
- Replaces more than 20 discrete parts to deliver a complete motor drive stage
- Slashes assembly time and cost
- Simplifies procurement and inventory management
- Reference design kits available for quick evaluation on any 3-phase motor

Co-Pack IGBTs

Voltage (V)	I_C @ 100°C (A)	$V_{CE(ON)}$ (typ)	Speed	T_{SC} (us)	E_{TS} typ (mJ)	V_F (typ)	TO-262	D-Pak	D²-Pak	TO-220	TO-220 FullPak	TO-247	TO-247 (Long Lead)	Super TO-247
	2	1.83	8-30 kHz	10	0.10	1.50		IRGR2B60KD2						
	4	1.75	8-30 kHz	5	0.11	1.60				IRGB4059D				
	5	2.39	8-30 kHz	10	0.39	1.50		IRG4RC10KD		IRG4BC10KD				
	6	1.70	8-30 kHz	5	0.18	1.60		IRGR4045D	IRGS4045D	IRGB4045D				
	6	2.27	8-30 kHz	10	0.64	1.40					IRG4IBC20KD			
	10	1.80	8-30 kHz	10	0.25	1.25	IRGSL6B60KD		IRGS6B60KD	IRGB6B60KD	IRGIB6B60KD			
	9	2.10	8-30 kHz	10	0.12	1.40	IRGSL4B60KD1		IRGS4B60KD1	IRGB4B60KD1				
	8	1.66	1-8 kHz	10	0.89	1.40					IRG4IBC20FD			
	8	1.55	8-30 kHz	5	0.22	1.80				IRGB4060D				
	8	1.80	8-30 kHz	10	0.32	1.25					IRGIB7B60KD			
	9	1.88	1-8 kHz	10	2.25	1.50				IRG4BC15MD				
	9	2.27	8-30 kHz	10	0.64	1.40			IRG4BC20KD-S	IRG4BC20KD				
	9	2.21	8-30 kHz	10	1.19	1.40					IRG4IBC30KD			
	10	1.60	8-30 kHz	5	0.23	2.50			IRGS4064D	IRGB4064D				
	10	1.70	8-30 kHz	10	0.32	1.80					IRGIB10B60KD1			
	11	1.85	1-8 kHz	10	2.44	1.40			IRG4BC20MD-S	IRG4BC20MD				
	12	1.55	8-30 kHz	5	0.30	2.10			IRGS4056D	IRGB4056D				
600	12	1.80	8-30 kHz	10	0.46	1.69					IRGIB15B60KD1			
	19	1.80	8-30 kHz	10	0.39	1.30	IRGSL10B60KD		IRGS10B60KD	IRGB10B60KD				
	15	1.80	8-30 kHz	10	0.56	1.20	IRGSL15B60KD		IRGS15B60KD	IRGB15B60KD				
	16	2.21	8-30 kHz	10	1.18	1.40			IRG4BC30KD-S	IRG4BC30KD		IRG4PC30KD		
	18	1.65	8-30 kHz	5	0.45	2.30				IRGB4061D				
	24	1.60	8-30 kHz	5	0.72	1.80	IRGSL4062D		IRGS4062D	IRGB4062D		IRGP4062D	IRGP4062D-E	
	25	2.10	8-30 kHz	10	1.71	1.30						IRG4PC40KD		
	30	1.84	8-30 kHz	10	2.45	1.30						IRG4PC50KD	IRG4PC50KD-E	
	30	1.95	8-30 kHz	10	1.18	1.30							IRGP30B60KD-E	
	40	1.60	8-30 kHz	5	0.72	1.80						IRGP4640D	IRGP4640D-E	
	48	1.65	8-30 kHz	5	1.90	1.95						IRGP4063D	IRGP4063D-E	
	48	1.65	8-30 kHz	5	1.90	2.00						IRGP4063D1	IRGP4063D1-E	
	50	1.60	8-30 kHz	5	1.02	2.20						IRGP4069D	IRGP4069D-E	
	50	1.60	8-30 kHz	5	1.02	2.20						IRGP4650D	IRGP4650D-E	
	60	1.83	8-30 kHz	10	6.28	1.40								IRG4PSC71KD
	60	1.65	8-30 kHz	5	1.90	1.95						IRGP4660D	IRGP4660D-E	
	90	1.70	8-30 kHz	5	4.62	2.23						IRGP4066D	IRGP4066D-E	
	160	1.70	8-30 kHz	5	9.18	2.40								IRGPS4067D
	5	3.17	8-30 kHz	10	0.92	2.50						IRG4PH20KD		
	6	2.75	8-30 kHz	10	0.72	2.13				IRGB5B120KD				
	10	3.10	8-30 kHz	10	2.10	3.40						IRG4PH30KD		
	15	2.74	8-30 kHz	10	2.43	2.60						IRG4PH40KD		
1200	16	2.05	8-30 kHz	10	0.91	2.00						IRG7PH30K10D		
	24	2.77	8-30 kHz	10	5.73	2.50						IRG4PH50KD		
	30	2.46	8-30 kHz	10	2.56	1.86						IRGP30B120KD	IRGP30B120KD-E	
	42	2.97	8-30 kHz	10	8.90	2.50								IRG4PSH71KD
	60	2.50	8-30 kHz	10	8.00	1.93								IRGPS60B120KD

MOSFETs

Voltage (V)	$R_{DS(on)}$ max (mOhm) @ $10V_{GS}$	DirectFET®		PQFN		D²-Pak	D²-Pak 7lead	TO-220	TO-247
		Part Number	Footprint	Part Number	Footprint				
40	1	IRF7739L1	L8						
	1.25						IRFS3004-7P		
	1.3							IRFP7430	IRFB7430
	1.4	IRF7946	MX						
	1.4			IRFH7004	5 x 6 B				
	1.4						IRFS7437-7P		
	1.6							IRFB7434	
	1.75					IRFS3004		IRFB3004	
	1.8					IRFS7437		IRFB7437	
	2.4			IRFH7440	5 x 6 E	IRFS7440		IRFB7440	
	3.3			IRFH7446	5 x 6 E			IRFB7446	
60	1.5	IRF7749L1	L8						
	2.1						IRFS3006-7P		
	2.5					IRFS3006		IRFB3006	
	4.2			IRFH5006	5 x 6 B	IRFS3306		IRFB3306	
	8.4					IRF1018ES		IRF1018E	
	14.4			IRFH5406	5 x 6 B				
75	2.3	IRF7759L2	L8						
	2.6						IRFS3107-7P		
	3					IRFS3107			
	3.3							IRFB3077	IRFP3077
	5.8			IRFH5007	5 x 6 B	IRFS3307Z		IRFB3307Z	
	8.5			IRFH7107	5 x 6 E				
100	2.6								IRFP4468
	3.5	IRF7769L1	L8						
	4						IRFS4010-7P		
	4.7					IRFS4010		IRFB4110	IRFP4110
	9			IRFH5010	5 x 6 B	IRFS4410Z		IRFB4410Z	
	13.5			IRFH7110	5 x 6 E				
150	5.9								
	11	IRF7779L2	L8						
	12					IRFS4115	IRFS4115-7P	IRFB4115	
	31			IRFH5015	5 x 6 B				
200	9.7								IRFP4668
	22					IRFS4127		IRFB4127	
	55			IRFH5020	5 x 6 B				
250	17.5								IRFP4768
	38	IRF7799L1	L8						
300	69							IRFB4137	IRFP4137
	32								IRFP4868

Logic-Level MOSFETs

Voltage (V)	$R_{DS(on)}$ max (mOhm) @ 4.5 V_{GS}	PQFN		D-Pak	D^2-Pak	D^2-Pak 7lead	TO-220	TO-247
		Part Number	Footprint					
20	2.5	IRLHM620	3.3 x 3.3					
	4.0			IRLR6225				
	1.2	IRFH6200	5 x 6 B					
	3.0	IRLH6224	5 x 6 E					
30	3.5	IRLHM630	3.3 x 3.3					
40	3.2	IRLH5034	5 x 6 B					
	6.5			IRLR3114Z				
	4.9	IRLH7134	5 x 6 E					
	5.0				IRL1404ZS		IRL1404Z	
	2.0				IRLS3034		IRLB3034	IRLP3034
	1.7					IRLS3034-7P		
50	100.0			IRLR024Z				
	22.5			IRLR2905Z				
	12.0			IRLR3705Z				
60	8.3			IRLR3636				
	5.5	IRLH5036	5 x 6 B					
	2.8				IRLS3036		IRLB3036	
	2.2					IRLS3036-7P		
100	16.0			IRLR3110Z				
	4.5				IRLS4030		IRLB4030	
	4.1					IRLS4030-7P		
	9.9	IRLH5030	5 x 6 B					

FLUORESCENT BALLAST

Fixed Output Fluorescent Ballast ICs

Part Number	Description
IRS2580D	"Combo8" IC: PFC, ballast control and half-bridge driver featuring full programmability in compact SO8 package.
IRS2526D	"Mini-8" IC: Ballast control and half-bridge driver featuring full programmability in compact SO8 package.
IRS2168D	Fully integrated protected 600V ballast control IC designed to drive fluorescent lamps with PFC in 16-Pin package. Designed for universal input and/or multi-lamp ballast applications.
IRS2166D	Improved version of the IR2166. Fully integrated, protected 600V ballast control IC designed to drive fluorescent lamps with PFC in a 16-pin package.
IR2520D	600V Ballast Controller IC with Adaptive Zero-Voltage Switching, Internal Crest Factor Over-Current Protection and an Integrated Bootstrap Diode in an 8-Pin Dip package.
IRS21571D	Fully integrated, fully protected 600V ballast control IC designed to drive fluorescent and HID Lamps.
IR2156	High voltage half-bridge gate driver with a programmable oscillator and state diagram to form a complete ballast control IC including programmable features and built-in protection.
IRS2153D	Improved version of the popular IR2153 gate driver IC which incorporates an internal bootstrap diode as well as a 2V under-voltage lockout hysteresis.

Dimmable Fluorescent Ballast ICs

Part Number	Description
IRS2530D	A complete ballast IC in just 8-pin, with minimal extra components, which allows dimming down to 10%.
IRS2158D	A complete 16-pin ballast IC, fully programmable. It requires minimum number of extra components, because it includes the full range of protection features like brown-out, lamp End-Of-Life and fault counter. Recommended for dimming performance below 10%.

HID

Full Featured Ballast ICs

Part Number	Description
IRS2573D	Fully-integrated, fully-protected 600V HID control IC designed to drive all types of HID lamps. Internal circuitry provides control for ignition, warm-up, running and fault operating modes. The IRS2573D features include ignition timing control, constant lamp power control, programmable full-bridge running frequency, programmable over and under-voltage protection and programmable over-current protection.

Bridge Drivers

Part Number	Description
IRS2453D	Self-oscillating full bridge driver with 50% duty cycle, 600V - 180/260mA
IRS2101	High and low side driver, 600V - 130/270mA
IRS2308	High and low side driver, 600V - 200/350mA
IRS2104	Half-bridge driver - 600V, 130/270mA - SD
IRS2109	Half-bridge driver - 600V, 120/250mA - SD - VBS UVLO

Buck Stage Drivers

Part Number	Description
IRS2117	Single high side driver, 600V - 200/400mA
IRS21844	Half-bridge driver, 600V 1.9/2.3A

IGBTs

Part Number	Description
IRG4RC10SD	Standard-Speed IGBT designed for applications switching below 1kHz in Dpak Package.

LED CONSTANT CURRENT

LED Constant Current ICs	
Part Number	**Description**
IRS2980	Dimming high voltage LED driver IC featuring hysteretic current regulation.
IRS25401	200V High brightness LEDs (200mA and up) driver, particularly for offline non isolated applications, with long string of LEDs.
IRS25411	600V High brightness LEDs (200mA and up) driver, particularly for offline non isolated applications, with long string of LEDs.

HALOGEN BALLAST CONFIGURATION

Halogen Converter ICs	
Part Number	**Description**
IR2161	Halogen Converter Control IC in a 8-lead PDIP package. Features Auto Resetting Short Circuit Protection, Auto Resetting Overload Protection, Overtemperature Protection, Phase Cut Dimmable, Adaptive Deadtime, Output Voltage Shift Compensation and Softstart.
IRS2153D	The IRS2153D is an improved version of the popular IR2153 gate driver IC, and incorporates an internal bootstrap diode as well as a 2V under-voltage lockout hysteresis.

PowIRaudio™ INTEGRATED CLASS D AUDIO AMPLIFIER

CLASS D DRIVER + DIGITAL AUDIO MOSFET

PowIRaudio™ INTEGRATED CLASS D AUDIO AMPLIFIER

PowIRaudio™ Integrated Class D Amplifier

*Higher power capable if heatsink is used

PowIRaudio™ Integrated Two-Channel Class D Amplifier

Audio ICs

Part Number	Description
IRS2011(S)PBF	A high voltage, high speed power MOSFET driver with independent high- and low-side referenced output channels.
IRS20124SPBF	A high voltage, high speed power MOSFET driver with internal dead-time, over-current protection and shutdown functions.
IRS2092(S)PBF	High voltage, high performance Class D audio amplifier driver with PWM modulator and protection.
IRS2052MPBF	A high voltage, high performance integrated two channel Class D audio amplifier driver with PWM modulators and protections.
IRS2053MPBF	A high voltage, high performance integrated three channel Class D audio amplifier driver with PWM modulators and protections.
IRS2093MPBF	A high voltage, high performance integrated four channel Class D audio amplifier driver with PWM modulators and protections.

DirectFET® MOSFETs

Clipping Power	Without Heatsink		With Heatsink	
	4 Ohm	8 Ohm	4 Ohm	8 Ohm
50W - 100W	IRF6645	IRF6665	IRF6665	IRF6665
100W - 120W	IRF6645		IRF6645	IRF6775M
120W - 200W			IRF6645	IRF6775M
200W - 250W			IRF6775M	IRF6785M

Through -Hole Packages

Clipping Power	Package	Load	
		4 Ohm	8 Ohm
50W - 60W	TO-220 Full-Pak 5-Pin	IRFI4024H-117	IRFI4212H-117
	TO-220	—	IRFB4212
60W - 100W	TO-220 Full-Pak 5-Pin	IRFI4212H-117	IRFI4212H-117
	TO-220	IRFB4212	IRFB4212
100W - 200W	TO-220 Full-Pak 5-Pin	IRFI4212H-117	IRFI4019H-117
	TO-220	IRFB4212	IRFB4019
200W - 300W	TO-220 Full-Pak 5-Pin	IRFI4019H-117	IRFI4020H-117
	TO-220	IRFB4019	IRFB4020
300W - 500W	TO-220 Full-Pak 5-Pin	—	—
	TO-220	IRFB4227	IRFB4229

The PowIRaudio Advantage

- No heatsink required
- Best-in-class power efficiency and audio performance
- Reduce component count, simplify design
- Compatible with single supply or split rail configuration

INTELLIGENT POWER SWITCHES

IR's Intelligent Power Switches integrate a low $R_{DS(on)}$ output HEXFET® power MOSFET into a single package with protection and control circuits, making them the most rugged, efficient and compact devices available for automotive loads in harsh environments. All devices are qualified to AEC-Q100 Qualification

APPLICATIONS

- Transmission Controls
- Junction Boxes
- Electronic Stability Controls
- Anti-lock Brakes, Traction Control
- Diesel and Gas Direct Injection
- Pump Motors, Radiator Fans
- Head Diesel Glow Plugs
- Lamps

See *Product Catalog* page 56 for full product listing

MOTOR CONTROL

FEATURES

- Automotive Q100 and Q101 qualifications
- HVIC with integrated protection
- Extremely low $R_{DS(ON)}$ FET for 3-phase inverter and reverse battery protection

THE IR ADVANTAGE

- Excellent reliability for Automotive environment
- Chipsets for maximum integration
- MOSFET with rugged and fully characterized avalanche SOA
- D2-PAK and TO-220 packages rated to 195A, D2-PAK-7P to 240A
- Performance power packaging for outstanding power density
- Reduced EMI

Driver ICs

Part Number	Description	Packages	Output Current	Offset Voltage	V_{CC} UVLO
AUIRS21814S	2ch High and Low -Side	SOIC14	+1.9 / -2.3A	600V	8.2V
AUIRS2110S	2ch High and Low -Side	SOIC16W	+2.0 / -2.0A	500V	
AUIRS2336S	3 Phase Inverter Driver	SOIC28W	+200 / -350mA	600V	
AUIRS2184S	Half Bridge	SOIC8	+1.4 / -1.8A		

DirectFET®s

Part Number	Can Size	V_{DS} (V)	$R_{DS(on)}$ max (mOhm)	I_D max(A) (S_I limited)	Q_G (nC)	Gate Drive
AUIRF7739L2	Large	40	1	270	220	Std
AUIRF7738L2			1.6	209	147	
AUIRF7737L2			2.2	167	104	
AUIRF7736M2	Medium		3.1	141	83	

MOSFETs

Part Number	Package	V_{DS} (V)	$R_{DS(on)}$ max (mOhm)	I_D max(A) (S_I limited)	Q_G (nC)	Gate Drive
AUIRF(B,S,SL)3004(-7P)	TO-220, TO-262, D-Pak, D²-Pak 7pin	40	1.4	400	198	Std
AUIRL(B,S,SL)3034(-7P)	TO-220, TO-262, D-Pak, D²-Pak 7pin	40	1.4	380	120	Logic
AUIRF2804(L,S,-7P)	TO-220, TO-262, D-Pak, D²-Pak 7pin	40	1.6	320	170	Std
AUIRL1404Z(L,S)	TO-220, TO-262, D-Pak	40	3.1	180	75	Logic
AUIRF3805(L,S,-7P)	TO-220, TO-262, D²-Pak, D²-Pak 7pin	55	2.6	240	130	Std
AUIRF2805(L,S)	TO-220, TO-262, D²-Pak	55	4.7	135	150	Std
AUIRF1405Z(L,S,-7P)	TO-220, TO-262, D²-Pak, D²-Pak 7pin	55	4.9	150	120	Std
AUIRL(B,S,SL)3036(-7P)	TO-220, TO-262, D-Pak, D²-Pak 7pin	60	1.9	233	110	Logic
AUIRL(B,S)3006(-7P)	TO-220, TO-262, D²-Pak, D²-Pak 7pin	60	2.1	293	200	Logic
AUIRF(B,S,L,P)3206	TO-220, TO-247, TO-262, D²-Pak	60	3.0	210	120	Std
AUIRF(B,S,L,P)3306	TO-220, TO-247, TO-262, D²-Pak	60	4.2	160	85	Std
AUIRF(S,SL)3107(-7P)	D²-Pak, TO-262, D²-Pak 7pin	75	2.6	260	160	Std
AUIRF2907Z(S,-7P)	TO-220, D²-Pak, D²-Pak 7pin	75	3.8	180	170	Std
AUIRF(B,S,SL)3207Z	TO-262, TO-220, D²-Pak	75	4.1	170	120	Std

DC-DC CONVERTER

Automotive DirectFET®2 Power MOSFETs

Part Number	V_{DS}	$R_{DS(on)}$ max @ 10V_{GS}	I_D max @TC = 25°C	Q_G typ @10V_{GS}	Package
AUIRF7669L2	100 V	4.4 mΩ	114 A	81 nC	DirectFET® L
AUIRF7759L2	75 V	2.3 mΩ	160 A	200 nC	DirectFET® L
AUIRF7739L2	40 V	1 mΩ	270 A	220 nC	DirectFET® L
AUIRF7736M2	40 V	3.1 mΩ	141 A	83 nC	DirectFET® M

600V High Voltage IC for Switching Stage Drivers

Part Number	Description	Output Current	V_{CC} UVLO	Package
AUIRS2191S	High Speed High and Low Side	+3.5 / -3.5 A	8.2 V	SOIC16N
AUIRS21811S	High Speed High and Low Side	+1.9 / -2.3 A	8.2 V	SOIC8

600V Automotive IGBTs for Switching Stage

Part Number	I_C @ TC = 100°C	$V_{CE(on)}$ typ	Package
AUIRGP35B60PD	34 A	1.85 V	TO-247
AUIRGP50B60PD1	45 A	2.00 V	TO-247

25V Low Voltage IC for Switching Stage Drivers

Part Number	Description	Output Current	Package
AUIRS4426S	Dual Channel Low Side	+2.3 / -3.3A	SOIC8
AUIRS4427S	Dual Channel Low Side	+2.3 / -3.3A	SOIC8
AUIRS4428S	Dual Channel Low Side	+2.3 / -3.3A	SOIC8

FEATURES

- Automotive Q101 qualifications
- HVIC with integrated protections
- Optimized copack IGBT for high frequency SMPS operation
- Extremely low $R_{DS(ON)}$ FET and high current ratings for synchronous rectification stage

PIEZO INJECTION

HV Power Supply and Current Regulator

Cylinder Select Switches

FEATURES

- Automotive Q100 and Q101 qualifications
- HVIC with integrated protection
- High performance SMPS IGBT or MOSFET
- Cost efficient selector switch IGBT

THE IR ADVANTAGE

- Excellent reliability for Automotive environment
- Chipsets for maximum integration
- IGBT with rugged and fully characterized SOA
- Reduced EMI

Driver ICs

Part Number	Description	Packages	Output Current	Offset Voltage	V_{CC} UVLO
D1 Driver					
AUIRS21811S	High Speed 2ch High and Low Side	SOIC8	+1.9 / -2.3A	600V	8.2V
AUIRS2181S	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 and Low Side	SOIC16W	+290 / - 600mA	600V	8.2V
D2 Driver					
AUIRS4427S	2ch Low-Side	SOIC8	+2.3 / -3.3A	N/A	N/A
D3 Driver					
AUIRS2123S	1ch High-Side	SOIC8	+500 / - 500mA	600V	8.0V

IGBTs

Part Number	Package	V_{CES} (V)	I_C @ TC = 100°C (A)	$V_{CE(on)}$ typ (V)
S1/S2: SMPS IGBT				
AUIRGS4056D	D²-Pak	600	12	1.55
AUIRGS4062D	D²-Pak	600	24	1.65
AUIRGP50B60PD1	TO-247	600	45	2.00
S3/S4: Selector Switch IGBT				
Under Development				
AUIRGR4045D	D-Pak	600	6	1.7

MOSFETs

Part Number	Package	$V_{(BR)DSS}$ (V)	$R_{DS(on)}$ max @10V_{GS} (mΩ)	I_D max @ TC = 25°C	Q_G typ @ V_{GS}=10V (nC)
S3/S4: Selector Switch MOSFET					
AUIRFR4292	D-Pak	250	345	9.3	13
S1/S2: SMPS MOSFET					
AUIRFS6535	D²-Pak	300	185	19	38

PRODUCT CATALOG

Power Surface Mount Devices

Voltage (V)	I_D (A) @ T_C = 25°C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	DirectFET		PQFN		D-Pak	D²Pak	D²Pak-7-Lead
				Part Number	Footprint	Part Number	Footprint			
-30	-24	14.6	16			IRFHM9331	3 x 3			
	-40	4.6	58			IRFH9310	5 x 6 A			
	-160	2.9	130	IRF9383M	MX					
20	36	16	4.8						IRL3714ZS	
	37	15	4.7					IRLR3714Z		
	50	11	7						IRL3715ZS	
	49	11	7.2					IRLR3715Z		
	60	8.4	9.3					IRFR3704Z		
	67	7.9	8.7						IRF3704ZS	
	92	6	16						IRF3711ZS	
	93	5.7	18					IRFR3711Z		
	120	4.2	21					IRLR3717		
	180	1.8	47	IRF6691	MT					
24	340	1.65	160						IRF1324S	
	429	1	180							IRF1324S-7P
25	51	6	7			IRFH5255	5 x 6 B			
	50	5.2	7.4	IRF6810S	S1					
	40	4.4	7.7			IRFHM4234	3.3 x 3.3			
	40	3.3	10			IRFHM4231	3.3 x 3.3			
	40	2.2	17			IRFHM4226	3.3 x 3.3			
	100	1.4	39			IRFH5250D	5 x 6 B			
	100	1.15	52			IRFH5250	5 x 6 B			
	60	4.5	8.2			IRFH4234	5 x 6 B			
	60	3.5	10			IRFH4231	5 x 6 B			
	74	3.7	11	IRF6811S	SQ					
	100	1.35	26			IRFH4213D	5 x 6 B			
	100	1.35	26			IRFH4213	5 x 6 B			
	100	1.1	36			IRFH4210D	5 x 6 B			
	100	1.1	36			IRFH4210	5 x 6 B			
	100	0.95	46			IRFH4201	5 x 6 B			
	125	1.7	17	IRF6892S	S3C					
	160	1.3	26	IRF6894M	MX					
	168	1.6	25	IRF6893M	MX					
	213	1.1	35	IRF6898M	MX					
30	43	13.8	7					IRLR7807Z		
	35	12.8	4.7			IRFH8337	5 x 6 E			
	29	12.4	5.4			IRFH3707	3 x 3			

Power Surface Mount Devices

Voltage (V)	I_D (A) @ T_C = 25°C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	DirectFET		PQFN		D-Pak	D²Pak	D²Pak-7-Lead
				Part Number	Footprint	Part Number	Footprint			
	59	9.5	9.7						IRF3707ZS	
	44	9	7.1			IRFH8334	5 x 6 E			
	36	8.9	6.6	IRF6708S2	S1					
	58	8.9	10					IRLR8729		
	65	8.4	8.5					IRLR8721		
	45	8.1	7.8			IRFH5306	5 x 6 B			
	35	8	7.9	IRF6720S2	S1					
	47	7.8	7.3			IRFHM831	3.3 x 3.3			
	56	7.7	11	IRF6722M	MP					
	58	7.7	11	IRF6722S	ST					
	60	7.3	9.2	IRF8327S	SQ					
	42	7.1	9.6			IRFH3702	3 x 3			
	56	6.6	9.3			IRFH8330	5 x 6 E			
	87	6.3	17						IRF3709ZS	
	57	6.1	26			IRFHM8329	3.3 x 3.3			
	94	6	22					IRLR8113		
	105	6	23						IRL8113S	
	86	5.8	15					IRLR8726		
30	82	5	15			IRFH8325	5 x 6 E			
	83	4.9	19.4			IRFH8321	5 x 6 E			
	79	4.5	16			IRFH5304	5 x 6 B			
	40	4.3	13			IRFHM830D	3.3 x 3.3			
	82	4.2	15			IRFH5303	5 x 6 B			
	90	4.1	14			IRFH8324	5 x 6 E			
	40	3.8	31			IRFHM830	3.3 x 3.3			
	150	3.8	32						IRL7833S	
	120	3.1	41			IRFH8318	5 x 6 E			
	160	3.1	39					IRLR8743		
	120	2.95	30			IRFH8316	5 x 6 E			
	140	2.5	25	IRF8306M	MX					
	150	2.5	28	IRF8308M	MX					
	100	2.5	26			IRFH5302D	5 x 6 B			
	260	2.4	160						IRF2903ZS	
	170	2.2	28	IRF8304M	MX					
	100	2.1	29			IRFH5302	5 x 6 B			
	169	2.1	30			IRFH8311	5 x 6 E			
	100	1.85	37			IRFH5301	5 x 6 B			

Power Surface Mount Devices

Voltage (V)	I_D (A) @ T_C = 25°C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	DirectFET		PQFN		D-Pak	D^2Pak	D^2Pak-7-Lead
				Part Number	Footprint	Part Number	Footprint			
30	190	1.8	35	IRF8302M	MX					
	180	1.7	51	IRF6726M	MT					
	180	1.7	49	IRF6727M	MX					
	100	1.4	50			IRFH5300	5 x 6 B			
	100	1.3	50			IRFH8307	5 x 6 B			
40	77	9	30					IRFR3504Z		
	55	8.3	19	IRF6614	ST					
	120	5.5	68						IRF4104S	
	119	5.5	59					IRFR4104		
	106	5	29	IRF6616	MX					
	100	4.3	42			IRFH5204	5 x 6 B			
	190	3.7	100						IRF1404ZS	
	100	3.5	53			IRFH5104	5 x 6 B			
	150	3.4	42	IRF6613	MT					
	117	3.3	65			IRFH7446	5 x 6 E			
	100	2.6	73			IRFH5004	5 x 6 B			
	208	2.5	90						IRFS7440	
	159	2.4	92			IRFH7440	5 x 6 E			
	180	2.4	89					IRFR7440		
	280	2.3	160						IRF2804S	
	156	1.9	89	IRF7737L2	L6					
	250	1.8	150						IRFS7437	
	340	1.75	160						IRFS3004	
	320	1.6	170							IRF2804S-7P
	184	1.6	129	IRF7738L2	L6					
	198	1.4	141	IRF7946	MX					
	259	1.4	129			IRFH7004	5 x 6 B			
	295	1.4	150							IRFS7437-7P
	400	1.25	160							IRFS3004-7P
	270	1	220	IRF7739L2	L8					
55	30	24.5	18					IRFR4105Z		
	51	13.9	29						IRFZ44ZS	
	62	11	40					IRFR48Z		
	61	11	43						IRFZ48ZS	
	94	7.5	63						IRF1010ZS	
	110	6.5	76						IRF3205ZS	
	240	2.6	130							IRF3805L-7P

Power Surface Mount Devices

Voltage (V)	I_D (A) @ T_C = 25°C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	DirectFET		PQFN		D-Pak	D²Pak	D²Pak-7-Lead
				Part Number	Footprint	Part Number	Footprint			
60	40	14.4	23			IRFH5406	5 x 6 B			
	67	11	24	IRF6674	MZ					
	86	7	36	IRF6648	MN					
	89	6.7	40			IRFH5206	5 x 6 B			
	100	5.6	50			IRFH5106	5 x 6 B			
	160	4.2	85						IRFS3306	
	100	4.1	67			IRFH5006	5 x 6 B			
	210	3	120						IRFS3206	
	270	2.5	200						IRFS3006	
	293	2.1	200							IRFS3006-7P
	200	1.5	200	IRF7749L2	L8					
75	45	22	34					IRFR2607Z		
	53	16	50					IRFR2307Z		
	71	9.6	39			IRFH5207	5 x 6 B			
	75	8.5	48			IRFH7107	5 x 6 E			
	100	5.9	65			IRFH5007	5 x 6 B			
	120	5.8	79						IRFS3307Z	
	170	4.1	120						IRFS3207Z	
	160	3.8	170							IRF2907ZS-7P
	230	3	160						IRFS3107	
	260	2.6	160							IRFS3107-7P
	160	2.3	200	IRF7759L2	L8					
80	55	15	22	IRF6668	MZ					
	68	9.5	36	IRF6646	MN					
100	8.7	190	6.9					IRFR120Z		
	19	62	8.7	IRF6655	SH					
	19	62	8.7	IRF6665	SH					
	14.4	62	8.3	IRF7665S2	SB					
	25	35	14	IRF6645	SJ					
	36	26.5	42						IRF540ZS	
	47	22	22	IRF6662	MZ					
	59	18	82						IRF3710ZS	
	46	18	24			IRFH5053	5 x 6 A			
	56	18	69					IRFR3710Z		
	55	14.9	39			IRFH5210	5 x 6 B			
	73	14	90						IRFS4610	
	63	13.9	54					IRFR4510		

Power Surface Mount Devices

Voltage (V)	I_D (A) @ T_C = 25°C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	DirectFET		PQFN		D-Pak	D²Pak	D²Pak-7-Lead
				Part Number	Footprint	Part Number	Footprint			
100	61	13.9	58						IRFS4510	
	58	13.5	58			IRFH7110	5 x 6 E			
	60	13	35	IRF6644	MN					
	63	12.4	48			IRFH5110	5 x 6 B			
	100	9	65			IRFH5010	5 x 6 B			
	97	9	83						IRFS4410Z	
	127	6	120						IRFS4310Z	
	180	4.7	143						IRFS4010	
	190	4	150							IRFS4010-7P
	124	3.5	200	IRF7769L2	L8					
150	27	58	20			IRFH5215	5 x 6 B			
	28	56	25	IRF6775M	MZ					
	33	42	26					IRFR4615		
	33	42	26						IRFS4615	
	33	42	26						IRFS5615	
	35	34.5	39	IRF6643	MZ					
	56	31	33			IRFH5015	5 x 6 B			
	83	15	71						IRFS4321	
	99	12.1	77						IRFS4115	
	105	11.8	73							IRFS4115-7P
	67	11	97	IRF7779L2	L8					
200	18	105	18						IRFS4020	
	19	100	26	IRF6785M	MZ					
	20	99.9	20			IRFH5220	5 x 6 B			
	24	78	25					IRFR4620		
	24	78	25						IRFS4620	
	24	77.5	25						IRFS5620	
	26	59.9	34	IRF6641	MZ					
	43	55	36			IRFH5020	5 x 6 B			
	62	26	70						IRFS4227	
	72	22	100						IRFS4127	
250	32	100	37			IRFH5025	5 x 6 B			
	45	48	72						IRFS4229	
	35	38	110	IRF7799L2	L8					
500	3.6	2200	13.3					IRFR812		
	6	1300	22.7					IRFR825		

Thru-Hole Power MOSFETs

Voltage (V)	I_D (A) @ T_C = 25C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	I-Pak	TO-220	TO-247
20	36	16	4.8		IRL3714Z	
	37	15	4.7	IRLU3714Z		
	49	11	7.2	IRLU3715Z		
	50	11	7		IRL3715Z	
	60	8.4	9.3	IRFU3704Z		
	67	7.9	8.7		IRF3704Z	
	92	6	16		IRF3711Z	
	93	5.7	18	IRFU3711Z		
	120	4.2	21	IRLU3717		
24	353	1.5	160		IRF1324	
25	57	8.7	6.8	IRLU8259		
	81	5.7	10	IRLU8256		
30	43	13.8	7	IRLU7807Z		
	58	8.9	10	IRLU8729		
	62	8.7	7.6		IRLB8721	
	65	8.4	8.5	IRLU8721		
	86	5.8	15	IRLU8726		
	87	6.3	17		IRF3709Z	
	92	4.8	15		IRLB8748	
	94	6	22	IRLU8113		
	105	6	23		IRL8113	
	150	3.2	36		IRLB8743	
	160	3.1	39	IRLU8743		
	260	2.4	160		IRF2903Z	
	260	1.95	57		IRLB3813	
40	75	5.5	68		IRF4104	
	77	9	30	IRFU3504Z		
	119	5.5	59	IRFU4104		
	120	5.5	68		IRF4104	
	123	3.3	62		IRFB7446	
	180	2.4	89	IRFU7440		
	190	3.7	100		IRF1404Z	
	208	2.5	90		IRFB7440	
	250	2	150		IRFB7437	
	280	2.3	160		IRF2804	
	317	1.6	216		IRFB7434	
	340	1.75	160		IRFB3004	
	350	1.7	220			IRFP4004
	404	1.3	300			IRFP7430
	409	1.3	300		IRFB7430	

Thru-Hole Power MOSFETs

Voltage (V)	I_D (A) @ T_C = 25C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	I-Pak	TO-220	TO-247
55	30	24.5	18	IRFU4105Z		
	51	13.9	29		IRFZ44Z	
	61	11	43		IRFZ48Z	
	62	11	40	IRFU48Z		
	91	7.5	63	IRFU1010Z		
	94	7.5	63		IRF1010Z	
	110	6.5	76		IRF3205Z	
60	160	4.2	85		IRFB3306	
	206	3.4	130		IRFB3256	
	210	3	120		IRFB3206	
	270	2.5	200		IRFB3006	
75	45	22	34	IRFU2607Z		
	53	16	50	IRFU2307Z		
	80	9	56		IRFB3607	
	84	5.8	79		IRFB3307ZG	
	120	5.8	79		IRFB3307Z	
	170	4.5	180			IRFP2907Z
	170	4.1	120		IRFB3207Z	
	210	3.3	160		IRFB3077	
	350	1.8	380			IRFP4368
100	8.7	190	6.9	IRFU120Z		
	18	72.5	15		IRFB4212	
	36	26.5	42		IRF540Z	
	42	36	73.3			IRFP150M
	43	9.3	81		IRFI4410Z	
	56	18	69	IRFU3710Z		
	59	18	82		IRF3710Z	
	62	13.5	58		IRFB4510	
	63	13.9	54	IRFU4510		
	73	14	90		IRFB4610	
	97	9	83		IRFB4410Z	
	127	6	120		IRFB4310Z	
	130	7	170		IRFB4310	
	180	4.5	150		IRFB4110	
	290	2.6	360			IRFP4468
150	17	95	13		IRFB4019	
	33	42	26	IRFU4615		
	35	39	26		IRFB5615	
	78	15.5	71			IRFP4321
	83	15	71		IRFB4321	
	104	11	77		IRFB4115	
	171	5.9	151			IRFP4568

Thru-Hole Power MOSFETs

Voltage (V)	I_D (A) @ T_C = 25C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	I-Pak	TO-220	TO-247
200	18	100	18		IRFB4020	
	24	78	25	IRFU4620		
	25	72.5	25		IRFB5620	
	30	75	82			IRFP250M
	50	40	156			IRFP260M
	65	25	70			IRFP4227
	65	26	70		IRFB4227	
	76	20	100		IRFB4127	
	130	9.7	161			IRFP4668
250	44	46	72			IRFP4229
	46	46	72		IRFB4229	
	57	33	99			IRFP4332
	60	33	99		IRFB4332	
	93	17.5	180			IRFP4768
300	38	69	83			IRFP4137
	38	69	83		IRFB4137	
	70	32	180			IRFP4868
500	3.6	2200	13.3		IRFB812	

Small PowIR MOSFETs

Voltage (V)	I_D (A) @ T_A = 25°C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	PQFN 2x2	SOT-23	TSOP-6	SO-8
-30	-20	4.6	58				IRF9310
	-16	6.6	31				IRF9317
	-15	7.2	34				IRF9321
	-12	11.9	18				IRF9328
	-9.8	17.5	14				IRF9332
	-9.2	19.4	14				IRF9333
	-5.4	59	4.7				IRF9335
	-12	11.9	18				IRF9388
	-9.8	17.5	14				IRF9392
	-9.2	19.4	14				IRF9393
	-6	37	6.9	IRFHS9301			
	-5.8	40	12			IRFTS9342	
	-3.6	64	4.8		IRLML9301		
	-2.3	165	2		IRLML9303		
-20	-7.2	31+	12	IRLHS2242			
	-4.3	54+	6.9		IRLML2244		

Small PowIR MOSFETs

Voltage (V)	I_D (A) @ T_A = 25°C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	PQFN 2x2	SOT-23	TSOP-6	SO-8
-20	-2.6	135+	2.9		IRLML2246		
	-6.9	-32+	12			IRLTS2242	
20	20	4.4	22				IRF3717
	27	2.45+	130				IRF6201
	10	11.7+	14	IRLHS6242			
	6.3	21+	8.9		IRLML6244		
	4.1	46+	3.5		IRLML6246		
25	25	2.7	35				IRF8252
	9.9	13	4.3	IRFHS8242			
	5.8	24	5.4		IRFML8244		
30	21	3.3	30				IRF7862
	11	11.9	6.2				IRF8707
	14	8.7	8.1				IRF8714
	14	8.5	8.3				IRF8721
	21	3.5	20				IRF8734
	18	4.8	17				IRF8736
	24	2.8	44				IRF8788
	19*	16	4.2	IRFHS8342			
	8.2	19	4.8			IRFTS8342	
	9.9	14.6+	11				IRL6342
	8.7	15.5+	11	IRLHS6342			
	5.3	27	2.6		IRLML0030		
	2.7	100	1		IRLML2030		
	5	29+	6.8		IRLML6344		
	3.4	63+	2.9		IRLML6346		
	8.3	17.5+	11			IRLTS6342	
40	18	5	33				IRF7842
	3.6	56	2.6		IRLML0040		
60	12	9.4	26				IRF7855
	2.7	92	2.5		IRLML0060		
	1.2	480	0.67		IRLML2060		
80	9.2	15	31				IRF7493
	10	13.4	27				IRF7854
100	7.3	22	34				IRF7495
	8.3	18	28				IRF7853
	1.6	220	2.5		IRLML0100		
150	5.1	43	25				IRF7815
200	3.7	78	29				IRF7820

* Measured at T_C = 25°C + $R_{DS(ON)}$ measured at V_{GS} = 4.5V

Logic Level MOSFETs

Voltage (V)	I_D(A) @ T_C = 25C	$R_{DS(ON)}$ max (mOhm) @ $10V_{GS}$	Q_G typ (nC) @ $10V_{GS}$	PQFN Part Number	PQFN Footprint	D-Pak	D²Pak	D²Pak-7 Lead	I-Pak	TO-220	TO-247
20	40	2.5+	52	IRLHM620	3.3 x 3.3						
	100	4+	48			IRLR6225					
	100	1.2+	155	IRFH6200	5 x 6 B						
	105	3+	86	IRLH6224	5 x 6 E						
30	40	3.5+	41	IRLHM630	3.3 x 3.3						
40	100	2.4	82	IRLH5034	5 x 6 B						
	130	4.5	40			IRLR3114Z					
	130	4.9	40						IRLU3114Z		
	134	3.3	39	IRLH7134	5 x 6 E						
	200	3.1	75				IRL1404ZS				
	200	3.1	75							IRL1404Z	
	327	1.7	108								IRLP3034
	343	1.7	108				IRLS3034				
	343	1.7	108							IRLB3034	
	380	1.4	120					IRLS3034-7P			
55	16	58	6.6			IRLR024Z					
	16	58	6.6						IRLU024Z		
	60	13.5	23			IRLR2905Z					
	60	13.5	23						IRLU2905Z		
	89	8	44			IRLR3705Z					
	89	8	44						IRLU3705Z		
60	99	6.8	33			IRLR3636					
	99	6.8	33						IRLU3636		
	100	4.4	44	IRLH5036	5 x 6 B						
	270	2.4	91				IRLS3036				
	270	2.4	91							IRLB3036G	
	270	2.4	91							IRLB3036	
	300	1.9	110					IRLS3036-7P			
100	63	14	34			IRLR3110Z					
	63	14	34						IRLU3110Z		
	180	4.3	87				IRLS4030				
	180	4.3	87							IRLB4030	
	190	3.9	93					IRLS4030-7P			
	100	9	44	IRLH5030	5 x 6 B						

+ $R_{DS(ON)}$ measured at V_{GS} = 4.5V

Dual MOSFETs

Voltage (V)	I_D (A) @ T_C = 25C	Configuration	PQFN		SO-8	TSSOP-8
			Part Number	Footprint		
-30	-9.2	Independent Symmetric			IRF9358TR	
	-8	Independent Symmetric			IRF9362TR	
	-2.3	Independent Symmetric	IRFHS9351	2 x 2		
20	4.5	Independent Symmetric	IRLHS6276	2 x 2		
25	7.8	Independent Symmetric				IRF8852TR
30	3.6	Independent Symmetric	IRLHS6376	2 x 2		
	8.1	Independent Symmetric			IRL6372TR	
	9.7	Independent Symmetric			IRF8313TR	
	11	Independent Symmetric	IRFHM8363	3.3 x 3.3 E		
	13	Half-bridge Asymmetric	IRFH7911	5 x 6 C		
	7.6	Half-bridge Asymmetric			IRF7904TR	
	8.9	Independent Asymmetric			IRF7905TR	
	9.1	Independent Asymmetric			IRF7907TR	
	8	Half-bridge Asymmetric			IRF8513TR	
50	3	Independent Symmetric			IRF7103U	
60	8	Independent Symmetric			IRF7351TR	
100	2.3	Independent Symmetric	IRFHM792	3.3 x 3.3 E		

Single High Efficiency IGBTs (no Tsc)

Voltage	Speed	I_C @ 100°C	$V_{CE(on)}$ (typ)	TO-262	D-Pak	D²Pak	TO-220	TO-220 FullPak	TO-247	TO-247 (Long Lead)	Super TO-247
250	DC-1 kHz	55	1.32						IRG4P254S		
	8-30 kHz	56	1.64						IRGP4050		
300		12	1.49					IRGI4086			
		40	1.49			IRGS4086	IRGB4086		IRGP4086		
330		12	1.45					IRG6I320U			
		15	1.30					IRG6I330U			
		25	1.45			IRG6S320U					
		40	1.80			IRG6S330U					
600	DC-1 kHz	8	1.58		IRG4RC10S		IRG4BC10S				
		10	1.40				IRG4BC20S				
		13	1.40					IRG4IBC30S			
		18	1.40			IRG4BC30S-S	IRG4BC30S		IRG4PC30S		
		31	1.32				IRG4BC40S		IRG4PC40S		
		41	1.28						IRG4PC50S		
	1-8 kHz	9	1.66		IRG4RC20F		IRG4BC20F				
		17	1.59				IRG4BC30F		IRG4PC30F		
		27	1.50				IRG4BC40F		IRG4PC40F		
		39	1.45						IRG4PC50F	IRG4PC50F-E	
		60	1.50						IRG4PC60F		
	8-30 kHz	5	2.15		IRG4RC10U						
		7	1.85				IRG4BC20U		IRG4PC20U		
		12	1.50					IRG6IC30U			
		12	1.95			IRG4BC30U-S	IRG4BC30U		IRG4PC30U		
		20	1.72				IRG4BC40U		IRG4PC40U		
		27	1.65						IRG4PC50U		
		40	1.70						IRG4PC60U		
		60	1.67								IRG4PSC71U
600	30-150 kHz	6	2.16					IRG4IBC20W			
		7	2.16			IRG4BC20W-S	IRG4BC20W				
		8	2.10					IRG4IBC30W			
		12	2.10			IRG4BC30W-S	IRG4BC30W		IRG4PC30W		
		20	2.05	IRG4BC40W-L		IRG4BC40W-S	IRG4BC40W		IRG4PC40W		
		27	1.93						IRG4PC50W		
900		28	2.25						IRG4PF50W		
1200	DC-1 kHz	33	1.47						IRG4PH50S	IRG4PH50S-E	
	8-30 kHz	20	3.05							IRGP20B120U-E	
		21	2.43						IRG4PH40U		
		24	2.78						IRG4PH50U	IRG4PH50U-E	
		35	1.90						IRG7PH35U	IRG7PH35U-E	
		40	3.12								IRGPS40B120U
		50	2.52								IRG4PSH71U
		60	1.70						IRG7PH42U	IRG7PH42U-E	
		75	1.70						IRG7PH46U	IRG7PH46U-E	
		90	1.70						IRG7PH50U	IRG7PH50U-E	

Co-Pack High Efficiency IGBTs (no Tsc)

Voltage	Speed (kHz)	I_C @ 100°C	$V_{CE(on)}$ (typ)	Vf (typ) DIODE	TO-262	D-Pak	D^2Pak	TO-220	TO-220 FullPak	TO-247	TO-247 (Long Lead)	Super TO-247
330	8-30	40	1.36	1.19				IRG6B330UD				
600	DC-1	8	1.58	1.50	IRG4BC10SD-L	IRG4RC10SD	IRG4BC10SD-S	IRG4BC10SD				
		9	1.20	1.40		IRG7RC07SD						
		10	1.40	1.40			IRG4BC20SD-S	IRG4BC20SD				
		41	1.28	1.30						IRG4PC50SD		
	1-8	9	1.66	1.40				IRG4BC20FD				
		11	1.59	1.40					IRG4IBC30FD			
		17	1.59	1.40			IRG4BC30FD-S	IRG4BC30FD		IRG4PC30FD		
		17	1.59	1.40				IRG4BC30FD1				
		27	1.50	1.30						IRG4PC40FD		
		39	1.45	1.30						IRG4PC50FD	IRG4PC50FD-E	
	8-30	4	2.15	1.50					IRG4IBC10UD			
		5	2.15	1.50		IRG4RC10UD		IRG4BC10UD				
		6	1.85	1.40					IRG4IBC20UD			
		7	1.85	1.40			IRG4BC20UD-S	IRG4BC20UD				
		8	2.02	1.50	IRG4BC15UD-L		IRG4BC15UD-S	IRG4BC15UD				
		9	1.95	1.40					IRG4IBC30UD			
		12	1.95	1.40				IRG4BC30UD		IRG4PC30UD		
		20	1.72	1.30						IRG4PC40UD	IRG4PC40UD-E	
		27	1.65	1.30						IRG4PC50UD	IRG4PC50UD-E	
		60	1.67	1.40								IRG4PSC71UD
		22	2.50	1.40						IRGP20B60PD	IRGP20B60PD-E	
		34	2.25	1.30						IRGP35B60PD	IRGP35B60PD-E	
		42	2.00	1.50						IRGP50B60PD	IRGP50B60PD-E	
		45	2.00	1.30						IRGP50B60PD1	IRGP50B60PD1-E	
900	30-150	28	2.25	2.50						IRG4PF50WD		
1200	8-30	20	3.05	1.67							IRGP20B120UD-E	
		21	2.43	2.60						IRG4PH40UD	IRG4PH40UD-E	
		21	2.43	3.40							IRG4PH40UD2-E	
		24	2.78	2.50						IRG4PH50UD	IRG4PH50UD-E	
		25	1.90	2.80						IRG7PH35UD		
		25	1.90	1.15						IRG7PH35UD1	IRG7PH35UD1-E	
		30	1.69	1.08						IRG7PH42UD2	IRG7PH42UD2-E	
		40	1.70	2.00						IRG7PH42UD	IRG7PH42UD-E	
		40	3.12	2.03								IRGPS40B120UD
		45	1.70	1.15						IRG7PH42UD1	IRG7PH42UD1-E	
		50	2.52	2.92								IRG4PSH71UD
		57	1.70	3.10						IRG7PH46UD	IRG7PH46UD-E	
		70	1.70	3.00								IRG7PSH50UD

Co-Pack Rugged IGBTs (with Tsc)

Voltage	Speed	I_c @ 100°C	$V_{CE(on)}$ (typ)	Tsc (µs)	Vf (typ) DIODE	TO-262	D-Pak	D²Pak	TO-220	TO-220 FullPak	TO-247	TO-247 (Long Lead)	Super TO-247
300	8-30 kHz	40	1.46	5	2.26						IRGP4072D		
600	1-8 kHz	8	1.66	10	1.40					IRG4IBC20FD			
		9	1.88	10	1.50				IRG4BC15MD				
		11	1.85	10	1.40			IRG4BC20MD-S	IRG4BC20MD				
	8-30 kHz	4	1.75	5	1.60				IRGB4059D				
		4	1.90	10	1.50		IRGR3B60KD2						
		5	2.39	10	1.50		IRG4RC10KD		IRG4BC10KD				
		6	1.70	5	1.60		IRGR4045D	IRGS4045D	IRGB4045D				
		6	2.27	10	1.40					IRG4IBC20KD			
		7	1.80	10	1.25	IRGSL6B60KD		IRGS6B60KD	IRGB6B60KD	IRGIB6B60KD			
		8	2.10	10	1.40	IRGSL4B60KD1		IRGS4B60KD1	IRGB4B60KD1				
		8	1.55	5	1.80				IRGB4060D				
		8	1.80	10	1.25					IRGIB7B60KD			
		9	2.27	10	1.40			IRG4BC20KD-S	IRG4BC20KD				
		9	2.21	10	1.40					IRG4IBC30KD			
		10	1.60	5	2.50			IRGS4064D	IRGB4064D				
		10	1.70	10	1.80					IRGIB10B60KD1			
		12	1.55	5	2.10			IRGS4056D	IRGB4056D				
		12	1.80	10	1.69					IRGIB15B60KD1			
		12	1.80	10	1.30	IRGSL10B60KD		IRGS10B60KD	IRGB10B60KD				
		15	1.80	10	1.20	IRGSL15B60KD		IRGS15B60KD	IRGB15B60KD				
		16	2.21	10	1.40			IRG4BC30KD-S	IRG4BC30KD		IRG4PC30KD		
		18	1.65	5	2.30				IRGB4061D				
		24	1.60	5	1.80	IRGSL4062D		IRGS4062D	IRGB4062D		IRGP4062D		
		25	2.10	10	1.30						IRG4PC40KD		
		30	1.84	10	1.30						IRG4PC50KD	IRG4PC50KD-E	
		30	1.95	10	1.30							IRGP30B60KD-E	
		48	1.65	5	1.95						IRGP4063D		
		48	1.65	5	0.96						IRGP4068D	IRGP4068D-E	
		48	1.65	5	2.00						IRGP4063D1	IRGP4063D1-E	
		50	1.60	5	2.20						IRGP4069D	IRGP4069D-E	
		60	1.83	10	1.40								IRG4PSC71KD
		90	1.70	5	2.23						IRGP4066D	IRGP4066D-E	
		160	1.70	5	2.40								IRGPS4067D
1200		5	3.17	10	2.50						IRG4PH20KD		
		6	2.75	10	2.13				IRGB5B120KD				
		10	3.10	10	3.40						IRG4PH30KD		
		15	2.74	10	2.60						IRG4PH40KD		
		16	2.05	10	2.00						IRG7PH30K10D		
		24	2.77	10	2.50						IRG4PH50KD		
		30	2.46	10	1.86						IRGP30B120KD	IRGP30B120KD-E	
		42	2.97	10	2.50								IRG4PSH71KD
		60	2.50	10	1.93								IRGPS60B120KD

Single Rugged IGBTs (with Tsc)

Voltage	Speed	I_c @ 100°C	$V_{CE(on)}$ (typ)	Tsc (µs)	TO-262	DPak	D²Pak	TO-220	TO-247	TO-247 (Long Lead)	Super TO-247
430	DC-1 kHz	14	1.55	10	IRGSL14C40L		IRGS14C40L	IRGB14C40L			
600	8-30 kHz	5	2.39	10		IRG4RC10K		IRG4BC10K			
		7	2.10	10			IRGS4B60K	IRGB4B60K			
		7	1.80	10			IRGS6B60K	IRGB6B60K			
		9	2.27	10			IRG4BC20K-S	IRG4BC20K			
		15	1.80	10			IRGS15B60K				
		16	2.21	10			IRG4BC30K-S	IRG4BC30K	IRG4PC30K		
		19	1.80	10			IRGS8B60K	IRGB8B60K			
		25	2.10	10				IRG4BC40K	IRG4PC40K		
		30	1.84	10					IRG4PC50K		
		48	1.65	5					IRGP4063		
		50	1.60	5					IRGP4069	IRGP4069-E	
		50	1.95	10	IRGSL30B60K		IRGS30B60K	IRGB30B60K			
		60	1.83	10							IRG4PSC71KPBF
		90	1.70	5					IRGP4066	IRGP4066-E	
650		48	1.65	5					IRGP4263		
		90	1.70	5					IRGP4266		
1200		5	3.17	10	IRG4BH20K-L		IRG4BH20K-S		IRG4PH20K		
		10	3.10	10					IRG4PH30K		
		15	2.74	10					IRG4PH40K		
		23	2.05	10					IRG7PH30K10		
		24	2.43	10					IRG4PH50K		
		42	2.97	10							IRG4PSH71K
		130	2.00	10							IRG7PSH73K10

PowIRstage® Selector Guide

	Package							
		4x6mm	5x6mm		6x6mm	6x6mm	6x8mm	
	Part Number	IR3553	IR3558	IR3551	IR3550	IR3575	IR3548	IRF3546 (Power Block)
	Type	Single PowIRstage®	Single PowIRstage®	Single PowIRstage®	Single PowIRstage®	Exposed Top Single PowIRstage®	Dual Channel/ Phase PowIRstage®	Dual Channel/ Phase Power Block
Specifications	Continuous Output Current (A)	40A	45A	50A	60A	60A	30A/Channel, 60A total	30A/Channel, 60A total
Specifications	Peak Efficiency (%)	Up to 93.2% @ $1.2V_{OUT}$	Up to 94.5% @ $1.2V_{OUT}$	Up to 94.5% @ $1.2V_{OUT}$	Up to 95% @ $1.2V_{OUT}$	Up to 95% @ $1.2V_{OUT}$	Up to 94% @ $1.2V_{OUT}$	Up to 95.5% @ $1.2V_{OUT}$
Specifications	Package Dimensions	4x6x0.9mm	5x6x0.9mm	5x6x0.9mm	6x6x0.9mm	6x6x0.65mm	6x8x0.9mm	6x8x0.9mm
Specifications	Operating Input Voltage Range (V_{IN})	4.5V to 15V (25V abs max)	4.5V to 15V (25V abs max)	4.5V to 15V (25V abs max)	4.5V to 15V (25V abs max)	4.5V to 15V (25V abs max)	4.25V to 17V (25V abs max)	4.5V to 21V (25V abs max)
Specifications	Output Voltage Range (V_{OUT})	0.25V to VCC-2.5V	Limited by controller	0.25V to VCC-2.5V	0.25V to VCC-2.5V	0.25V to VCC-2.5V		
Specifications	Switching Frequency (Fsw)	200kHz to 1MHz	200kHz to 1MHz	200kHz to 1MHz	200kHz to 1MHz	200kHz to 1MHz	up to 1.5MHz	up to IMHz
Specifications	Supply Voltage (V_{CC})	4.5V to 7V	4.5V to 5.5V	4.5V to 7V	4.5V to 7V	4.5V to 7V	4.25V to 5.5V	n/a
Specifications	Driver Voltage Range	4.5V to 7V	HVCC = 4.5V to 13.2V LVCC = 4.5V to 13.2V	4.5V to 7V	4.5V to 7V	4.5V to 7V	4.25V to 12V	+/-20Vgs max rated
Specifications	Operating Junction Temperature Range (°C)	0°C to 125°C	-40°C to 125°C	0°C to 125°C	0°C to 125°C	-40°C to 125°C	-40°C to 125°C	-40°C to 150°C
Specifications	Thermal Resistance (Rth_{J-PCB})	2.5°C/W	2.1°C/W	2.1°C/W	1.9°C/W	1.7°C/W	1.7°C/W	1.6°C/W
Specifications	Thermal Resistance (Rth_{J-CASE})	23.2°C/W	17.5°C/W	17.5°C/W	14.3°C/W	0.5°C/W	11°C/W	11.3°C/W
Features	Integrated Current Sense Amplifier	✓		✓	✓	✓		
Features	VCC Undervoltage Lockout	✓	✓	✓	✓	✓	✓	
Features	Fault Flag Output	MOSFET Fault & Thermal Fault	Programmable Thermal Flag (70°C to 150°C)	MOSFET Fault & Thermal Fault	MOSFET Fault & Thermal Fault	MOSFET Fault & Thermal Fault		
Features	ENABLE		✓				✓	
Features	Body Braking™ Load Transient Support	✓		✓	✓	✓		
Features	Diode-Emulation High Efficiency Mode	✓		✓	✓	✓		
Features	Tri-State PWM Logic	3.3V tri-state and V_{CC} tolerant	3.3V tri-state or ATL	3.3V tri-state and V_{CC} tolerant	3.3V tri-state and V_{CC} tolerant	3.3V tri-state and V_{CC} tolerant	3.3V tri-state or ATL	
Features	Universal PCB Footprint	w/ IR3551, IR3550, IR3575		w/ IR3553, IR3550, IR3575	w/ IR3551, IR3553, IR3575	w/ IR3550, IR3551, IR3553		

Logic Level

Part	Channels	Topology/Feature	Voffset (V)	Io+(mA) Source	Io- (mA) Sink	"Enable" Pin	ShutDown / Reset		UVLO Reference	VBSUV+/VCCUV+ (V)	VBSUV-/VCCUV- (V)	Min Dead Time (ns)	Ton (ns)	Toff (ns)	Single Input
				Typ	Typ			Typ		Typ	Typ	Typ	Typ	Typ	
IRS2301	2	High Side and Low Side	600	200	350	N			Vcc / Vbs	4.1	3.8		220	200	
IRS2302	2	Half Bridge driver, Single Input	600	200	350	Y	X	240	Vcc / Vbs	4.1	3.8	540	720	200	X
AUIRS2016	1	Single Driver ICs - High Side Only	150	250	500				Vcc / Vbs	4.3	2.8	70	150	150	

Single and Dual Low-Side

Part	Channels	Topology	Feature	Voffset (V)	Io+(mA) Source	Io- (mA) Sink	"Enable" Pin	Shutdown / Reset	Shutdown Time	Over Current Protection	UVLO Reference	VBSUV+/VCCUV+ (V)	VBSUV-/VCCUV- (V)	Min Dead Time (ns)	Ton (ns)	Toff (ns)	Fault Reporting	Inverted Input Logic
					Typ	Typ			Typ			Typ	Typ	Typ	Typ	Typ		
IR2121	1	Low side		5	1600	3300	Y	X	1700	X		8.9	8		150	200		
IR4426	2	Dual Low side		25	2300	3300									85	65		IN1 / IN2
IRS4426	2	Dual Low side		25	2300	3300									50	50		IN1 / IN2
IRS4427	2	Dual Low side		25	2300	3300									50	50		
IRS4428	2	Dual Low side		25	2300	3300									50	50		IN1
AUIRS2016S	1	Single High side		150	250	250					Vcc / Vbs	4.3	2.8	70	150	150		
AUIRS20161S	1	Single High side	Inverted Logic	150	250	250					Vcc / Vbs	4.3	2.8	70	150	150		IN
IR2125	1	Single High side	Current Linit	500	1600	3300	Y	X	1700	X	Vcc / Vbs	9.2	8.3		170	200	X	
IRS2123	1	Single High side		600	500	500	Y				Vcc / Vbs	8.6	8		140	140		
IRS2124	1	Single High side	Inverted Logic	600	500	500	N				Vcc / Vbs	8.6	8		140	140		HIN
IRS2117	1	Single High side		600	290	600	N				Vcc / Vbs	8.6	8.2		125	105		
IRS21171	1	Single High side	Low Logic Treshold	600	290	600	N				Vcc / Vbs	8.6	8.2		160	160		
IRS2118	1	Single High side		600	290	600	N				Vcc / Vbs	8.6	8.2		125	105		IN
IRS2127	1	Single High side	Over Current Detection, High UVLO	600	290	600	N			X	Vbs	10.3	9		150	150	X	
IRS21271	1	Single High side	Desat Over Current Detection, Low UVLO	600	290	600	N			X	Vbs	7.2	6.8		150	150	X	
IRS2128	1	Single High side	Desat Over Current detection, High UVLO	600	290	600	N			X	Vbs	10.3	9		150	150	X	IN
IRS21281	1	Single High side	Desat Over Current detection, Low UVLO	600	290	600	N			X	Vbs	7.2	6.8		150	150	X	IN

Half-Bridge With Dead Time

Part	Channels	Topology	Feature	Voffset (V)	Io+(mA) Source	Io- (mA) Sink	"Enable" Pin	Shutdown / Reset	Separate Power an Logic Ground	Integrated Bootstrap Diode	VBSUV+/VCCUV+ (V)	VBSUV-/VCCUV- (V)	Min Dead Time (ns)	Ton (ns)	Toff (ns)	Inverted Input Logic
					Typ	Typ					Typ	Typ	Typ	Typ	Typ	
IRS2003	2	Half bridge		200	290	600	N				8.9	8.2	520	680	150	LIN
IRS2004	2	Half bridge, Single Input		200	290	600	Y	X			8.9	8.2	520	680	150	
IR2151	2	Half bridge	Self Oscillating	600	125	250					8.4	8.1	1200			
IRS2153	2	Half bridge	Self Oscillating	600	180	260					11	9	1100			
IRS2153D	2	Half bridge	Self Oscillating	600	180	260				X	11	9	600			
IRS21531	2	Half bridge	Self Oscillating	600	180	260					11	9	600			
IRS21531D	2	Half bridge	Self Oscillating	600	180	260				X	11	9	1100			
IRS2608D	2	Half bridge		600	200	350	N			X	8.9	8.2	530	250	250	LIN
IR2155	2	Half bridge	Self Oscillating	600	250	500					8.4	8.1	1200			
IRS2103	2	Half bridge		600	290	600	N				8.9	8.2	520	680	150	LIN
IRS2108	2	Half bridge		600	290	600	N				8.9	8.2	540	220	200	LIN
IRS21084	2	Half bridge	Programmable Dead Time	600	290	600	N		X		8.9	8.2		220	200	LIN
IRS2304	2	Half bridge	ST Pin-out	600	290	600	N				8.9	8.2	100	150	150	
IRS2308	2	Half bridge		600	290	600	N				8.9	8.2	540	220	200	
IRS2183	2	Half bridge		600	1900	2300	N				8.9	8.2	400	180	220	LIN
IRS21834	2	Half bridge	Programmable Dead Time	600	1900	2300	N		X		8.9	8.2		180	220	LIN
IR2114	2	Half bridge	Desat Sensing Protection	600	2000	3000			X		10.2	9.3	330	440	440	
IR21141	2	Half bridge	Desat Sensing Protection, active Bias	600	2000	3000			X		10.2	9.3	330	440	440	
IRS2302	2	Half bridge, Single Input		600	200	350	Y	X			4.1	3.8	540	720	200	
IRS2509	2	Half bridge, Single Input		600	200	350	Y	X			8.9	8.2	530	750	250	
IRS2609D	2	Half bridge, Single Input		600	200	350	Y	X		X	8.9	8.2	530	750	250	
IRS25091	2	Half bridge, Single Input	Programmable Dead time with resistor	600	200	350	Y	X			8.9	8.2	530-5000	750	250	
IRS2104	2	Half bridge, Single Input		600	290	600	Y	X			8.9	8.2	520	680	150	
IRS2109	2	Half bridge, Single Input		600	290	600	Y	X			8.9	8.2	540	750	200	
IRS21094	2	Half bridge, Single Input	Programmable Dead Time	600	290	600	Y	X	X		8.9	8.2		750	200	
IRS2111	2	Half bridge, Single Input		600	290	600	N				8.6	8.2	650	750	150	
IRS21091	2	Half bridge, Single Input	Programmable Dead Time	600	290	600	Y	X			8.9	8.2		750	200	
IRS2184	2	Half bridge, Single Input		600	1900	2300	Y	X			8.9	8.2	400	680	270	
IRS21844	2	Half bridge, Single Input	Programmable Dead Time	600	1900	2300	Y	X	X		8.9	8.2		680	270	
IR2214	2	Half bridge	Desat Sensing Protection	1200	2000	3000			X		10.2	9.3	330	440	440	

Half-Bridge Independent Channels

Part	Channels	Topology	Feature	Voffset (V)	Io+(mA) Source	Io- (mA) Sink	"Enable" Pin	Shutdown / Reset	Separate Power an Logic Ground	Integrated Bootstrap Diode	VBSUV+/VCCUV+ (V)	VBSUV-/VCCUV- (V)	Ton (ns)	Toff (ns)	Inverted Input Logic
					Typ	Typ					Typ	Typ	Typ	Typ	
IRS2001	2	High side and Low side		200	290	600	N				8.9	8.2	160	150	
IRS2011	2	High side and Low side		200	1000	1000	N				9	8.2	60	60	
IR2010	2	High side and Low side	Seperate Power & logic Ground	200	3000	3000	Y	X	X		8.6	8.2	95	65	
IRS2110	2	High side and Low side	Seperate Power & logic Ground	500	2500	2500	Y	X	X		8.5	8.2	130	120	
IRS2607D	2	High side and Low side		600	200	350	N			X	8.9	7.7	515	500	
IRS26072D	2	High side and Low side	Fast Turn-Off	600	200	350	N			X	8.9	7.7	200	200	
IR2102	2	High side and Low side		600	210	360	N				8.9	8.2	160	150	LIN / HIN
IRS21856	2	High side and Low side	HS Slope Control Dual Mode	600	500	500	N				9	8.3	150	160	LIN / HIN
IRS21956	2	High side and Low side	PDP, Dual Mode Low side	600	500	500					8.7	8	300	280	LIN / HIN
IRS2101	2	High side and Low side		600	290	600	N				8.9	8.2	160	150	
IRS2106	2	High side and Low side		600	290	600	N				8.9	8.2	220	200	
IRS21064	2	High side and Low side	Seperate Power & logic Ground	600	290	600	N		X		8.9	8.2	220	200	
IRS210614	2	High side and Low side	Seperate Power & logic Ground	600	290	600	N		X		8.9	8.2	165	165	
IRS2112	2	High side and Low side	Seperate Power & logic Ground	600	290	600	Y	X	X		8.6	8.2	135	130	
IRS21858	2	High side and Low side	1 Dual Mode, Slope Control, Dual Mode	600	290	600	N				8.9	8.2	160	160	
IRS2181	2	High side and Low side		600	1900	2300	N				8.9	8.2	180	220	
IRS21814	2	High side and Low side	Seperate Power & logic Ground	600	1900	2300	N		X		8.9	8.2	180	220	
IRS2113	2	High side and Low side	Seperate Power & logic Ground	600	2500	2500	Y	X	X		8.5	8.2	130	120	
IRS2186	2	High side and Low side		600	4000	4000	N				8.9	8.2	170	170	
IRS21864	2	High side and Low side	Seperate Power & logic Ground	600	4000	4000	N		X		8.9	8.2	170	170	
IRS21867	2	High side and Low side		600	4000	4000	N				6	5.5	170	170	
IR2213	2	High side and Low side	Seperate Power & logic Ground	1200	2000	2500	Y	X	X		10.2	9.3	280	225	

3-Phase Drives

Part	Channels	Topology	Feature	Voffset (V)	Io+(mA) Source	Io- (mA) Sink	"Enable" Pin	Shutdown / Reset	Integrated Bootstrap Diode	Over Current Protection	VBSUV+/VCCUV+ (V)	VBSUV-/VCCUV- (V)	Min Dead Time (ns)	Ton (ns)	Toff (ns)	Inverted Input Logic
					Typ	Typ					Typ	Typ	Typ	Min	Typ	
AUIRS20302S	6	Three Phase	Pre-regulated Three Phase Gate driver	200	350	200		X		X	7.2	6.7	700	500	700	
IR2136	6	Three Phase	Vtrip 0.46V, Low UVLO	600	200	350				X	8.9	8.2	290	300	400	LIN / HIN
IR21362	6	Three Phase	Vtrip 0.46V	600	200	350				X	10.4	9.4	290	300	400	LIN
IR21363	6	Three Phase	Vtrip 0.46V	600	200	350				X	11.1	10.9	290	300	400	LIN / HIN
IR21364	6	Three Phase	Vtrip 0.46V	600	200	350				X	10.4	9.4	290	350	530	
IR21365	6	Three Phase	Vtrip 4.3V	600	200	350				X	11.1	10.9	290	300	400	LIN / HIN
IR21367	6	Three Phase	Vtrip 4.3V	600	200	350				X	11.1	10.9	290	300	400	LIN / HIN
IR21368	6	Three Phase	Vtrip 4.3V, Low UVLO	600	200	350				X	8.9	8.2	290	300	400	LIN / HIN
IRS23365D	6	Three Phase	GND Shunt Overcurrent Protection, Redundant Reset	600	200	350	Y		X	X	11.1	10.9	275	400	530	
IRS2334	6	Three Phase		600	200	350	N				11.1	10.9	290	400	530	
IRS2336	6	Three Phase	GND Shunt Overcurrent Protection, Redundant Reset	600	200	350	Y			X	8.9	8.2	275	400	530	LIN / HIN
IRS2336D	6	Three Phase	GND Shunt Overcurrent Protection, Redundant Reset	600	200	350	Y		X	X	8.9	8.2	275	400	530	LIN / HIN
IRS26302D	7	Three Phase	Extra Driver Channel for PFC or Brake	600	200	350	Y		X	X	11.1	10.9	290	320	X	
IRS26310D	6	Three Phase	DC bus sensing with Over Voltage protection	600	200	350	Y		X	X	11.1	10.9	290	400	530	
IR2130	6	Three Phase		600	250	500				X	9	8.7	2500	500	425	LIN / HIN
IR2131	6	3 High side and 3 Low side		600	250	500		X		X	8.7	8.3	700	600	600	LIN / HIN
IR2132	6	Three Phase		600	250	500				X	9	8.7	800	500	425	LIN / HIN
IR2133	6	Three Phase		600	250	500		X		X	8.6	8.2	250	500	700	LIN / HIN
IR2135	6	Three Phase		600	250	500		X		X	10.4	9.4	250	500	700	LIN / HIN
IRS2330	6	Three Phase	High Dead Time	600	250	500	N			X	9	8.7	2000	400	500	LIN / HIN
IRS2330D	6	Three Phase	High Dead Time	600	250	500	N		X	X	9	8.7	2000	400	500	LIN / HIN
IRS2332	6	Three Phase		600	250	500	N			X	9	8.7	700	400	500	LIN / HIN
IRS2332D	6	Three Phase		600	250	500	N		X	X	9	8.7	700	400	500	LIN / HIN
IR2233	6	Three Phase		1200	250	500		X		X	8.6	8.2	250	500	700	LIN / HIN
IR2235	6	Three Phase		1200	250	500		X		X	10.4	9.4	250	500	700	LIN / HIN
IR2238	7	Three Phase	Extra Driver Channel for Brake	1200	350	540		X		X	11.2	10.2	Aj	250	550	HIN

Current Sense ICs

Part	Channels	Topology	Feature	Voffset (V)	Io+(mA) Source	Io- (mA) Sink	Over Current Protection	UVLO Reference	VBSUV+/VCCUV+ (V)	VBSUV-/VCCUV- (V)	Min Dead Time (ns)	Ton (ns)	Toff (ns)	Fault Reporting	Inverted Input Logic	Current Sense
					Typ	Typ			Typ	Typ	Typ	Typ	Typ			
IR2125	1	Single High side, Current Limit		500	1600	3300	X	Vcc / Vbs	9.2	8.3		170	200	X		
IRS2127	1	Single High side, Desat Over Current detection		600	290	600	X	Vbs	10.3	9		150	150	X		
IRS21271	1	Single High side, Desat Over Current detection	Low UVLO	600	290	600	X	Vbs	7.2	6.8		150	150	X		
IRS2128	1	Single High side, Over Current detection		600	290	600	X	Vbs	10.3	9		150	150	X	IN	
IR2175	1	Phase Current Sense IC	Phase Current Sense IC	600	n/a	n/a	X									X
IR2177	1	Phase Current Sense IC	Phase Current Sense IC, + Analog DSP Out	600	n/a	n/a	X									X
IR2277	1	Phase Current Sense IC	Phase Current Sense IC, + Analog DSP Out	1200	n/a	n/a	X									X
IR21141	2	Half bridge	Desat Sense, active Bias	600	2000	3000		Vcc / Vbs	10.2	9.3	330	440	440	X		
IRS21281	1	Single High side, Desat Over Current detection	Low UVLO	600	290	600	X	Vbs	7.2	6.8		150	150	X	IN	
IR21771	1	Phase Current Sense IC	Phase Current Sense IC	600	n/a	n/a	X									X
IR22771	1	Phase Current Sense IC	Phase Current Sense IC	1200	n/a	n/a	X									X

Active ORing Control ICs

Part Number	V_{IN}	V_{CC}	FET Turn-Delay	FET Turn-Off Time	UVLO $V_{CC(on)}$	FET Check Status	Turn-Off Gate Drive	Package
IR5001S	5V - 100V	15V max.	130nS typ.	20nS typ.	8.3V to 10.9V	Yes	3A	SO-8

PFC Control ICs

Part Number	Description
IR1152	Fixed 66KHz switching frequency with brownout protection and dual OVP protection
IR1153	Fixed 22KHz switching frequency with brownout protection and programmable OVP protection
IR1155	Programmable switching frequency and programmable OVP protection
IRS2500	Fully integrated, fully protected PFC SMPS control IC designed to drive boost or flyback switching regulators

Resonant Half-Bridge Control ICs

Part Number	Package	V_{OFFSET} (V)	I_{O+} & I_{O-} (mA)	Programmable Frequency (kHz)	Programmable Dead-time (ns)	OCP Threshold (V)
IRS27951S	SO-8	600	300/900	25-500	200-1800	2
IRS27952S	SO-8	600	300/900	25-500	200-1800	3
IRS279524S	SO-14	600	300/900	25-500	200-1800	3

Synchronous Rectification Control ICs

Part Number	Package	V_{cc} max (V)	V_{FET} max (V)	Sw Freq. max (kHz)	Gate Drive (A)	V_{GATE} clamp (V)	Min. On Time (ns)	Enable Pin	Channel	Automatic MOT Protection
IR1166S	SO-8	20	200	500	+1/ -4	10.7	Program 250-3000	Yes	1	No
IR11662S					+1/ -4	10.7		Yes		Yes
IR1167AS					+2 / -7	10.7		Yes		No
IR11672AS					+2 / -7	10.7		Yes		Yes
IR1168S					+1/ -4	10.7	750	No	2	No
IR11682S				400	+1/ -4	10.7	850	No		Yes
IR1169S				500	+1/ -4	10.7	Program 250-3000	Yes	1	No

Audio ICs

Part Number	Description
IRS2011(S)PBF	A high voltage, high speed power MOSFET driver with independent high- and low-side referenced output channels.
IRS20124SPBF	A high voltage, high speed power MOSFET driver with internal dead-time, over-current protection and shutdown functions.
IRS2092(S)PBF	High Voltage, high performance Class D audio amplifier driver with PWM modulator and protection.
IRS2052MPBF	A high voltage, high performance integrated two channel Class D audio amplifier driver with PWM modulators and protections.
IRS2053MPBF	A high voltage, high performance integrated three channel Class D audio amplifier driver with PWM modulators and protections.
IRS2093MPBF	A high voltage, high performance integrated four channel Class D audio amplifier driver with PWM modulators and protections.

PowIRaudio™ Integrated Class D Amps

Part Number	Description
IR4301	Single-channel PowIRaudio™ amplifier for output power up to 160W
IR4311	Single-channel PowIRaudio™ amplifier for output power up to 60W
IR4321	Single-channel PowIRaudio™ amplifier for output power up to 135W
IR4302	Dual-channel PowIRaudio™ amplifier for output power up to 130W per channel
IR4312	Dual-channel PowIRaudio™ amplifier for output power up to 60W per channel
IR4322	Dual-channel PowIRaudio™ amplifier for output power up to 125W per channel

iMOTION™ Digital Control ICs	
Part Number	**Description**
IRMC(K/F)312	Full featured Digital control IC with capability to control two motors and PFC in QFP100 package. Well suited for air conditioner applications.
IRMC(K/F)311	Digital control IC with capability to control two motors and PFC in QFP64 package. Well suited for air conditioner applications.
IRMC(K/F)341	Full featured Digital control IC for single motor drive in QFP64 package
IRMC(K/F)343	Digital control IC with capability to control one motor and PFC in QFP64 package.
IRMC(K/F)371	Minimum feature set Digital control IC for single motor drive in QFP48 package. Well suited for fan applications.
IRMC(K/F)171	Minimum feature set Digital control IC for single motor drive in QFP48 package. Well suited for refrigerator applications.
IRMC(K/F)143	Digital control IC with capability to control one motor and PFC in QFP64 package.
IRMCK201	Digital control IC to control one encoder based motor.

International Rectifier's multiphase buck PWM controllers and MOSFET drivers are the key components in high frequency voltage regulator (VR) designs for powering today's high performance microprocessors (CPUs), memory point-of-loads (POL) and graphics processors (GPUs).

Target applications include:

- Desktop CPU
- Overclocking DT
- Server CPU
- Server DDR
- Performance GPU
- Mainstream GPU
- GPU GDDR
- Notebook

For more information contact your local sales rep.

µIPM™ Intelligent Power Modules									
Part Number	Size (mm)	Voltage	$R_{DS(on)}$ typ	$R_{DS(on)}$ max	Current (D_C at 25°C)	Motor Current*		Motor Power Vo=150/75Vrms	Topology
						w/o HS	w HS		
IRSM836-024MA	12 x 12	250V	2.0Ω	2.4Ω	2A	470mA	550mA	60W/72W	Open Source
IRSM836-044MA	12 x 12	250V	0.90Ω	1.04Ω	4A	750mA	850mA	95W/110W	Open Source
IRSM836-025MA	12 x 12	500V	3.5Ω	4.0Ω	2A	360mA	440mA	93W/114W	Open Source
IRSM836-035MB	12 x 12	500V	1.85Ω	2.2Ω	3A	420mA	510mA	108W/135W	Common Source
IRSM836-035MA	12 x 12	500V	1.85Ω	2.2Ω	3A	420mA	510mA	108W/135W	Open Source
IRSM836-045MA	12 x 12	500V	1.45Ω	1.7Ω	4A	550mA	(750mA)	145W/195W	Open Source
IRSM808-105MH	9 x 8	500V	0.58Ω	0.8Ω	10A	1.1A	(1.5A)	285W/390W	Half Bridge
IRSM807-105MH	9 x 8	500V	0.58Ω	0.8Ω	10A	1.1A	(1.5A)	285W/390W	Half Bridge

*rms, Fc=16kHz ,2-phase PWM, ΔTca=70C, Ta=25

IRAM Intelligent Power Modules				
Part	Voltage & Shunt	Typical Load (W)	I_0 @ T_C = 100°C (A RMS)	Package
IRAMS06UP60A	600V Open Emitter	400W	3	SIP-1
IRAMS06UP60B	600V Integr. Shunt			
IRAM136-1061A2	600V Open Emitter	750W	5	SIP-1A
IRAMS10UP60A	600V Open Emitter	750W	5	SIP-1
IRAMS10UP60B	600V Integr. Shunt			
IRAMS12UP60A	600V Open Emitter	1000W	6	
IRAMX16UP60A	600V Open Emitter	1500W	8	SIP-2
IRAMX16UP60B	600V Integr. Shunt			
IRAMX20UP60A	600V Open Emitter	2500W	10	
IRAMY20UP60B	600V Integr. Shunt			SIP-3
IRAM136-3063B	600V Integr. Shunt	3000W	15	
IRAM136-3023B	150V Integr. Shunt	750W	15	

INTEGRATED VOLTAGE REGULATOR

	Integrated Voltage Regulator Product Offering			
	PWM			Constant On-Time
	1 - 16V	1 - 21V	1.5 - 21V	3 - 27V
	5V bias required	Integrated LDO	5V bias required	
1-4A	IR3843W	IR3897*	IR3853	
4-6A	IR3842W	IR3839*	IR3863	IR3473
	IR3832W*	IR3898*	IR3856	
6-10A	IR3831W*	IR3838*	IR3859	IR3475
	IR3841W	IR3899*	IR3865	
10-16A		IR3837*		IR3476
	IR3840W	IR3894		IR3477
		IR3895		
16-25A		IR3847		

*DDR Tracking

Sup/*R*Buck™ Online Design Tool featuring parametric search, schematic capture, AC, Steady State, Transient Analysis, Thermal Analysis, BOM creation, and more…

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Part	Package Size	Max Lout [A]	Max Vin [V]	Vbias [V]	Vref [V]	Control Method	Sequencing	Program Soft Start	Sync.	Margining	DDR Tracking	Over Voltage Protection (latch)	Differential Remote Sense
IR3840W	5x6 mm	12	16	5	0.7	PWM	X	X					
IR3841W	5x6 mm	8	16	5	0.7	PWM	X	X					
IR3842W	5x6 mm	4	16	5	0.7	PWM	X	X					
IR3843W	5x6 mm	2	16	5	0.7	PWM	X	X					
IR3831W	5x6 mm	8	16	5	0.7	PWM		X			X		
IR3832W	5x6 mm	4	16	5	0.7	PWM		X			X		
IR3837	5x6 mm	14	16	4.5-16	0.6	PWM	X		X	X	X		
IR3838	5x6 mm	10	16	4.5-16	0.6	PWM	X		X	X	X		
IR3839	5x6 mm	6	16	4.5-16	0.6	PWM	X		X	X	X		
IR3859	4x5 mm	9	21	5	0.7	PWM	X	X	X			X	
IR3856	4x5 mm	6	21	5	0.7	PWM	X	X	X			X	
IR3853	4x5 mm	4	21	5	0.7	PWM	X	X	X			X	
IR3847	5x6 mm	25	21	5-21	0.6	PWM	X		X	X	X	X	X
IR3895	5x6 mm	16	21	5-21	0.5	PWM	X		X	X	X	X	
IR3894	5x6 mm	12	21	5-21	0.5	PWM	X		X	X	X	X	
IR3477	5x6 mm	15	27	5	0.5	COT*		X				X	
IR3476	5x6 mm	12	27	5	0.5	COT*		X				X	
IR3475	4x5 mm	10	27	5	0.5	COT*		X				X	
IR3473	4x5 mm	6	27	5	0.5	COT*		X				X	
IR3865	4x5 mm	10	21	5	0.5	COT*		X				X	
IR3863	4x5 mm	6	21	5	0.5	COT*		X				X	

*Constant On Time control offers improved light load efficiency

DirectFET®2 POWER MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ Max. @ 10V_{GS} (mOhm)	$R_{DS(ON)}$ Max. @ 4.5V_{GS} (mOhm)	I_D Max @ TC = 25°C (A)	Q_G Typ. @ 10V_{GS} (nC)	Q_G Typ. @ 4.5V_{GS} (nC)	Pad Outline	Optimized Feature	Small Can	Medium Can	Large Can
40	0.7		300	362		L8	Low $R_{DS(on)}$			AUIRF8739L2
	1.0		270	220		L8				AUIRF7739L2
	1.6		135	138		M4			AUIRF8736M2	
	1.6		210	147		L6				AUIRF7738L2
	1.9		156	89		L6				AUIRF7737L2
	3.0		108	72		M4			AUIRF7736M2	
	4.1	2.9	143		59	M4			AUIRL7736M2	
	9.9	6.4	65		24	SC		AUIRL7732S2		
60	7.0		68	35		M4	Low Qg		AUIRF7648M2	
	36.0		21	7		SB		AUIRF7640S2		
75	1.8		160	200		L8	Low $R_{DS(on)}$			AUIRF7759L2
100	4.4		114	81		L8	Low Qg			AUIRF7669L2
	10.0	10.5	51		44	M4	Low $R_{DS(on)}$		AUIRL7766M2	
	31.0		24	14		SC	Low Qg	AUIRF7647S2		
	62.0		14	8		SB	Low Qg	AUIRF7665S2		
150	56.0		18	21		M2	Low Qg		AUIRF7675M2	
250	32.0		35	110		L8	Low $R_{DS(on)}$			AUIRF7799L2

Intelligent Power Switches

Topology	$R_{DS(ON)}$ mOhm	V clamp V	OverCurrent Protection		TO220	D²Pak	DPak	SOIC	SOT-223
Single Low Side	13	39	85	Shutdown	AUIPS1011	AUIPS1011S	AUIPS1011R		
	25	36	35	Shutdown	AUIPS1021	AUIPS1021S	AUIPS1021R		
	50	36	18	Shutdown	AUIPS1031	AUIPS1031S	AUIPS1031R		
	100	39	6	Shutdown			AUIPS1041R		AUIPS1041L
	200	39	3	Shutdown					AUIPS1051L
	60	68	14	Shutdown			AUIPS2031R		
	130	68	5	Shutdown			AUIPS2041R		AUIPS2041L
	300	70	1.8	Shutdown					AUIPS2051L
Dual Low Side	2*100	39	6	Shutdown				AUIPS1042G	
	2*200	39	3	Shutdown				AUIPS1052G	
	2*300	70	1.8	Shutdown				AUIPS2052G	
Single High Side	14	39	55	Limit	AUIPS6011	AUIPS6011S	AUIPS6011R		
	30	39	32	Limit	AUIPS6021	AUIPS6021S	AUIPS6021R		
	55	39	16	Limit	AUIPS6031	AUIPS6031S	AUIPS6031R		
	130	39	6.5	Limit	AUIPS6041	AUIPS6041S	AUIPS6041R	AUIPS6041G	
	70	70	7	Limit	AUIPS7081	AUIPS7081S	AUIPS7081R		
	120	70	5	Limit	AUIPS7091	AUIPS7091S		AUIPS7091G	
Dual High Side	2*100	65	25	Shutdown				AUIPS7142G	
Quad High Side	4*130	39	6.5	Limit				AUIPS6044G	
I sense High Side	7	40	10 to 90	Shutdown	AUIR3313	AUIR3313S			
	12	40	6 to 60	Shutdown	AUIR3314	AUIR3314S			
	20	40	3 to 30	Shutdown	AUIR3315	AUIR3315S			
	7	40	10 to 90	Shutdown	AUIR3316	AUIR3316S			
	7	40	120	Shutdown	AUIR3317	AUIR3317S			
	4	40		Shutdown		AUIR3320S			
	30	65	60	Shutdown			AUIPS7121R		
	30	65	60	Shutdown			AUIPS7125R		
	100	65	25	Shutdown			AUIPS7145R		
	100	65	7	Shutdown				AUIPS71451G	
	7.5	65	45	Shutdown		AUIPS7111S			
PWM High Side	3.5	40	10 to 40	Shutdown		AUIR33401S			
	3.5	40	10 to 40	Shutdown		AUIR3330S			
100Khz High Side	40	70	30	Shutdown			AUIPS7221R		
	40	70	30	Shutdown			AUIPS72211R		

Coming in 2013

High-Voltage Gate-Drive ICs

Part	Application	Voltage	Package	Output Source / Sink Current	Vcc Range	Vbs Range	Typ. Prop Delay	Features
AUIRS2334S	3-phase Inverter Drivers	600V	SOIC20	+290 / -600mA	10-20V w/ UVLO	10-20V w/ UVLO	530/530ns On/Off	Under voltage lockout, 3.3V logic input, independent half-bridge drivers, shoot through protection, tolerant to negative transient voltage, matched propogation delays, fixed deadtime, separate low and high side inputs in-phase with output.
AUIRS2336S	3-phase Inverter Drivers	600V	SOIC28	+200 / -350mA	10-20V w/ UVLO	10-20V w/ UVLO	530/530ns On/Off	Under voltage lockout, over current and temperature shutdown, 3.3V logic input, cross conduction prevention logic, tolerant to negative transient voltage, adjustable fault clear timing, separate logic and power grounds, advanced input filter.
AUIRS20302S	3-phase Inverter Drivers with PFC/Brake Driver	200V	SOIC28	+200 / -350mA	6-20V w/ UVLO	6-20V w/ UVLO	700/700ns On/Off	Full three phase gate driver, Under-voltage lockout for all channels, Cross-conduction prevention logic, Charge pump for pre-regulator N-ch Mosfet, Power-on reset, FAULT mode operation, Current sense comparator, 3.3V logic compatible, Matched propagation delay for all channels, Fully operational up to +200V, Floating channels for bootstrap operation,Tolerant to negative transients (-dV/dt immune), Lower di/dt gate drive for better noise immunity.
AUIRS2332J	3-phase Inverter Drivers	600V	PLCC44	+200 / -420mA	10-20V w/ UVLO	0-20V w/ UVLO	500/500ns On/Off	Under voltage lockout, 3.3V logic input, independent half-bridge drivers, tolerant to negative transient voltage, matched propogation delays, over current shutdown turn off all 6 switches, output out of phase with input, integrated op-amp.
AUIRS2004S	Dual Channel High- and Low- Side Drivers	200V	SOIC8	+130 / -270mA	10-20V w/ UVLO	10-20V w/ UVLO	680/150ns On/Off	Under voltage lockout, 3.3V, 5V, and 15V input logic compatible, matched propagation delay, cross conduction prevention.
AUIRS2110S	Dual Channel High- and Low- Side Drivers	500V	SOIC16	+2.5A / -2.5A	10-20V w/ UVLO	10-20V w/ UVLO	140/120ns On/Off	Under voltage lockout, 3.3V input logic compatible, separate logic supply from 3.3V to 20V, CMOS Schmitt-triggered inputs with pull-down, matched propagation delay, separate logic and power ground, 10ns delay matching.
AUIRS2112S	Dual Channel High- and Low- Side Drivers	600V	SOIC16	+290 / -600mA	10-20V w/ UVLO	10-20V w/ UVLO	140/140ns On/Off	Under voltage lockout, 3.3V input logic compatible, separate logic supply from 3.3V to 20V, CMOS Schmitt-triggered inputs with pull-down, matched propagation delay, separate logic and power ground, 30ns delay matching.
AUIRS2113S	Dual Channel High- and Low- Side Drivers	600V	SOIC16	+2.5A / -2.5A	10-20V w/ UVLO	10-20V w/ UVLO	140/120ns On/Off	Under voltage lockout, 3.3V input logic compatible, separate logic supply from 3.3V to 20V, CMOS Schmitt-triggered inputs with pull-down, matched propagation delay, separate logic and power ground, 20ns delay matching.
AUIRS2181S	Dual Channel High- and Low- Side Drivers	600V	SOIC8	+1.9A / -2.3A	10-20V w/ UVLO	10-20V w/ UVLO	160/200ns On/Off	Under voltage lockout, 3.3V, 5V input logic compatible, matched propagation delay.
AUIRS21811S	Dual Channel High- and Low- Side Drivers	600V	SOIC8	+1.9A / -2.3A	10-20V w/ UVLO	10-20V w/ UVLO	160/200ns On/Off	Under voltage lockout, 3.3V, 5V input logic compatible, CMOS Schmitt-triggered inputs, matched propagation delay, lower di/dt gate driver for better noise immunity.
AUIRS21814S	Dual Channel High- and Low- Side Drivers	600V	SOIC14	+1.9A / -2.3A	10-20V w/ UVLO	10-20V w/ UVLO	160/200ns On/Off	Under voltage lockout, 3.3V, 5V input logic compatible, matched propagation delay, separate logic and power ground.
AUIRS2191S*	Dual Channel High- and Low- Side Drivers	600V	SOIC16	+3.5A / -3.5A	10-20V w/ UVLO	10-20V w/ UVLO	90/90ns On/Off	Under voltage lockout for both channels, 3.3V, 5V and 15V input logic compatible, matched propagation delay, CMOS Schmitt-triggered inuts with pull-down.
AUIRS2301S	Dual Channel High- and Low- Side Drivers	600V	SOIC8	+120 / -250mA	5-20V w/ UVLO	5-20V w/ UVLO	220/200ns On/Off	Under voltage lockout for both channels, 3.3V, 5V and 15V input logic compatible, matched propagation delay.
AUIRS4426S	Dual Channel Low-Side Drivers	Low side	SOIC8	+2.3A / -3.3A	6-20V w/ UVLO	6-20V w/ UVLO	70/65ns On/Off	3.3V, 5V input logic compatible, matched propagation delay.
AUIRS4427S	Dual Channel Low-Side Drivers	Low side	SOIC8	+2.3A / -3.3A	6-20V w/ UVLO	6-20V w/ UVLO	50/50ns On/Off	3.3V, 5V input logic compatible, matched propagation delay.
AUIRS4428S	Dual Channel Low-Side Drivers	Low side	SOIC8	+2.3A / -3.3A	6-20V w/ UVLO	6-20V w/ UVLO	70/65ns On/Off	3.3V, 5V input logic compatible, matched propagation delay.
AUIRS2092S	Single Channel Class-D Audio Amplifier	200V	SOIC16	+1.0 / -1.2A	10-18V w/ UVLO	10-18V w/ UVLO	360/335ns On/Off	Analog input, Programmable bidirectional over-current protection with self-reset, Under voltage protection, Programmable preset deadtime, reduced THD+N.

High-Voltage Gate-Drive ICs

Part	Application	Voltage	Package	Output Source / Sink Current	Vcc Range	Vbs Range	Typ. Prop Delay	Features
AUXS20956S	Single Channel Class-D Audio Amplifier	200V	SOIC16	+1.0 / -1.2A	10-18V w/ UVLO	10-18V w/ UVLO	80/65ns On/Off	Floating PWM input (non-inverting and 3.3V and 5V logic compatible), Programmable bi-directional over-current protection with self-reset, Under voltage protection, Programmable preset deadtime, improved sound quality with optimized THD+N, 200V rating delivers up to 500W output power.
AUIRS20161S	Single Channel High-Side Drivers	150V	SOIC8	+250 / -250mA	4.4-20V w/ UVLO	4.4-20V w/ UVLO	150/150ns On/Off	One high side output and internal low side Vs recharge, CMOS Schmitt trigger inverted input with pull up resistor, CMOS Schmitt trigger inverted reset with pull down resistor, 5V compatible input logic, Under voltage lockout, immune to negative Vs spike and tansient.
AUIRS2117S	Single Channel High-Side Drivers	600V	SOIC8	+290 / -600mA	10-20V w/ UVLO	10-20V w/ UVLO	140/140ns On/Off	Under voltage lockout, Schmitt-triggered inputs with pull-down, output in phase with input.
AUIRS2118S	Single Channel High-Side Drivers	600V	SOIC8	+290 / -600mA	10-20V w/ UVLO	10-20V w/ UVLO	140/140ns On/Off	Under voltage lockout, inverting Schmitt-triggered inputs with pull-down, output in phase with input.
AUIRS2123S	Single Channel High-Side Drivers	600V	SOIC8	+500 / -500mA	10-20V w/ UVLO	10-20V w/ UVLO	140/140ns On/Off	CMOS Schmitt-triggered inputs with pull-down, output in phase with input.
AUIRS2124S	Single Channel High-Side Drivers	600V	SOIC8	+500 / -500mA	10-20V w/ UVLO	10-20V w/ UVLO	140/140ns On/Off	CMOS Schmitt-triggered inputs with pull-down, output out phase with input.
AUIRS2127S	Single Channel High-Side Drivers	600V	SOIC8	+290 / -600mA	12-20V w/ UVLO	9-20V w/ UVLO	150/150ns On/Off	Under voltage lockout, 3.3V, 5V and 15V input logic compatible, Fault output, output in phase with input.
AUIRS21271S	Single Channel High-Side Drivers	600V	SOIC8	+290 / -600mA	9-20V w/ UVLO	9-20V w/ UVLO	150/150ns On/Off	Under voltage lockout, 3.3V, 5V and 15V input logic compatible, Fault output, output in phase with input.
AUIRS2128S	Single Channel High-Side Drivers	600V	SOIC8	+290 / -600mA	10-20V w/ UVLO	12-20V w/ UVLO	150/150ns On/Off	Under voltage lockout, 3.3V, 5V and 15V input logic compatible, Fault output, output out of phase with input.
AUIRS21281	Single Channel High-Side Drivers	600V	SOIC8	+290 / -600mA	9-20V w/ UVLO	9-20V w/ UVLO	150/150ns On/Off	Under voltage lockout, 3.3V, 5V and 15V input logic compatible, Fault output, output out of phase with input.
AUIR2085S	Single Phase Half-Bridge Drivers	100V	SOIC8	+1.0 / -1.0A	10-15V w/ UVLO	10-15V w/ UVLO	40/20ns On/Off	Under voltage lockout, soft start, integrated 50% duty cycle oscillator, programmable switching frequency and dead time, adjustable deadtime, adjustable over current protection.
AUIRS2003S	Single Phase Half-Bridge Drivers	200V	SOIC8	+290 / -600mA	10-20V w/ UVLO	10-20V w/ UVLO	680/150ns On/Off	Under voltage lockout, 3.3V,5V, and 15V input logic compatible, matched propagation delay, shoot-through protection.
AUIRS2184S	Single Phase Half-Bridge Drivers	600V	SOIC8	+1.9A / -2.3A	10-20V w/ UVLO	10-20V w/ UVLO	600/230ns On/Off	Under voltage lockout, 3.3V and 5V input logic compatible, matched propagation delay on both channels.
AUIRS21844S	Single Phase Half-Bridge Drivers	600V	SOIC14	+1.9A / -2.3A	10-20V w/ UVLO	10-20V w/ UVLO	600/230ns On/Off	Under voltage lockout, 3.3V and 5V input logic compatible, matched propagation delay on both channels, all high voltage pins on one side of package, separate logic and power ground.
AUIRS2302S	Single Phase Half-Bridge Drivers	600V	SOIC8	+120 / -250mA	5-20V w/ UVLO	5-20V w/ UVLO	720/250ns On/Off	Under voltage lockout for both channels, 3.3V, 5V and 15V input logic compatible, matched propagation delay
AUIR0815S*	Buffer Gate Driver	30V	SOIC8	+10 / -10A	10-20V w/ UVLO	N/A	50/50ns On/Off	High peak output current 10A, Low propagation delay time, Negative turn off bias can be apply to–VE using an external supply, Soft over-current shutdown output pin, Low supply current, Matched delay outputs, Undervoltage lockout, Over temperature protection, Continuous 'on' capability.
AUIRB24427S*	Dual Channel Low Side High Current Driver	24V	P-SOIC8	+6A / -6A	12.5-24V w/ UVLO	N/A	40/40ns On/Off	Under voltage lockout, 3.3V, 5V and 15V input logic compatible, output in phase with input, enable input, 6A output current.
AUIRS1170S*	Synchronous Rectification IC	200V	P-SOIC8	+3A / -6A	11-18V w/ UVLO	N/A	60/50ns On/Off	Under voltage lockout, Synch input, 200V Max Vds reading, 6A sink current. Discontinuous and continuous mode operation.

* New Automotive Innovation	Industrial grade sample available before full release

LVICs

Part	Application	Topology	Min Supply Voltage	Max Supply Voltage	Package	Output	Features
AUIR3240S	Start and Stop	Single High Side driver	6V	36V	SOIC8	13V	Very low operating current (<50µA). Thermal interface.
AUIR3200S	Relay replacement. High current application	Single High Side driver with protections	6V	36V	SOIC8	6V	Over-current and Over-temperature protection. Diagnostic.

Coming in 2013

IGBTs

Topology	V_{CES} (V)	ICE @ 25°C	ICE @ 100°C	$V_{CE(on)}$ typ. (V)	SCSOA typ.	Switch Frequ. (kHz)	Typical App.	DPak	D²Pak	TO-220	TO-262	TO-247	Super TO-247	Die
Discrete IGBT	600	78.0	50.0	1.95	10	4 - 16	PFC, SMPS		AUIRGS30B60K		AUIRGSL30B60K			
		34.0	18.0	1.40	N/A	<1	PTC heater and relay replacement		AUIRG4BC30S-S		AUIRG4BC30S-SL			
		23.0	12.0	1.95	N/A	4 - 30	PFC, SMPS		AUIRG4BC30U-S		AUIRG4BC30U-SL			
	1200		200.0	1.16	6	4 - 30	High power motor drive							AUIRG7CH80K6B-M*
		220.0	130.0	1.40	10	4 - 16	High power motor drive							AUIRG7CH73K10
		220.0	150.0	1.40	6	4 - 16	High power motor drive							AUIRG7CH73K6
		57.0	33.0	1.47	10	<1	PTC heater and relay replacement					AUIRG4PH50S		
		141.0	81.0	1.37	N/A	<1	PTC heater and relay replacement			AUIRGDC0250**				
IGBT + Co Pack Diode	600	240.0	160.0	1.70	5	4 - 30	High power motor drive						AUIRGPS4067D1	
		180.0	80.0	1.50	N/A	up to 100	SMPS, motor drive						AUIRGT6AG02	
		140.0	90.0	1.70	5	4 - 30	High power motor drive					AUIRGP4066D1(E)		AUIRGC4066
		96.0	48.0	1.65	5	4 - 30	High power motor drive					AUIRGP4063D(E)		AUIRGC4063
		90.0	57.0	1.6	6	4 - 30	Motor drive					AUIRGP(F)66548D0		AUIRGC76548N0
		80.0	50.0	2.15	5	40-70	SMPS					AUIRGP65A20D0		AUIRGC65A20N0
		75.0	45.0	2.00	10	20 - 50	PFC, SMPS					AUIRGP50B60PD1(E)		
		62.0	41.0	2.60	5	70-200	SMPS					AUIRGP65G20D0		AUIRGC65G20N0
		61.0	40.0	1.6	6	4 - 30	Motor drive		AUIRGS66524D0	AUIRGB66524D0		AUIRGP(F)66524D0		AUIRGC76524N0
		60.0	34.0	1.85	10	20 - 50	PFC, SMPS					AUIRGP35B60PD(E)		
		55.0	36.0	1.60	5	4 - 30	Motor drive		AUIRGS4062D1	AUIRGB4062D1	AUIRGSL4062D1	AUIRGP4062D1(E)		
		12.0	6.0	2.00	5	4 - 30	HID Lighting, injection	AUIRGR4045D						

* Solderable Front Metal Die | ** Super TO-220 package | Coming in 2013

N Channel MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ max @ $10V_{GS}$ (mΩ)	$R_{DS(ON)}$ max @ $4.5V_{GS}$ (mΩ)	I_D @ $T_C = 25°C$ (A)	Q_G Typ @ $10V_{GS}$ (nC)	Q_G Typ @ $4.5V_{GS}$ (nC)	PQFN 5x6	SO-8	DPak	D²Pak	D²Pak-7	I-Pak	TO-220	TO-262	TO-262WL	Full Pak	TO-247
20	20.0	28.0	36		7			AUIRLR3714								
24	1.0		429	180						AUIRF1324S-7P						
	1.25		380													AUIRFP2602
	1.30		382	120										AUIRF1324WL		
	1.5		353	160								AUIRF1324				
	1.65		340	160					AUIRF1324S							
30	2.4		260	160					AUIRF2903ZS				AUIRF2903ZL			
	7.0	10.0	116		60							AUIRL2203N				
	45.0	65.0	22		15			AUIRLR2703								
		11.0	13		22*		AUIRF7805Q									
40	0.75		240	305						AUIRFS8409-7P						
	1		240	210						AUIRFS8408-7P						
	1.2		195	305					AUIRFS8409							
	1.2		195	305									AUIRFSL8409			
	1.2		240	305										AUIRF8409WL		
	1.25		400	160						AUIRFS3004-7P						
	1.3		240	150						AUIRFS8407-7P						
	1.3		195	305								AUIRFB8409				
	1.4	1.7	380		120					AUIRLS3034-7P				AUIRF3004WL		
	1.6		195	210					AUIRFS8408							
	1.6		195	210									AUIRFSL8408			
	1.6		100	125		AUIRFN8406										
	1.6		320	170						AUIRF2804S-7P						
	1.7		350	220												AUIRFP4004
	1.7	2.0	343		108				AUIRLS3034			AUIRLB3034				
	1.75		340	160					AUIRFS3004			AUIRFB3004				
	1.8		195	150					AUIRFS8407							
	1.8		195	150									AUIRFSL8407			
	1.8		295	150										AUIRF2804WL		
	1.98		100	107				AUIRFR8405								
	1.98		100	107							AUIRFU8405					
	2.0		270	160					AUIRF2804S			AUIRF2804	AUIRF2804L			
	2.1		195	150								AUIRFB8407				
	2.3		120	107					AUIRFS8405							
	2.3		120	107									AUIRFSL8405			
	2.5		120	107								AUIRFB8405				
	3.1		100	65									AUIRFSL8403			
	3.1		100	65				AUIRFR8403								
	3.1		100	65							AUIRFU8403					
	3.1	5.9	180		75*				AUIRL1404ZS			AUIRL1404Z	AUIRL1404ZL			
	3.1	5.9	160	93					AUIRL1404S							
	3.3		120	65					AUIRFS8403							
	3.3		100	65		AUIRFN8403										
	3.7		180	100					AUIRF1404ZS			AUIRF1404Z	AUIRF1404ZL			
	4.0		202	131					AUIRF1404S			AUIRF1404				
	4.3		100	42				AUIRFR8401								
	4.3		100	42							AUIRFU8401					
	4.9	6.5	42		40			AUIRLR3114Z	AUIRLS3114Z							
	5.5		120	68					AUIRF4104S							
	5.5		119	59				AUIRFR4104			AUIRFU4104					
	5.5		120	68								AUIRF4104				
	9.0		77	30				AUIRFR3504Z								
	9.2		87	48				AUIRFR3504				AUIRF3504				
	10.0		14	69			AUIRF7484Q									

* Qg at $5V_{GS}$	** Super TO-220 (TO-273AA)	Coming in 2013

N Channel MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ @ $10V_{GS}$ max (mΩ)	$R_{DS(ON)}$ @ $4.5V_{GS}$ max (mΩ)	I_D @ T_C = 25°C (A)	Q_G Typ @ $10V_{GS}$ (nC)	Q_G Typ @ $4.5V_{GS}$ (nC)	SOT-223	SO-8	DPak	D²Pak	D²Pak-7	I-Pak	TO-220	TO-262	TO-262WL	Full Pak	TO-247
	2.6		240	130						AUIRF3805S-7P			AUIRF3805L-7P			
	3.3		210	190					AUIRF3805S			AUIRF3805	AUIRF3805L			
	4.7		135	150					AUIRF2805S							
	4.7		175	150								AUIRF2805				
	4.9		150	120					AUIRF1405ZS				AUIRF1405ZL			
	5.0		174	170								AUIRFBA1405				
	5.3		160	120												AUIRFP1405
	5.3		169	170								AUIRF1405				
	6.5		110	76					AUIRF3205ZS			AUIRF3205Z				
	7.5		94	63				AUIRFR1010Z	AUIRF1010ZS			AUIRF1010Z	AUIRF1010ZL			
	8.0	12.0	89		44*			AUIRLR3705Z								
	8.0	12.0	86		40*				AUIRL3705ZS			AUIRL3705Z	AUIRL3705ZL			
	8.0	13.0	58		130*										AUIRLI2505	
	8.0		140	100								AUIRF3305				
	8.0		56	113											AUIRFI3205	
	8.0		98	97								AUIRF3205				
	8.0		98	113												AUIRFP064N
	10.0	18.0	89		98*				AUIRL3705NS			AUIRL3705N				
55	11.0		62	40				AUIRFR48Z								
	11.0		61	43					AUIRFZ48ZS			AUIRFZ48Z				
	13.5	22.5	60		23*			AUIRLR2905Z								
	13.5	22.5	51		24*				AUIRLZ44ZS			AUIRLZ44Z	AUIRLZ44ZL			
	13.9		51	29					AUIRFZ44ZS			AUIRFZ44Z				
	14.0	17.0	61	61				AUIRLR3915								
	14.0		64	54								AUIRFZ48N				
	14.5		59	29				AUIRFR2905Z								
	16.0		56	70				AUIRFR2405								
	16.5		53	48									AUIRFZ46NL			
	17.5		49	42					AUIRFZ44NS							
	17.5		49	42								AUIRFZ44N				
	24.0		28	43											AUIRFIZ44N	
	24.5		30	18				AUIRFR4105Z								
	27.0	40.0	36		48*			AUIRLR2905								
	37.0	43.0	25		20*			AUIRLR3105								
	40.0	65.0	5	32		AUIRLL2705										
	40.0		19	23											AUIRFIZ34N	

* Qg at $5V_{GS}$	** Super TO-220 (TO-273AA)	Coming in 2013

N Channel MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ max @ $10V_{GS}$ (mΩ)	$R_{DS(ON)}$ max @ $4.5V_{GS}$ (mΩ)	I_D @ T_C = 25°C (A)	Q_G Typ @ $10V_{GS}$ (nC)	Q_G Typ @ $4.5V_{GS}$ (nC)	SOT-223	SO-8	DPak	D²Pak	D²Pak-7	I-Pak	TO-220	TO-262	TO-262WL	Full Pak	TO-247
55	40.0		26	23								AUIRFZ34N				
	45.0		25	23				AUIRFR4105								
	58.0	100.0	16		7*			AUIRLR024Z			AUIRLU024Z					
	60.0	100.0	5		7*	AUIRLL024Z										
	65.0	110.0	17		15*			AUIRLR024N								
	65.0	100.0	4		10*	AUIRLL024N										
	70.0		17	13					AUIRFZ24NS							
	75.0		16	13				AUIRFR024N								
	75.0		3	12		AUIRFL024N										
	140.0	280.0	3	10		AUIRLL014N										
	140.0	210.0	10		7.9*			AUIRLR014N								
	160.0		2	7		AUIRFL014N										
60	1.9	2.2	300		110					AUIRLS3036-7P						
	2.1		293	200						AUIRFS3006-7P						
	2.4	2.8	270		91				AUIRLS3036			AUIRLB3036				
	2.5		270	200					AUIRFS3006			AUIRFB3006				
	3.0		210	120								AUIRFB3206	AUIRFSL3206			
	3.0		200	120					AUIRFS3206							AUIRFP3206
	4.2		160	85					AUIRFS3306			AUIRFB3306				AUIRFP3306
	6.8	8.3	99		33			AUIRLR3636								
	8.4		79	46				AUIRFR1018E	AUIRF1018ES			AUIRF1018E				
	8.5		84	58					AUIRF1010EZS			AUIRF1010EZ				
	9.4		12	26			AUIRF7855Q									
	12.0		57	43					AUIRFZ44VZS							
	15.8		43	22				AUIRFR3806	AUIRFS3806			AUIRFB3806				
	16.5		55	45								AUIRFZ44V				
	26.0	30.0	7	21			AUIRF7478Q									
75	1.8		350	380												AUIRFP4368
	2.6		260	160						AUIRFS3107-7P						
	3.0		230	160					AUIRFS3107							
	3.3		210	160								AUIRFB3077				
	3.3		200	160												AUIRFP3077
	3.8		180	170						AUIRF2907ZS-7P						
	4.1		170	120					AUIRFS3207Z			AUIRFB3207Z				
	4.5		170	180								AUIRFB3207				
	4.5		170	180								AUIRF2907Z				AUIRFP2907Z

* Qg at $5V_{GS}$	** Super TO-220 (TO-273AA)	Coming in 2013

N Channel MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ @ $10V_{GS}$ max (mΩ)	$R_{DS(ON)}$ @ $4.5V_{GS}$ max (mΩ)	I_D @ T_C = 25°C (A)	Q_G Typ @ $10V_{GS}$ (nC)	Q_G Typ @ $4.5V_{GS}$ (nC)	SOT-223	SO-8	DPak	D²Pak	D²Pak-7	I-Pak	TO-220	TO-262	TO-262WL	Full Pak	TO-247
75	4.5		209	410												AUIRFP2907
	5.8		120	79					AUIRFS3307Z			AUIRFB3307Z				
	7.0		140	150								AUIRF3808				
	7.0		105	150					AUIRF3808S							
	9.0		80	56				AUIRFR3607	AUIRFS3607			AUIRFB3607				
	12.6		80	89								AUIRF3007				
	13.0		82	107								AUIRF2807				
	16.0		53	50				AUIRFR2307Z								
	22.0		45	34				AUIRFR2607Z								
	26.0		42	74				AUIRFR2407								
80	28.0	30.0	39		22			AUIRLR2908								
100	2.6		290	360												AUIRFP4468
	3.9	4.1	190		93					AUIRLS4030-7P						
	4.0		190	150						AUIRFS4010-7P						
	4.3	4.5	180		87				AUIRLS4030			AUIRLB4030				
	4.5		180	150								AUIRFB4110				AUIRFP4110
	4.7		180	143					AUIRFS4010				AUIRFSL4010			
	6.0		134	120												AUIRFP4310Z
	6.0		127	120					AUIRFS4310Z			AUIRFB4310Z				
	7.0		140	170					AUIRFS4310				AUIRFSL4310			
	9.0		97	83					AUIRFS4410Z			AUIRFB4410Z				AUIRFP4410Z
	10.0		96	120								AUIRFB4410				
	14.0		73	90					AUIRFS4610			AUIRFB4610				
	14.0	16.0	63		34			AUIRLR3110Z			AUIRLU3110Z					
	18.0		59	82					AUIRF3710ZS			AUIRF3710Z				
	18.0		56	69				AUIRFR3710Z								
	26.0		55	93					AUIRL2910S							
	26.5		36	42				AUIRFR540Z	AUIRF540ZS			AUIRF540Z				
	105.0	155.0	15	23	34*			AUIRLR3410								
	185.0	265.0	11		20*			AUIRLR120N								
	190.0		9	7				AUIRFR120Z			AUIRFU120Z					
150	5.9		171	151												AUIRFP4568
	11.0		104	77								AUIRFB4115				
	11.8		105	73						AUIRFS4115-7P						
	12.1		99	77					AUIRFS4115							
	15.0		83	71					AUIRFS4321			AUIRFB4321				

* Qg at $5V_{GS}$	** Super TO-220 (TO-273AA)	Coming in 2013

N Channel MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ @ $10V_{GS}$ max (mΩ)	$R_{DS(ON)}$ @ $4.5V_{GS}$ max (mΩ)	I_D @ T_C = 25°C (A)	Q_G Typ @ $10V_{GS}$ (nC)	Q_G Typ @ $4.5V_{GS}$ (nC)	SOT-223	SO-8	DPak	D²Pak	D²Pak-7	I-Pak	TO-220	TO-262	TO-262WL	Full Pak	TO-247
150	39.0		25	26								AUIRFB4615				
	42.0		33	26				AUIRFR4615	AUIRFS4615							
	42.0		43	133					AUIRF3415S			AUIRF3415				
	82.0		21						AUIRF3315S							
200	9.7		130	161												AUIRFP4668
	20.0		76	100								AUIRFB4127				
	22.0		72	100					AUIRFS4127							
	25.0		65	70												AUIRFP4227
	26.0		65	70								AUIRFB4227				
	26.0		62	70					AUIRFS4227				AUIRFSL4227			
	72.5		25	25								AUIRFB4620				
	78.0		24	25				AUIRFR4620	AUIRFS4620							
250	17.5		93	180												AUIRFP4768
	33.0		60	99								AUIRFB4332				
	345.0		9.3	13				AUIRFR4292								
300	69.0		40	78												AUIR FP4409
	75.0		39	78					AUIRFS4409							
	185.0		19	38					AUIRFS6535							

Dual N Channel MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ @ $10V_{GS}$ max (mΩ)	$R_{DS(ON)}$ @ $4.5V_{GS}$ max (mΩ)	I_D @ T_C = 25°C (A)	Q_G Typ @ $10V_{GS}$ (nC)	Package (PQFN 5x6)	Package (SO-8)
30	29.0		7			AUIRF7313Q
30	50.0	80.0	4.9	17		AUIRF7303Q
40	6		30	45	AUIRFN8459*	
40	10.5		30	21	AUIRFN8458*	
50	130.0	200.0	3.0	10	AUIRF7103Q	AUIRF7103Q
55	50.0	65.0	5.1	29	AUIRF7341Q	AUIRF7341Q

P Channel MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ @ $10V_{GS}$ max (mΩ)	$R_{DS(ON)}$ @ $4.5V_{GS}$ max (mΩ)	I_D @ T_C= 25°C (A)	Q_G Typ @ $10V_{GS}$ (nC)	Q_G Typ @ $4.5V_{GS}$ (nC)	SO-8	DPak	D²Pak	TO-220	TO-262	Full Pak
-150	150.0		-27	71				AUIRF6218S			
-150	295.0		-13	44			AUIRFR6215	AUIRF6215S	AUIRF6215		
-100	60.0		-38	150				AUIRF5210S			
-100	117.0		-23	65					AUIRF9540N		
-100	205.0		-13	39			AUIRFR5410				
-55	20.0		-74	120				AUIRF4905S	AUIRF4905	AUIRF4905L	AUIRFI4905
-55	65.0		-28	42			AUIRFR5305				
-55	100.0		-17	23					AUIRF9Z34N		
-55	110.0		-18	21			AUIRFR5505				
-55	175.0		-11	13			AUIRFR9024N				
-30	20.0	35.0	-10	61		AUIRF7416Q					
-20	60.0		-5	15		AUIRF7207Q					

Dual P Channel MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ @ $10V_{GS}$ max (mΩ)	$R_{DS(ON)}$ @ $4.5V_{GS}$ max (mΩ)	I_D @ T_C= 25°C (A)	Q_G Typ @ $10V_{GS}$ (nC)	Q_G Typ @ $4.5V_{GS}$ (nC)	Package (S0-8)
-55	105.0	170.0	-3.4	26		AUIRF7342Q
-30	58.0	98.0	-4.9	23		AUIRF7316Q
-20		90.0	-4.3		22	AUIRF7304Q

N+P Channel Paired MOSFETs

$V_{(BR)DSS}$ (V)	$R_{DS(ON)}$ @ $10V_{GS}$ max (mΩ)	$R_{DS(ON)}$ @ $4.5V_{GS}$ max (mΩ)	I_D @ T_C= 25°C (A)	Q_G Typ @ $10V_{GS}$ (nC)	Q_G Typ @ $4.5V_{GS}$ (nC)	Package (S0-8)
30	100 / 250	150 / 400	3.5 / -2.3	6.9 / 6.1		AUIRF9952Q
30	29 / 58	46 / 98	5.8 / -4.9	22 / 23		AUIRF7319Q
30	45 / 90	75 / 180	5.8 / -4.3	25 / 25		AUIRF7379Q
30	50 / 100	80 / 160	4.7 / -3.5		25 / 25	AUIRF7309Q
55	50 / 105	65 / 170	4.7 / -3.4	24 / 26		AUIRF7343Q

RESOURCES

THE myPOWER ADVANTAGE

- Eliminates simulation model development by giving access to a fully developed, highly accurate and FREE model
- Eliminates the delay in building breadboards and most breadboarding iterations
- Enables more robust designs optimized for cost and performance
- Saves 1 to 6 months in development time and thousands of dollars in development cost

- **SIMULATE CIRCUITS**
- **COMPARE MOSFETS**
- **ANALYZE WAVEFORMS**
- **CALCULATE LOSSES**

Designing DC-DC converters for advanced NPU or CPU is becoming increasingly complex. Now you have an alternative to starting your new design from scratch.

Try the myPOWER on-line design center: it is one place dedicated to the design of high performance DC-DC converters operating at up to 80A at V_{OUT} as low as 1.1V and at frequencies as high as 1 MHz.

myPOWER gives you a proven design with a complete, costed BOM and a high speed, +/-5% accuracy simulation tool to verify and optimize your circuit. And you can order a customized reference design kit for overnight delivery.

POL SUPIRBUCK DESIGN TOOL

Fully featured, easy to use On-line design tool for high efficiency POL applications. Tool features include Schematic Capture, AC, Steady State, Transient Analysis, Thermal Analysis, BOM creation, and more…

IGBT SELECTION TOOL

Compare IGBT choices
See Lowest Losses
Select Optimal IGBT

SYNCHRONOUS RECTIFICATION

Compare IGBT choices
See Lowest Losses
Select Optimal IGBT

MOTOR CONTROL

Analyze performance
Compare IGBT modules Calculate efficiency and Tj

LIGHTING

Create Schematic and BOM Display output waveforms AC or DC input Designs

POWER FACTOR CORRECTION

Simple circuit design
Calculate all part values Reduce PCB space 50%

MOTOR CONTROL

Create Control Algorithms Get Software UpdatesPeek into Future releases

REFERENCE DESIGNS

International Rectifier recognizes the importance of evaluating the performance of products in an actual operating circuit. Our Reference Design Boards are fully functional, 100% tested designs. Through the use of these reference design boards, weeks can be taken off of your design cycle time.

For more information visit http://www.irf.com/technical-info/refdesigns/

Application	Description
DC-DC	Kits made to support DC-DC sync buck converters, DC Bus converters and synchronous PWM controllers
Lighting	Ballast control kits that drive a number of popular fluorescent and halogen lamp types
AC-DC	Reference designs for AC-DC power conversion applications
Motor Control	High voltage gate drive kits for AC Induction or Brushless Motor applications
Appliance Power Module	Appliance motor drive reference design for 0.5 HP AC induction motors
Audio	Audio reference design for High Power Class D Audio Power Amplifier

DC-DC

Lighting

AC-DC

Motor Control

Appliance Power Module

Audio

GLOBAL ENVIRONMENTAL, HEALTH, AND SAFETY POLICY

International Rectifier is committed to protecting and preserving the environment in all its business operations and providing a safe and secure workplace. It is our intent to respect the views of our customers, employees, community, and stakeholders as a responsible business dedicated to continual improvement in environmental, health and safety management and the prevention of pollution.

GLOBAL ENVIRONMENTAL, HEALTH, AND SAFETY POLICY CONSISTENT WITH OUR VALUES, PRINCIPLES, AND POLICIES, WE PLEDGE TO:

- Encourage the efficient use of electricity by improving the power conversion process through the development of innovative products.
- Comply with all applicable laws and regulations, and consider any other requirements to which we subscribe.
- Ensure policy performance by stating objectives and setting clear targets for their achievement as part of the Annual Business Planning process.
- Review our EH&S management system to assure its continued applicability and effectiveness through periodic assessments and audits.
- Help conserve natural resources through additional cost-effective reuse, recycling, and reduction efforts in existing and future operations.
- Foster a safe and secure work environment by increasing employee knowledge and awareness of environmental, health and safety best practices.
- Communicate the Policy to all employees, stakeholders, and make it available to the public.

STEWARDSHIP

Creating Environmental Value - International Rectifier is dedicated to providing an environmentally sustainable future by creating environmental value through our product designs and reducing our local and global environmental footprint through a management culture that integrates environmental goals into the decision making model

- IR designs and manufactures power management products that save energy, providing leadership to an environmentally sustainable future.
- Reducing our footprint on the local and global environment by having environmental goals as part of our annual business planning process.
- ISO14001 Certifications

AUIRF7665S2
IOR
DirectFET2
MOSFET
IOR
DirectFET2
MOSFET
AUIRF7739L2

IOR
PowIRstage™
IOR
PowIRstage™
PowIRstage™
IR3553

IOR
PowIRaudio™
PowIRaudio™
Class D Audio Amplifier

IOR
SupIRBuck
Gen 3

µIPM™
IOR
µIPM

IOR
IOR

IOR

Detailed information about IR's various packages is available on the web at http://www.irf.com/package/. Find everything from package outlines, part marking, RoHS and REACH compliance information as well as lead options for through-hole packages. Additionally, there is a library of applications notes providing mounting guidelines and packaging related technical support.

PACKAGING INFORMATION IS AVAILABLE FOR:

- Discrete Power MOSFETs and IGBTs
- Integrated Circuits
- Intelligent Power Modules
- Protected MOSFETs
- MERs
- High Reliability Packages

Power Packages

Through-hole

TO-220	TO-247

SMD

DPAK	D²PAK

PQFN	DirectFET

5x6	3.3x3.3	Large Can	Medium Can

3.0x3.0	2x2	Small Can

SMD Standard Packages (not optimized for power)

SO-8	TSSOP-8

TSOP-6	SOT-23

International Rectifier's SureCHIP Program is a process regimen that combines high-volume manufacturing and assembly with precision parametric testing and special packaging to deliver Known Good Die (KGD) power semiconductors. The KGD process provides measurably higher yields and is an economically viable solution in the manufacturing of multi-chip modules (MCMs). As part of the SureCHIP process, individual good die from probed and sawn wafers are transferred to a custom-designed test nest for 100% electrical and visual testing.

SureCHIP power semiconductor die are packaged into tape and reel in a nitrogen atmosphere or into chip trays for shipment. The SureCHIP KGD process is qualified for 100% DC parametric testing. Additionally, avalanche testing on MOSFETs and short circuit testing on IGBTs can be performed.

THE IR ADVANTAGE

- KGD testing equal to package part testing
- 100% Avalanche capability for more than 75A
- Singulated testing, eliminating lateral current paths
- Accurate testing for $R_{DS(on)}$
- Voltage ratings up to 1200V
- Leakage current testing down to nA range
- Pogo pins provide accurate voltage and resistance readings
- Hybrid modifications enable clean noise environment
- Each die is warranted to be electrically good

KGD PACKAGE OPTIONS

T&R option:
T&R dimensions are according to die size.

Chip pack option:
Tray packaging option can be either 4" x 4" or 2" x 2" (outside dimensions).

Individual Die from probed and sawn wafer are transferred to a custom designed test nest for electrical testing

SureCHIP is packaged in tape after passing 100% electrical testing and visual inspection

Die is fully tested in the proprietary test nest with the true Kelvin connections to enable measurements at high current

SAMPLE AVALANCHE TEST RESULTS

Comparison of Wafer Level Testing of $R_{DS(on)}$ vs. IR's KGD Solution

WAFER LEVEL TESTING

1. Multiple contacts between backside of wafer and chuck tester
2. Die to Die interference cannot be isolated
3. $R_{DS(on)}$ accurate down to 20mΩ
4. I_{DRAIN} measurements constrained to less than 10A
5. Parallel testing resulting in multiple signal paths that can effect results
6. Key measurements impacted by Kelvin contacts over entire backside of wafer
7. High risk for final application due to dicing operation

IR'S KGD LEVEL TESTING

1. Pogo pins provide uniform contact
2. Direct contact with isolated Die
3. $R_{DS(on)}$ accurate down to 2.5mΩ
4. I_{DRAIN} Measurements possible to greater than 75A
5. Singulated testing, eliminating lateral current paths
6. Hybrid modifications enable cleaner noise environment
7. Kelvin contact fixed to single location for single die
8. Singulated die usually pre-screened for mechanical defects

YOUR APPLICATION ENGINEERING RESOURCE FOR IR

ONLINE : tac.irf.com

EMAIL : tac@irf.com

TELEPHONE :

Americas
++1 310 252 7105 : 8AM to 5PM PST

Europe
++49(0)6102 884 310 : 9AM to 5PM GMT

Asia
++86(0)21 5877 5606 : 9AM to 6PM CST

- Speak Directly to Knowledgeable Application Engineers
- Languages: English, German, Mandarin, Spanish
- Global Presence for 24-Hour Engineering Support
- Submit Questions On-line with the Capability of Tracking your Requests
- 24-Hour Response Time
- Access to Extensive Library of Frequently Asked Questions

TYPES OF INQUIRIES SUPPORTED BY TAC INCLUDE:

- Assistance with Design-In of IR Technologies
- Application Assistance
- Trouble-Shooting Customer Designs
- Product Selection
- Verification of Product Datasheet Parameters
- Cross Reference and Replacement Recommendations
- Assistance with Orderable Part Numbers

IOR International Rectifier

Product Line Overview

Product Line	Applications	Key Products
Energy Saving Products Integrated design platforms that enable customers to add energy-conserving features that achieve lower operating energy costs and manufacturing Bill of Material (BOM) costs.	• Appliances • Audio • Display • Industrial • Lighting • SMPS	• Digital Control ICs • High-Voltage ICs • IGBTs • IRAM Integrated Power Modules • MERs • *µIPM™*
Enterprise Power Optimized power management system solutions that deliver benchmark power density, efficiency and performance in enterprise power.	• Servers • Storage Networks • Switchers & Routers • Workstations • Notebooks • Game Stations • Set-Top Box	• DirectFET®*plus* • Sup*IR*Buck® • Pow*IR*stage® • CHiL Digital Controllers
Automotive Automotive grade power management solutions qualified to meet the needs of 12V, 24V and HEV/EV applications with a zero defect goal.	• AC and DC Motor Drives • Powertrain / Engine control • Body Electronics • Lighting • Class D Audio • Heavy Loads and Actuators	Automotive Qualified: • HEXFET® Power MOSFETs • Intelligent Power Switches • Driver ICs • IGBTs • DirectFET®2 • COOLiR™
Benchmark MOSFETs 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.	• Audio • Computing • Communications • Motor Control • Power Supply • Synchronous Rectification	• Discrete HEXFET® MOSFETs • Dual HEXFET® MOSFETs • FETKY® • DirectFET® • StrongIRFET™ • *FastIRFET™*
HiRel 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.	• Space • Military • Commercial Aviation • Rugged Industrial • Medical	• RAD-Hard MOSFETs • Power Modules/Hybrid Solutions • Motor Control Solutions • DC-DC Converters