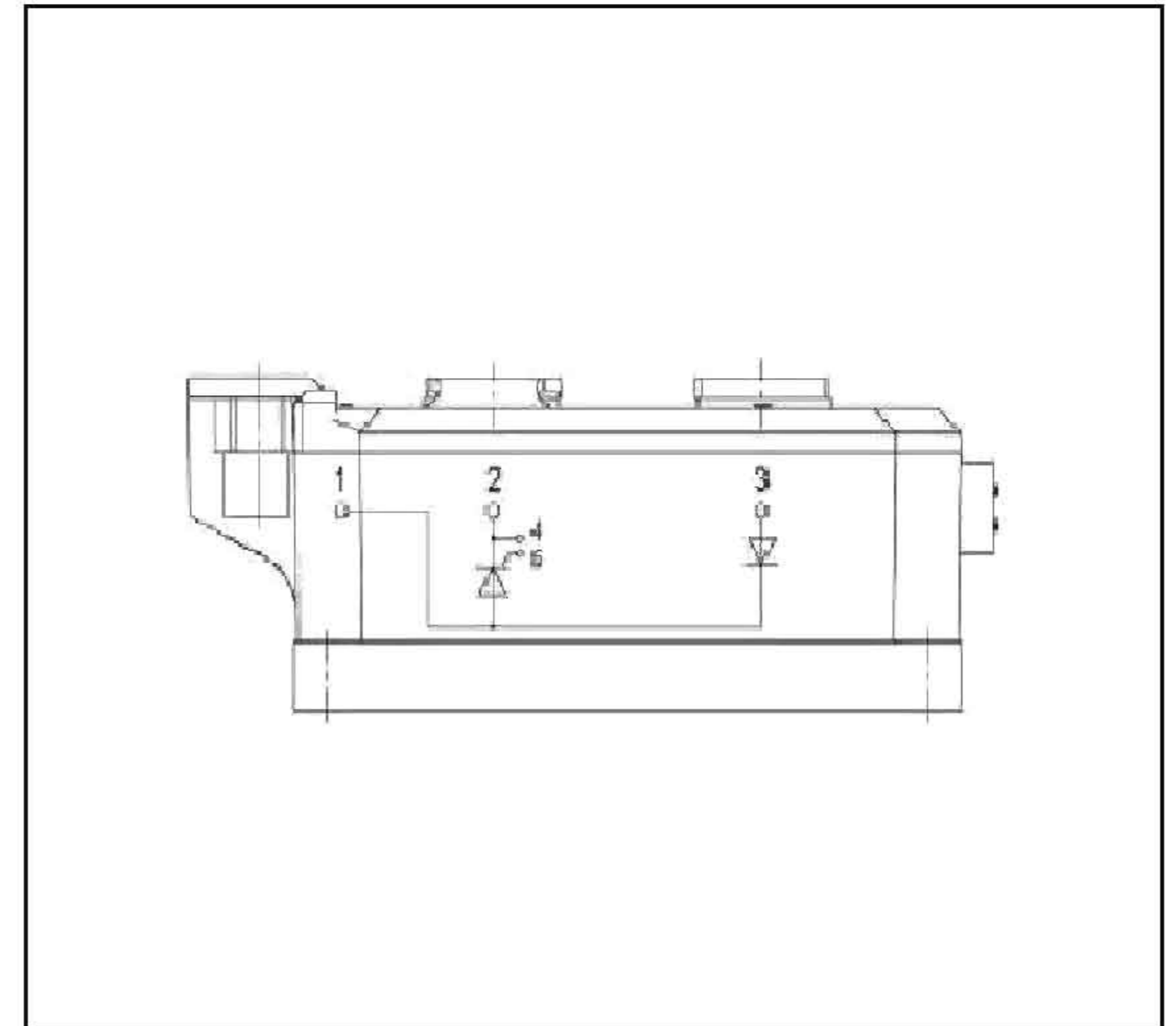


IRK. 700 SERIES High Voltage Diode/Diode

FEATURES

- ❖ *High voltage.*
- ❖ *Electrically isolated base plate.*
- ❖ *3000 V_{RMS} isolating voltage.*
- ❖ *Industrial standard package.*
- ❖ *Simplified mechanical designs, rapid assembly.*
- ❖ *High surge capability.*
- ❖ *Large creepage distances.*
- ❖ *Aluminum Nitride*



DESCRIPTION

This IRK series of Power Modules uses power diodes in three basic configurations. The semiconductors are electrically isolated from the metal base, allowing common heatsinks 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 RATINGS & CHARACTERISTICS

Parameters	IRK.700	Units
$I_{T(AV)}$ @ $T_c = 100^\circ\text{C}$	701	A
$I_{T(RMS)}$	1100	A
I_{TSM} @ 50 Hz	22500	A
I^2t @ 50 Hz	2531	kA ² s
$V_{DRM} - V_{RRM}$	Up to 2200	V
T_j	-40 to +135	$^\circ\text{C}$

POWER MODULES

IRK.700 SERIES

ELECTRICAL SPECIFICATION VOLTAGE RATINGS

Type Number	Voltage Code	V_{RRM} , max. repetitive peak reverse voltage blocking voltage V	V_{RSM} , max. non-repetitive peak reverse voltage V	I_{RD} max. @ 135 °C mA
IRK.700	12	1200	1300	50
	14	1400	1500	50
	16	1600	1700	50
	18	1800	1900	50
	22	2200	2300	50

FORWARD CONDUCTION

	Parameters	IRK.700	Units	Conditions
$I_{T(AV)}$	Max. average on- state current	701	A	180° conduction, half sine wave
	@ case temperature	100	°C	
$I_{T(RMS)}$	Max. RMS on- state current	1100	A	@ 100 °C
I_{FSM}	Max. peak, one cycle on- state non-repetitive surge current	25000	A	t = 10ms 25°C Sinusoidal half wave, Initial $T_J = T_J$ max.
		22500		
I^2t	Maximum I^2t for fusing	3125	kA ² s	t = 10ms 25°C Sinusoidal half wave, Initial $T_J = T_J$ max.
		2531		
$V_{T(TO)}$	Threshold voltage (max)	0.7	V	$T_J = T_J$ max.
r_l	Slope resistance (max)	0.15	mΩ	$T_J = T_J$ max.
V_F	Max. voltage drop	1.30	V	$I_F = 2000$, 25°C

POWER MODULES

IRK. 700 SERIES

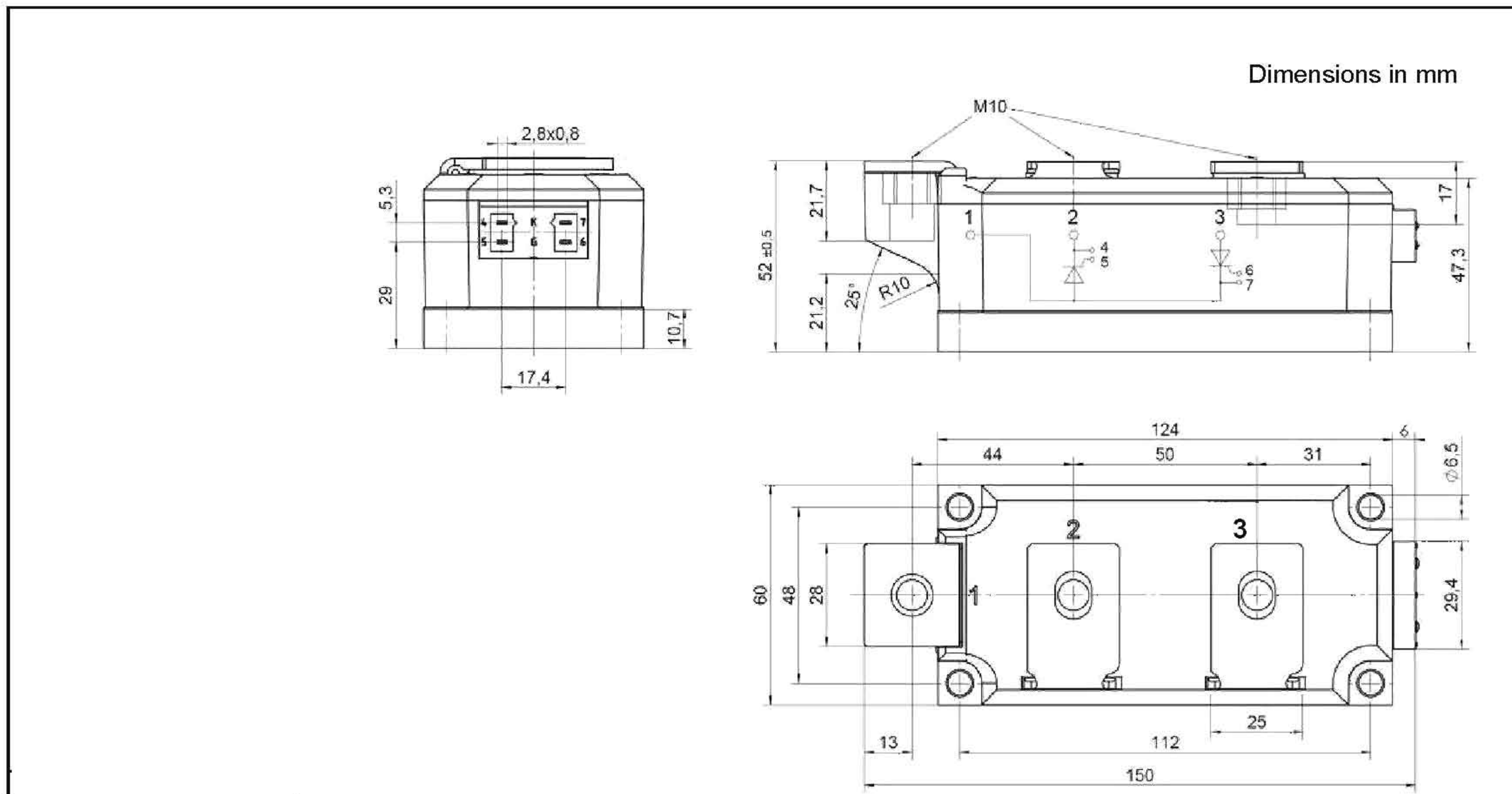
THERMAL AND MECHANICAL SPECIFICATION

	Parameter	IRK700	Units	Conditions
T_J	Max. operating temperature range	-40 to 135	°C	
T_{sig}	Max. storage temperature range	-40 to 160		
R_{thJ-C}	cont.,; per diode /per module sin. 180; per diode / per module	0.069 / 0.034 0.072 / 0.036	K/W K/W	Mountingsufaceflat,smooth and greased
R_{thC-S}	rec,. 120; diode / per module per diode / per module	0.077 / 0.038 0.02 / 0.01	K/W K/W	
T	Mounting tourque, ±10%	5 (12)	Nm	To heatsink and (to terminals)
V_{INS}	RMS Isolation Voltage	3000/3600	V	1min,/1sec. All Terminals shorted

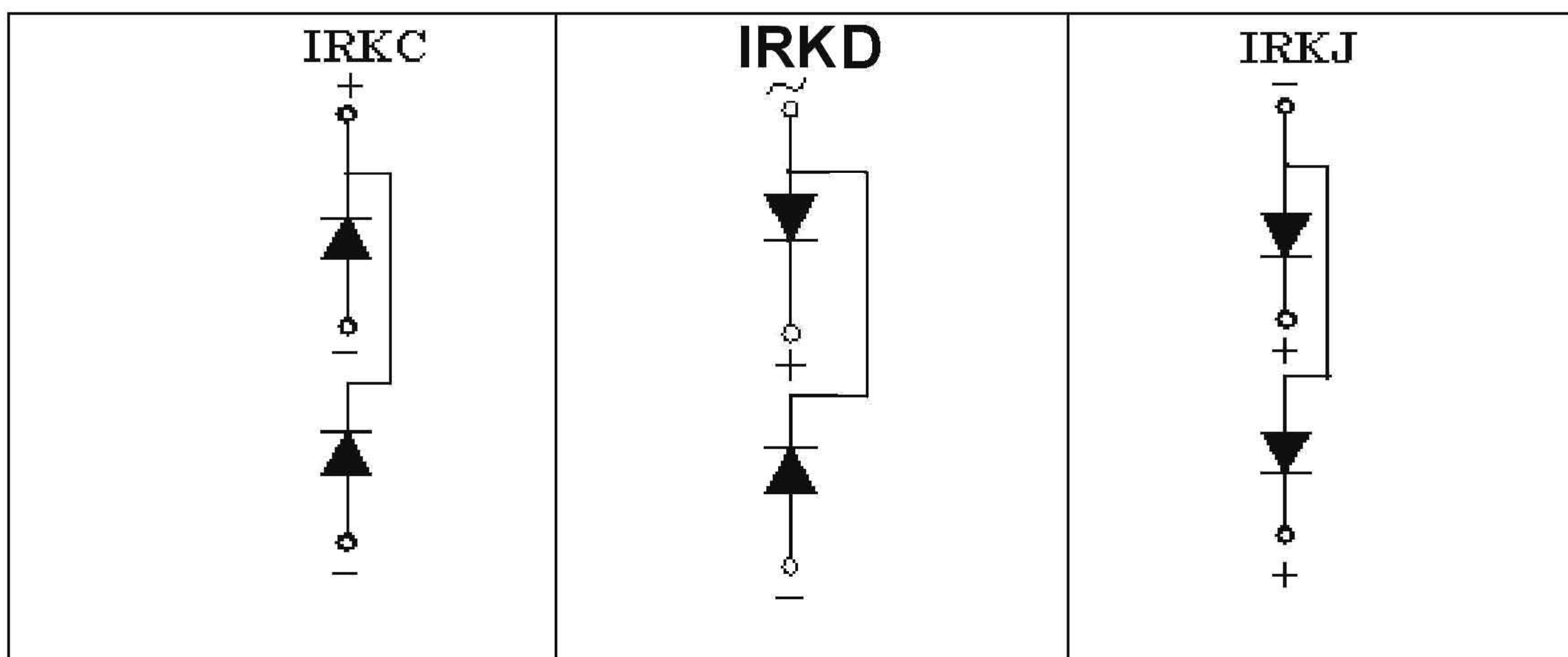
POWER MODULES

IRK. 700 SERIES

OUTLINE DIAGRAM



Circuit Configuration Table



Ordering Information Table

