Bulletin PD-21073 08/05

International
IOR Rectifier

IRKDU162/12

Hexfred™ Utrafast DIODES **INT-A-pak™ Power Modules**

Features

- Electrically isolated: DBC base plate
- 3500 V_{RMS} isolating voltage
- Standard JEDEC package
- Simplified mechanical designs, rapid assembly
- High surge capability
- Large creepage distances
- UL pending
- Case style Int-A-Pk

100 A

Major Ratings and Characteristics

Parameters	IRKDU162/12	Units
$I_{F(AV)rect}$	100	A
@ T_C	88	°C
T_{rr}	200	ns
V_{RRM}	1200	V
T_J	-40 to 150	°C
T_{STG}	-40 to150	°C

ELECTRICAL SPECIFICATIONS

Voltage Ratings

Type number	Voltage Code	V_{RRM} , maximum repetitive peak reverse voltage V	V_{RSM} , maximum non-repetitive peak rev. voltage V
IRKDU162/12	12	1200	1250

Forward Conduction

	Parameter	IRKDU162/12 Typ.	IRKDU162/12 Max.	Units	Conditions
$I_{F(AV)}$	Max. average forward current	-	100	A	Rectangular Conduction, 50% duty cycle
	@ Case temperature	-	88	°C	
V_{FM}	Forward voltage drop	2.5	3.2	V	I_F = 100A, T_J = 25°C, t_p = 400µs square wave
		2.9	3.9		I_F = 160A, T_J = 25°C, t_p = 400µs square wave
T_{rr}	Reverse recovery time	150	200	ns	I_F = 160A, T_J = 25°C, -di/dt = 200A/us, V_R = 200V
Q_{rr}	Reverse recovery charge	2000	2400	nC	
I_{REC}	Reverse recovery current	20	22	A	
$di_{(rec)M}/dt$	Max. forward voltage drop	-	300	A/µs	

Blocking

	Parameter	IRKDU162/12	Units	Conditions
I_{RRM}	Max. peak reverse leakage current	30	mA	T_J = 150°C
V_{INS}	RMS isolation voltage	3500	V	50 Hz, circuit to base, all terminals shorted, t = 1 sec

Thermal and Mechanical Specifications

	Parameter		Values	Units	Conditions
T_J	Max. junction operating temperature range		-40 to 150	°C	
T_{stg}	Storage temperature range		-40 to 150		
R_{thJC}	Max. thermal resistance, junction to case		0.18	K/W	Per junction, DC operation
R_{thCS}	Typical thermal resistance, case to heatsink		0.05		Mounting surface flat, smooth and greased
T	Mounting torque ±10%	to heatsink	4 to 6	Nm	A mounting compound is recommended and the torque should be rechecked after a period of 3 hours to allow the spread of the compound
		busbar	4 to 6		
wt	Approximate weight		200 (7.1)	g (oz)	
	Case style		New Int-A-Pak		

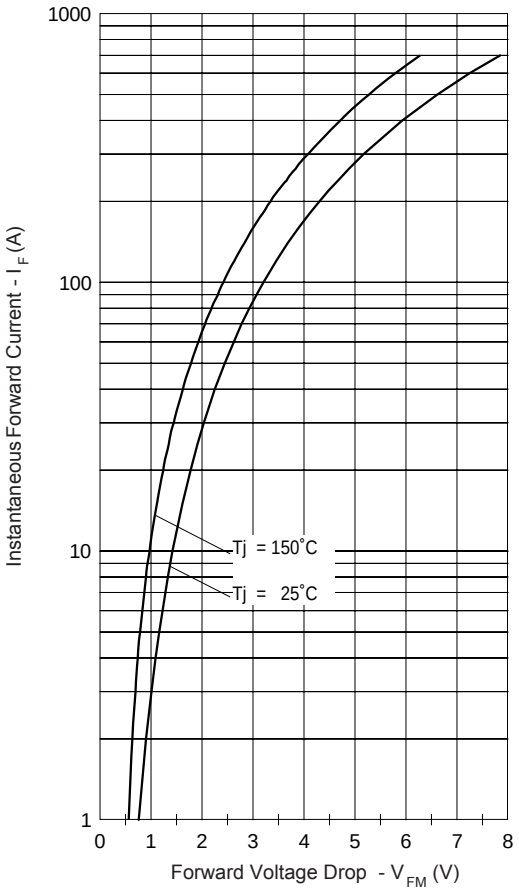


Fig. 1 - Maximum Forward Voltage Drop Characteristics

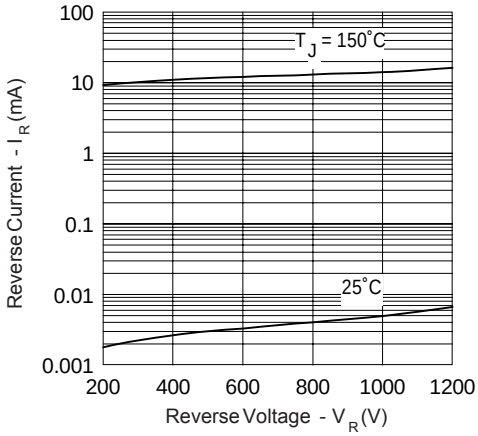


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

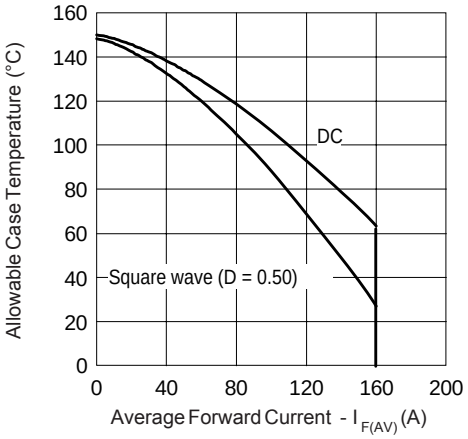


Fig. 3 - Maximum Allowable Case Temperature Vs. Average Forward Current

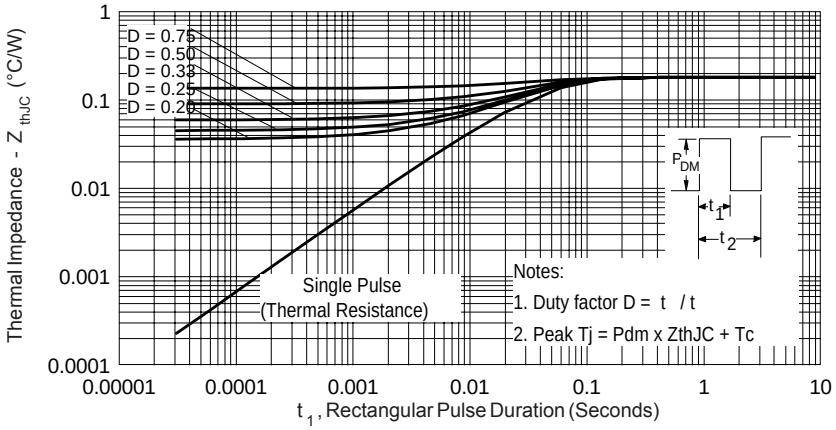


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

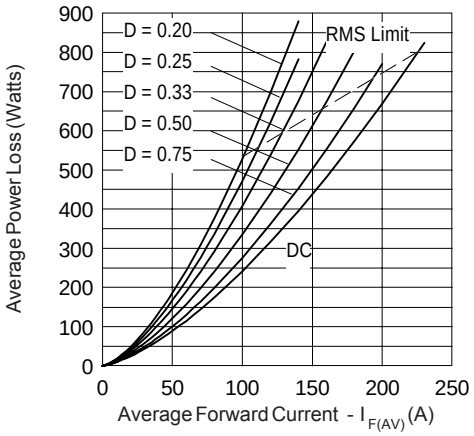


Fig. 5 - Forward Power Loss Characteristics

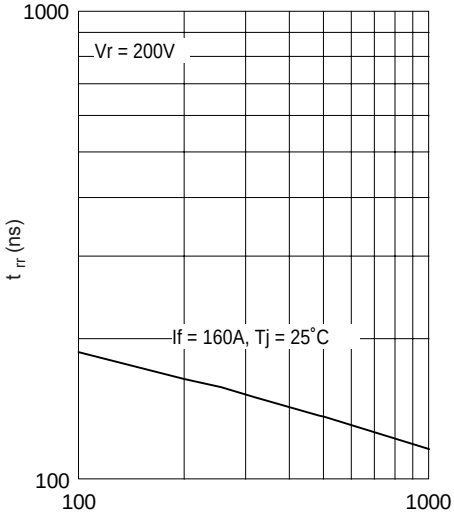


Fig. 6 - Typical Reverse Recovery Time vs. di_f /dt (per Leg)

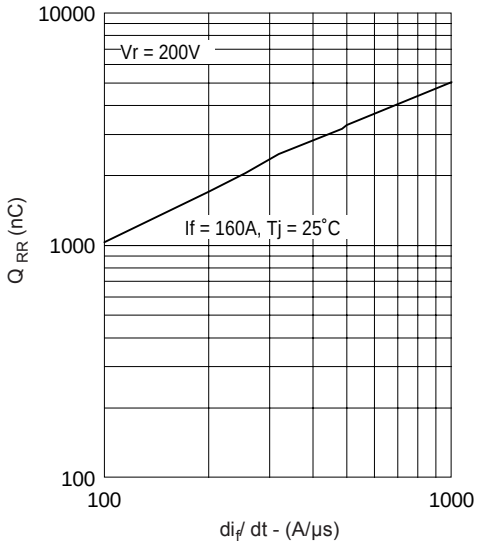


Fig. 7 - Typical Reverse Recovery Charge vs. di_f /dt (per Leg)

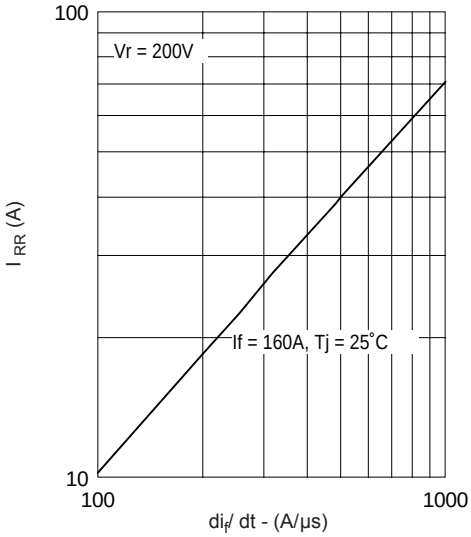
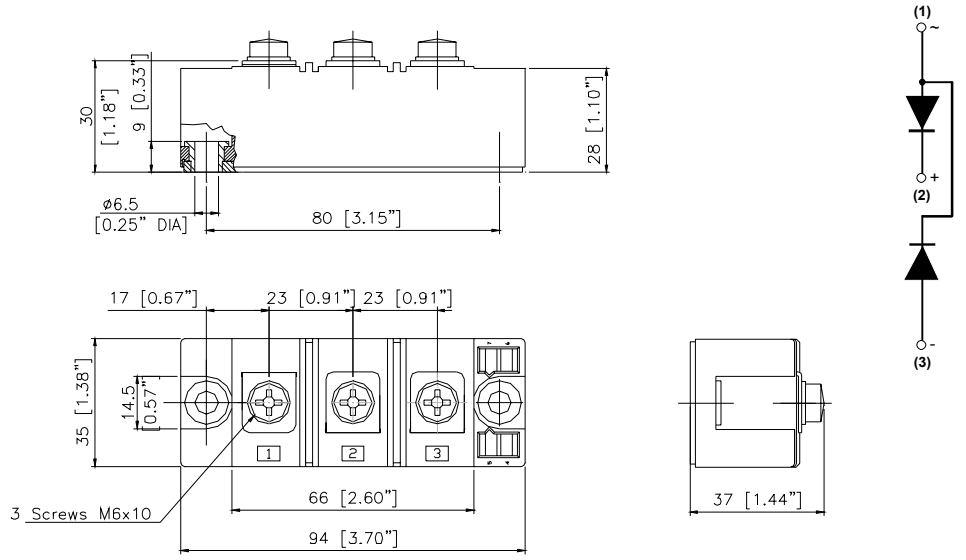


Fig. 8 - Typical Reverse Recovery Current vs. di_f /dt (per Leg)

Outline Table



Dimensions are in millimeters and [inches]

Ordering Information Table

Device Code

IR	K	DU	162	/	12
1	2	3	4		5

1	-	International Rectifier
2	-	K = Int-A-Pak module
3	-	DU = Hexfred Ultrafast diode
4	-	Current Rating
5	-	Voltage Rating (12 = 1200V)

Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level.
Qualification Standards can be found on IR's Web site.

IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105
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08/05

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