



Ruttonsha International Rectifier Ltd.

POWER MODULES

IRKE 950/... High Voltage Single Diode Module

FEATURES

- # Electrically isolated base plate.
- # 3000Vrms isolated voltage.
- # Industrial standard package.
- # Simplified mechanical designs, rapid assembly.
- # High surge capability.

DESCRIPTION

These IRK series of Power Modules use power diodes in three basic configurations. The semiconductors are electrically isolated from the metal base, allowing common heat sinks and compact assemblies to be built. They can be interconnected to form single phase or three phase bridges.

These modules are intended for general purpose applications such as battery chargers, welders and plating equipment.

MAJOR RATING & CHARACTERISTICS

Parameters	IRKE 950	Units
$I_{F(AV)}$ @Tc-100°C	950	A
$I_{F(RMS)}$	1500	A
I_{FSM} @ 50Hz	35000	A
I^2t @ 50Hz	6125000	A ² S
V_{RRM}	3600 to 4400	V
T_J	-40 to 150	°C

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IRKE 950 Series

ELECTRICAL SPECIFICATION VOLTAGE RATINGS

Type Number	Voltage Code	V_{RRM} max. repetitive peak reverse and off-state blocking voltage V	V_{RSM} max. Non-repetitive peak reverse voltage V	I_{DRM} / I_{RRM} max. @ 150°C Max. mA
IRKE 950	360	3600	3700	100
	380	3800	3900	
	400	4000	4100	
	440	4400	4500	

ON-STATE CONDUCTION

	Parameter	IRKE 950	Unit	Conditions	
$I_{F(AV)}$	Max, average forward current @ Case temperature	950	A	180° conduction, half sine wave	
		100	°C		
$I_{F(RMS)}$	Max, RMS forward current	1500	A	T _c 100°C	
I_{FSM}	Max, peak, one cycle forward non-repetitive surge current	35000	A	t = 10ms	T _j = 25°C
I^2t	Maximum I ² t for fusing	6125000	A ² s	t = 10ms	
$V_{T(TO)}$	Threshold voltage	0.85	V	T _j = T _j max.	
r_t	Slope resistance	0.28	mΩ	T _j = T _j max,	
V_{FM}	Max, forward voltage drop	1.78	V	I _F = 3000Amps, T _j = T _j Max.	

BLOCKING

	Parameter	IRKE 950	Unit	Conditions
I_{RRM}	Max. peak reverse leakage current	100	mA	T _j = 150°C,
V_{ISO}	RMS Isolation voltage	3.0	kV	50Hz, Circuit to base, all terminal shorted, t=1 min.

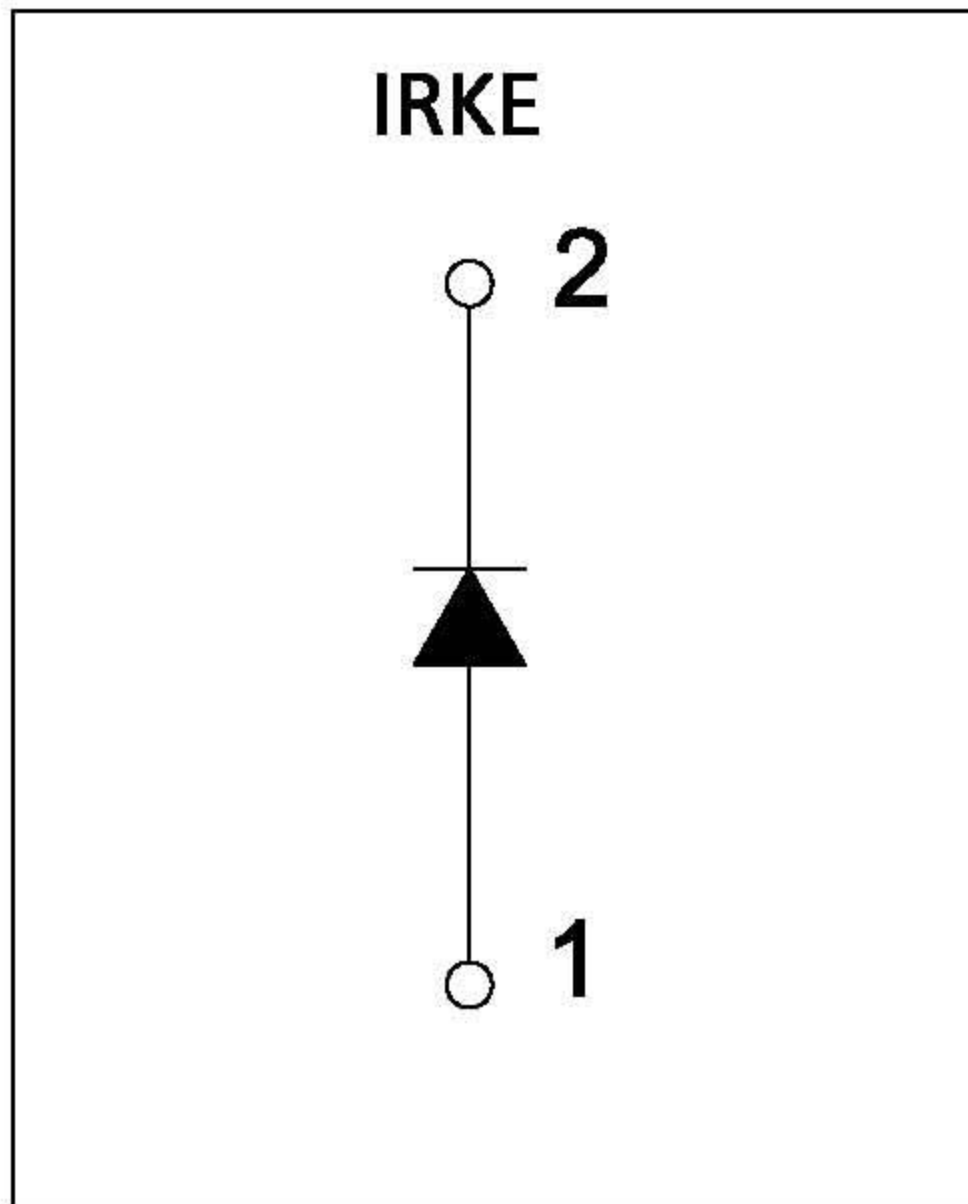
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IRKE 950 Series

THERMAL AND MECHANICAL SPECIFICATION

	Parameter	IRKE 950	Unit	Conditions
T_J	Junction operating temperature	-40 to 150	°C	
T_{stg}	Max, storage temperature range	-40 to 150		
R_{th-j-c}	Thermal resistance, junction to case	0.042	°K/W	Per arm.
R_{th-c-s}	Thermal resistance, case to heat sink	0.01	°K/W	Per arm.
W t	Approximate Weight	2200	g	

CIRCUIT CONFIGURATION TABLE



CIRCUIT CONFIGURATION TABLE

IRK	E	950	/	44
①	②	③		④
<p>1). - Module Type 2). - Circuit configuration (See Circuit Configuration table) 3). - Current Code 4). - Voltage Code (See Voltage Rating Table)</p>				

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OUTLINE DIAGRAM

