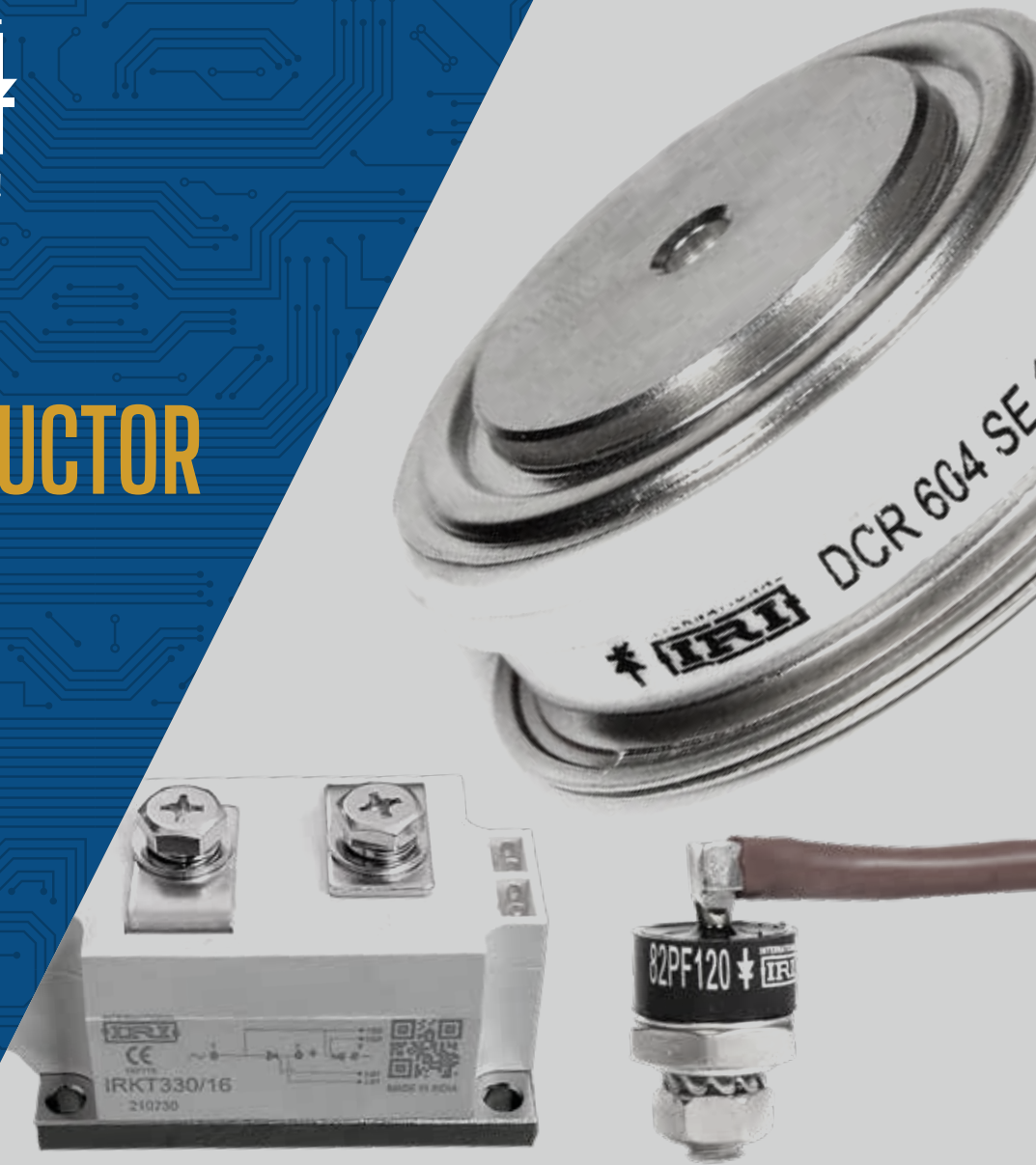




Excellence, simplified!

POWER SEMICONDUCTOR DEVICES



Insel Rectifiers (India) Pvt. Ltd.

(An ISO 9001 : 2015 Certified Company)



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Power Diodes
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Thyristors (SCRs)
Converter Diodes
Capsule Diodes (DS)
Capsule Thyristors (DCR)
(Converter / Inverter)
AC Drive Thyristors
Surge Suppressors
Field Failure Relay (FFR)
RRA Assembly
Bridge Rectifiers
Power Modules
Selenium Rectifiers
Water Cooled Assembly
Solid State Rectifier (SSR)

POWER SEMICONDUCTOR DEVICES

ABOUT US

Insel Rectifiers India is one of the top manufacturers of semiconductor devices in India. With over 50 years of quality experience and excellence as our motto, we strive at Insel Rectifiers in surpassing our clients' quality expectations, and providing products as per customized specifications in the quickest time possible, while keeping the costs extremely reasonable. Our core values of integrity and surpassing expectations have been the reason the group has been able to achieve record growth while maintaining close relationships and continuing patronage from our clients.

Superior Products - Surpassing Expectations - Best-in-class Innovation - World-class Facilities - Integrity & Commitment - Building Relationships

The new banner was established in the year 1986, a brain child of the new generation professionals, super skilled in handling diverse fields of electronics and engineering goods as per modern and ever-changing needs. The qualified professionals are determined to curve excellence in the trade in terms of product quality and after-sales service. In a very short time frame, we have developed the largest distribution network in India, with branch offices in all major zones. The group has two hi-tech, state of the art manufacturing plants and a world-class testing facility. The group has a network of godowns for storage & packing, providing a competitive edge for catering to needs of the Indian as well as overseas markets. Starting with Semiconductors, the group launched its lines of Diodes, Thysistors, Modules and Bridge Rectifiers and further expanded its operations into manufacturing of cables for Missile Launchers, batteries for wireless systems & Flash Lights for the Indian Air Force. At IRI the motto is always - **Excellence, simplified!**

Typical Applications

- ▶ Alternators/Generators ▶ Wind Mills ▶ Welding Machines ▶ Capacitor Bank Assemblies
- ▶ Battery Chargers / EV Chargers ▶ EOT Cranes ▶ Industrial Furnaces ▶ DC Drives
- ▶ High Voltage Surge Arrestors ▶ Railways – Signaling & Traction ▶ Power Sources
- ▶ Online UPS ▶ APFC Panels ▶ DC Brakes



Product Selection Code

DIODES

12	N	A	120
1	2	3	4

- ▶ 12 : Current Rating
- ▶ N : Normal or Reverse Polarity
- ▶ A : Package Outline
- ▶ 120 : PIV x 10

CAPSULE DIODES (DS)

DS	402	S	T	12
1	2	3	4	5

- ▶ DS : Double Side Cooled Rectifier Diode
- ▶ 402 : Device Code
- ▶ S : Single Operation
- ▶ T : Package Outline
- ▶ 12 : PIV x 100

THYRISTORS (SCR)

T	25	A	120
1	2	3	4

- ▶ T : Thyristor
- ▶ 25 : Current Rating
- ▶ A : Package Outline
- ▶ 120 : PIV x 10

CAPSULE THYRISTORS (DCR)

DCR	802	S	G	1616
1	2	3	4	5

- ▶ DCR : Double Side cooled Capsule Thyristor
- ▶ 804 : Device Code
- ▶ S : Single Operation
- ▶ G : Package Outline
- ▶ 1616 : PIV (1600V)

POWER MODULES (IRKT/IRKH/IRKD)

IR	KT	26	16
1	2	3	4

- ▶ IR : Company Code
- ▶ KT : Thyristor - Thyristor Type
- ▶ KH : Thyristor - Diode Type
- ▶ KD : Diode - Diode Type
- ▶ 26 : Current Rating
- ▶ 16 : PIV x 100

BRIDGE MODULES (MDS)

MDS	75	16
1	2	3

- ▶ MDS : Three Phase Bridge Modules
- ▶ 75 : Current Rating
- ▶ 16 : PIV x 100

WELDING MODULES (PWB)

PWB	80A	40
1	2	3

- ▶ PWB : Three Thyristor Non-isolated Module
- ▶ 80A : Current Rating
- ▶ 40 : PIV x 10

BRIDGE RECTIFIERS (MB / MBT)

MB/MBT	35	16
1	2	3

- ▶ MB : Single Phase Bridge Rectifier
- ▶ MBT : Three Phase Bridge Rectifier
- ▶ 35 : Current Rating
- ▶ 16 : PIV x 100

Product Selection Code

MODULED RECTIFIER (MT)

MT	6	20
1	2	3

- ▶ MT : Three Phase Moulded Rectifier
- ▶ 6 : Current Rating
- ▶ 20 : PIV x 100

MONO BLOCK BRIDGES (BU / TU)

MD	4	BU	10	16
1	2	3	4	5

- ▶ MD : Mono Block
- ▶ 5/6/8 : Package Type
- ▶ BU : Single Phase
- ▶ TU : Three Phase
- ▶ 10 : Current Rating
- ▶ 16 : PIV x 100

WELDING BRIDGE RECTIFIERS (PTB)

PTB	600	06
1	2	3

- ▶ PTB : Three Phase Bridge Rectifier
- ▶ PTB (S) : Single Phase Bridge Rectifier
- ▶ 600 : Current Rating
- ▶ 06 : PIV x 10



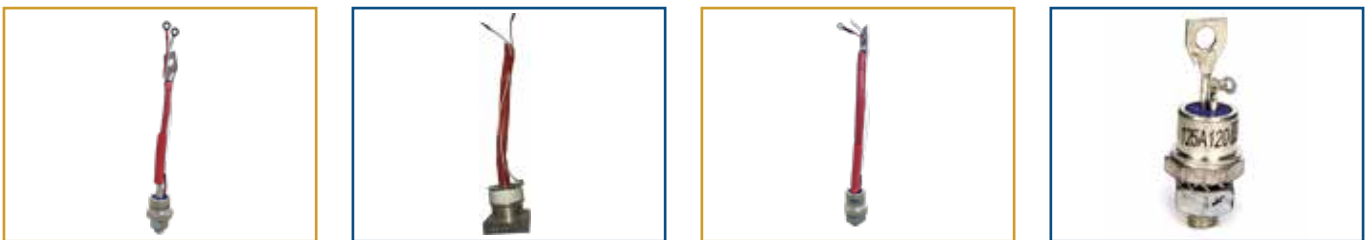
Power Diodes (Stud/ Flat Type)



Power Diodes (Capsule Type)



Phase Control Thyristors (Stud/ Flat Type)



Phase Control Thyristors (Capsule Type)



Inverter Grade Thyristors (Capsule Type)



Power Modules (Thyristor -Thyristor) | (Thyristor -Diode) | (Diode -Diode)



Single Phase & Three Phase Bridge Rectifier Modules (MDQ , MDS & IKD)



Three Thyristor Welding Modules (Non Isolated Base)



Bridge Rectifiers (Single Phase) & (Three Phase Square Type)



Moulded Rectifiers For Generators (Single Phase & Three Phase)



Power Diodes (Stud/ Flat Type)

Device Type	V _{RRM} (V)	I _{F(AV)} IF(AV) (A)	T _C (°C)	V _{FM} @ I peak (V)	I _{FSM} (A)	I ² t A ² Sx10 ³	I _{RRM} (mA)	R _{th(j-c)} (°C/W)	Mounting Torque (Nm)	Heat Sink Rec.	Thread	Package	Outline
12NA/RA	400-1800	12	160	1.30	265	0.351	2	2.0	2	K1	M-6	DO-4	A
16NA/RA	400-1800	16	160	1.20	350	0.612	4	1.6	2	K1	M-6	DO-4	A
25NA/RA	400-1800	25	140	1.35	400	0.800	4	1.5	2	K1	M-5, M-6	DO-4	A
25NB/RB	400-1800	25	140	1.35	400	0.800	4	1.5	2	K2, K3	M-6, M-8, 1/4"	DO-5	B
40NB/RB	400-1800	40	140	1.35	500	1.25	10	1.0	4	K2, K3	M-6, M-8, 1/4"	DO-5	B
PAO40A/PAO40C	800-1800	40	140	1.35	500	1.25	10	1.0	4	RRA	M-8	DO-5	B
70NC/RC	400-1800	70	140	1.35	1200	7.10	10	0.45	4	K3, K4	M-6, M-8	DO-5	C
100NE/RE (Flat Base)	400-1800	100	130	1.50	2300	24.00	15	0.40	10	K4, K5	Flat Base	DO-8	E
100ND/RD	400-1800	100	130	1.50	2300	24.00	15	0.40	10	K4, K5	M-16	DO-8	D
150ND/RD	400-1800	150	130	1.40	3570	64.00	22	0.25	10	K4, K5	M-16	DO-8	D
200NE/RE (Flat Base)	400-1800	200	130	1.35	3650	66.60	22	0.25	10	K4, K5	Flat Base	DO-8	E
200ND/RD	400-1800	200	130	1.35	3650	66.60	22	0.25	10	K4, K5	M-16	DO-8	D
250NF/RF (Flat Base)	400-1800	250	130	1.35	4500	92.50	40	0.18	30	K5	Flat Base	DO-9	F, G
250NG/RG	400-1800	250	130	1.35	4500	92.50	40	0.18	30	K5	M-20	DO-9	F, G
300NF/RF (Flat Base)	400-1800	300	130	1.40	5000	125.00	50	0.12	30	K5	Flat Base	DO-9	F, G
300NG/RG	400-1800	300	130	1.40	5000	125.00	50	0.12	30	K5	M-20	DO-9	F, G
320NF/RF (Flat Base)	400-1800	320	130	1.65	5500	151.00	50	0.12	30	K5	Flat Base	DO-9	F, G
320NG/RG	400-1800	320	130	1.65	5500	151.00	50	0.12	30	K5	M-20	DO-9	F, G
350NF/RF (Flat Base)	400-1800	350	125	1.20	6000	180.00	50	0.12	30	K5	Flat Base	DO-9	F, G
350NG/RG	400-1800	350	125	1.20	6000	180.00	50	0.12	30	K5	M-20	DO-9	F, G
400NG/RG	400-1800	400	120	1.62 *	8250	340.00	50	0.12	50	K5	M-20	DO-9	F, G
400NF/RF (Flat Base)	400-1800	400	120	1.62 *	8250	340.00	50	0.12	50	K5	Flat Base	DO-9	F, G
400NFC/RFC (Ceramic Flat)	400-1800	400	120	1.62 *	8250	340.000	50	0.1	50	ED	FLAT	DO-9	F
410NJ/RJ (Stud)	400-1800	400	120	1.62*	8250	340.000	50	0.1	50	K5	M-20, M-24	DO-9	J
410NU/RU (60x60 Base)	1200-3600	410	120	1.15 *	7000	245.00	50	0.15	15 /Bolt	ED, K5	Flat Base	U	U
570NU/RU (60 x 60 Base)	1200-4300	570	80	1.65 *	12000	725.00	50	0.065	15 /Bolt	ED	Flat Base	U	U
860NU/RU (60 x 60 Base)	1200-1800	860	80	1.65 *	16000	725.00	50	0.065	15 /Bolt	ED	Flat Base	U	U
40029131 (Stud/Ceramic)	2300-2800	280	100	1.30 *	6500	125.000	50	0.1	30	K5	3/4 UNF	DO-9	H
40029132 (Stud/Ceramic)	2300-2800	280	100	1.30 *	6500	125.000	50	0.1	30	K5	3/4 UNF	DO-9	H

* VFM Values observed @ 3.14X IF

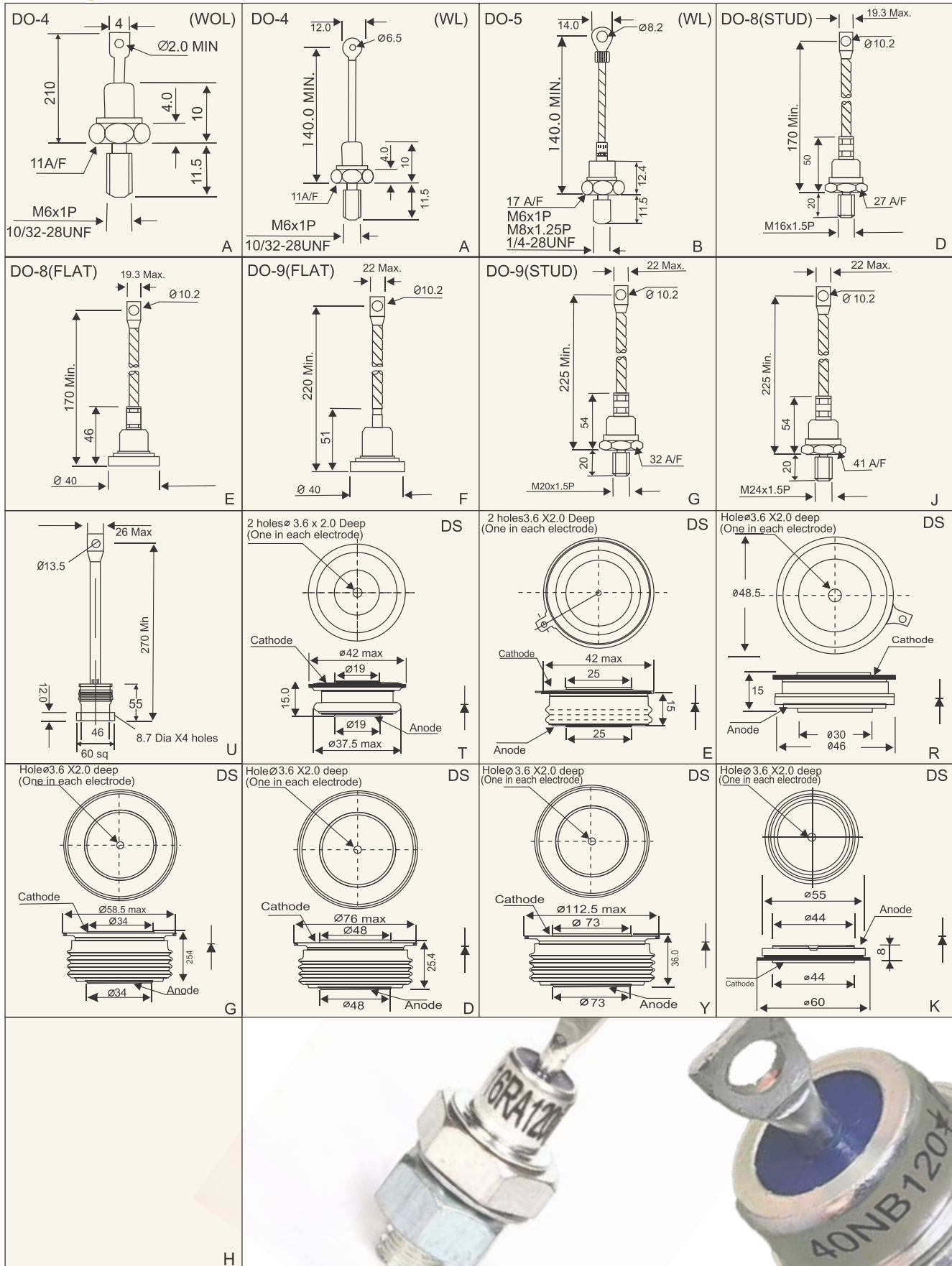
Power Diodes (Capsule Type)

Device Type	V _{RRM} (V)	IF(AV) (A)	T _C (°C)	V _{FM} (V)	I _{FM} (A)	I _{FSM} (A)	I ² t A ² Sx10 ³	I _{RRM} (mA)	T _{vj} (°C)	V _o (V)	R _o (mΩ)	R _{th(j-h)} (°C/W)	Mounting Force (KN)	Outline
DS 402	1200-1800	505	100	1.25	450	4500	101	15	175	0.81	0.840	0.100	4.5	T
D 368	1200-1800	505	100	1.25	450	4500	101	15	175	0.81	0.840	0.100	4.5	T
DS 804	1400-3200	1100	55	1.31	1500	10930	598	50	175	0.94	0.260	0.065	8.0	E
DS 912	3600-5600	600	100	2.10	1200	5600	157	50	150	1.15	1.020	0.0520	12	G
DS 1107	3600-4000	870	100	1.60	1800	12000	720	50	150	0.75	0.440	0.0400	12	G
DS 1104	1600-3000	1315	100	1.30	1800	16000	1280	50	175	0.67	0.310	0.0400	12	G
DS 2007	3600-4000	1225	100	1.60	3400	20000	2000	75	150	0.82	0.29	0.0220	22	D
DS 2004	2400-2800	1960	100	1.30	3400	25000	3120	50	175	0.82	0.160	0.0260	22	D
DS 2001	4300-4800	1800	100	1.18	2500	35000	6125	100	160	0.85	0.016	0.0025	20	D
DS 2002	1400-1800	2320	100	1.18	3400	33000	5440	50	175	0.74	0.088	0.0260	22	D
DS 2106	3600-4000	2850	100	1.15	3000	50000	12500	250	150	0.75	0.118	0.0115	45	Y
DS 6000	400-600	6000	85	1.30	14000	60000	18000	100	180	0.70	0.040	0.0350	30	K
DS 7000	400-600	7100	85	1.20	14000	60000	18000	100	170	0.70	0.024	0.0340	30	K



Package Outline

All dimensions are in mm



Phase Control Thyristors (Stud/ Flat Type)

Device Type	V _{RRM} /V _{DRM} (V)	IT(AV) (A)	T _C (°C)	V _{TM} (V)	I _{TM} (A)	I _{TSM} (A)	di/dt (A/μs)	dv/dt (V/μs)	I _{GT} (mA)	V _{GT} (V)	I _{RRM} /I _{DRM} (mA)	R _{th(j-c)} (°C/W)	Mounting Torque (Nm)	Heat Sink Rec.	Thread	Package	Outline
T25A	1200-1800	25	85	1.70	80	395	200	300	90	3.0	10	0.750	2.5	K1	1/4"-UNF	TO-48	A
T40B	1200-1800	40	94	1.65	125	1050	100	500	250	3.5	15	0.400	4.0	K2,K3	1/4"-UNF	TO-65	B
T50B	1200-1800	50	94	1.60	150	1200	100	500	250	2.5	15	0.400	4.0	K2,K3	1/4"-UNF	TO-65	C
T70C	1200-1800	70	85	1.80	220	1490	150	500	250	3.5	15	0.350	10.0	K3,K4	1/4"-UNF,1/2"-UNF	TO-65	C
T70D	1200-1800	70	85	1.80	220	1490	150	500	250	3.5	15	0.350	10.0	K3,K4	1/4"-UNF,1/2"-UNF	TO-94	D
T110D	1200-1800	110	90	1.52	350	2270	500	500	150	3.0	20	0.195	10.0	K4,K5	1/2"-UNF	TO-94	D
T125D	1200-1800	125	85	1.55	400	2500	100	500	180	3.0	20	0.190	10.0	K4,K5	1/2"-UNF	TO-94	D
T150E	1200-1800	150	90	1.80	470	3000	1000	500	150	3.0	30	0.110	30.0	K4,K5	3/4"-UNF	TO-93	E
T160E	1200-1800	170	85	1.75	500	4650	1000	500	150	3.0	30	0.105	30.0	K4,K5	3/4"-UNF	TO-93	E
T200E	1200-1800	230	85	1.55	600	5700	100	500	150	3.0	30	0.100	30.0	K5	3/4"-UNF	TO-93	E
T251E	1200-1800	250	75	1.90	800	7000	1000	500	200	3.0	50	0.105	40.0	K5,ED	3/4"-UNF	TO-118	F
T300F	1200-1800	300	75	1.65	1000	8000	1000	500	200	3.0	50	0.100	40.0	K5,ED	3/4"-UNF	TO-118	F
T350F	1200-2800	350	75	1.55	1000	9000	1000	500	200	3.0	50	0.090	40.0,10.0/Bolt	K5,ED	3/4"-UNF	TO-118	F
T400U	1200-1800	400	68	1.55	1200	9500	100	1000	200	3.0	50	0.070	10.0/Bolt	ED	SQUARE	U	U
T500U	1200-2000	500	75	1.60	1600	12000	100	500	250	3.0	80	0.070	10.0/Bolt	ED	SQUARE	U	U

Phase Control Thyristors (Capsule Type)

Device Type	V _{RRM} /V _{DRM} (V)	IT(AV) (A)	T _C (°C)	V _{TM} (V)	I _{TM} (A)	I _{TSM} (A)	di/dt (A/μs)	dv/dt (V/μs)	I _{GT} (mA)	V _{GT} (V)	I _{RRM} /I _{DRM} (mA)	T _{VJ} (°C)	R _{th(j-h)} (°C/W)	Mounting Force	Outline
DCR504	1200-1800	456	60	1.75	1000	5500	350	200	150	3.0	30	125	0.0830	4.5	T
DCR604	1400-2100	706	60	1.625	1000	6500	350	1000	150	3.0	30	125	0.0590	8.0	E
DCR807	1600-2900	670	80	2.00	1600	9000	300	300	200	3.5	50	125	0.0420	12.5	G
DCR804	1600-2100	1045	60	1.625	1600	11200	500	1000	200	3.5	50	125	0.0420	12.5	G
DCR1278	3200-4200	1100	60	2.125	2900	16400	100	300	400	4.0	100	125	0.0260	20.0	D
DCR1006	1400-2900	1255	60	1.875	2900	16400	250	300	200	3.5	100	125	0.0260	20.0	D
DCR1277	3200-3600	1259	60	2.025	2900	19000	100	300	400	4.0	150	125	0.0240	20.0	D
DCR1004	1600-2100	1511	60	1.65	2900	21000	500	1000	200	3.5	100	125	0.0260	20.0	D
DCR1279	4400-4800	1088	60	2.40	2900	15000	100	200	400	4.0	150	125	0.0240	20.0	D
DCR1002	1000-1800	1850	60	1.30	2900	26000	500	1000	200	3.5	100	125	0.0210	20.0	D
DCR1476	3400-3800	2500	60	1.875	2900	29000	150	500	400	4.0	250	125	0.0115	43.0	Y
DCR1474	1400-1800	3600	60	1.300	2900	49000	150	1000	400	4.0	250	125	0.0115	43.0	Y

Inverter Grade Thyristors (Capsule Type)

Device Type	V _{RRM} /V _{DRM} (V)	IT(AV) (A)	T _C (°C)	V _{TM} (V)	I _{TM} (A)	I _{TSM} (A)	di/dt (A/μs)	dv/dt (V/μs)	I _{GT} (mA)	V _{GT} (V)	I _{RRM} /I _{DRM} (mA)	T _{VJ} (°C)	T _q (μSec)	R _{th(j-c)} (°C/W)	Mounting Force (KN)	Outline
DCR444	400-1600	280	80	2.00	600	5000	500	200	200	3.0	25	125	20	0.090	5.0	T
DCR855	1200-1600	480	80	2.80	2000	8000	500	200	200	3.0	60	125	40	0.050	15.0	G
DCR944	3000-3400	850	80	2.40	1500	13000	500	500	250	3.0	100	125	50	0.026	22.0	D
DCR915	1200-1400	1080	80	1.75	2000	20000	500	300	200	3.0	60	125	40	0.026	22.0	D
DCR1059	1800-2100	1080	80	1.45	1000	18000	800	200	350	3.0	60	125	40	0.028	22.0	D

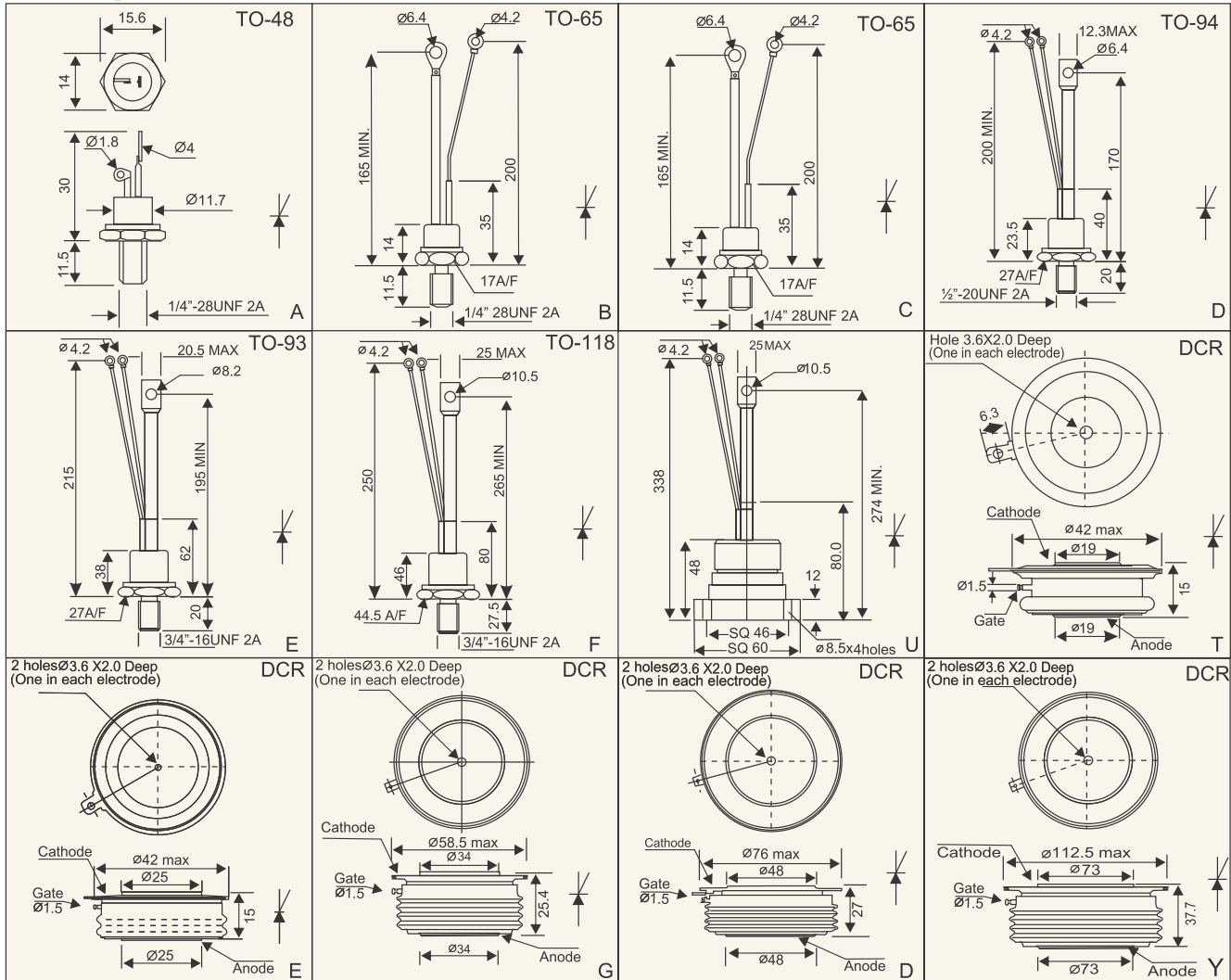
AC Drive Thyristors

Device Type	ITAV	PIV	DIA/HT	OUTLINE
5STP 16F2400	1554A	2400V	47/26	...
5STP 28L3600	3170A	3600V	78/26	...
5STP 28L4200	3170A	4200V	78/26	...
5STP45Q2800	5490A	2800V	100/26	...
5STP33L2800	3740A	2800V	78/26	...
5STP33H1800	3300A	1800V	63/26	...



Package Outline

All dimensions are in mm



Power Modules (Thyristor -Thyristor)

Device Type	V_{RRM}/V_{DRM} (V)	$I_T(AV)$ (A)	T_C (°C)	V_{TM} (V)	I_{TM} (A)	I_{TSM} 25 °C (A)	dv/dt (V/μs)	I_{GT} (mA)	V_{GT} (V)	I_{RRM}/I_{DRM} (mA)	T_{VJ} (°C)	V_{ISOL} (V)	$R_{th(j-c)}$ (°C/W)	Outline
IRKT 26	1200-2200	25	85	1.8	75	550	1000	150	3.0	10	125	3000	0.450	IR-1
IRKT 40	1200-2200	40	85	1.95	200	1000	1000	150	3.0	15	125	3000	0.330	IR-1
IRKT 55	1200-2200	55	85	1.65	200	1500	1000	150	3.0	15	125	3000	0.290	IR-1
IRKT 70	1200-2200	70	85	1.90	300	1600	1000	150	3.0	20	125	3000	0.290	IR-1
IRKT 92	1200-2200	95	85	1.65	200	4000	1000	150	3.0	20	125	3000	0.140	IR-1
IRKT 106	1200-2200	106	85	1.65	300	2250	1000	100	2.0	20	125	3000	0.140	IR-1
IRKT110	3200-3600	110	85	2.45	500	3000	1000	250	2.5	70	125	3000	0.950	IR-2
IRKT130	1200-2200	130	85	1.80	500	4700	1000	150	2.0	40	125	3000	0.019	IR-1/IR-2
IRKT162	1200-2200	156	85	1.60	500	5400	1000	150	2.0	40	125	3000	0.085	IR-2
IRKT162	3200-3600	160	85	2.50	785	4500	1000	150	2.0	50	125	3000	0.055	IR-3
IRKT181	1200-2200	181	85	2.50	500	5400	1000	150	2.0	40	125	3000	0.085	IR-2
IRKT 250	1200-2200	250	85	1.40	750	9000	1000	200	2.0	85	125	3000	0.070	IR-3
IRKT 280	2200-2400	280	85	1.4	750	9000	1000	200	2.0	85	125	3000	0.07	IR-3
IRKT 330	1200-2200	305	85	1.40	750	9500	1000	200	3.0	85	125	3000	0.055	IR-3
IRKT 380	1200-2200	380	85	1.4	750	9500	1000	200	3.0	85	125	3000	0.055	IR-3
IRKT 500	1200-2200	540	85	1.50	1700	17000	1000	200	3.0	100	125	3000	0.055	IR-4
IRKT570	1200-2200	570	85	1.44	1700	19000	1000	200	3.0	100	125	3000	0.034	IR-4
IRKT 600	2200-2400	600	85	1.44	1785	21000	1000	300	2.5	250	125	3000	0.025	IR-4A

Power Modules (Thyristor -Diode)

Device Type	V_{RRM}/V_{DRM} (V)	V_{RRM}/V_{DRM} (A)	T_C (°C)	V_{TM} (V)	I_{TM} (A)	I_{TSM} (A)	dv/dt (V/μs)	I_{GT} (mA)	V_{GT} (V)	I_{RRM}/I_{DRM} (mA)	T_{VJ} (°C)	V_{ISOL} (V)	$R_{th(j-c)}$ (°C/W)	Outline
IRKH 26	1200-2200	25	85	1.8	75	550	1000	150	3.0	10	125	3000	0.450	IR-1
IRKH 40	1200-2200	40	85	1.95	200	1000	1000	150	3.0	15	125	3000	0.330	IR-1
IRKH 55	1200-2200	55	85	1.65	200	1500	1000	150	3.0	15	125	3000	0.290	IR-1
IRKH 70	1200-2200	70	85	1.90	300	1600	1000	150	3.0	20	125	3000	0.290	IR-1
IRKH 92	1200-2200	95	85	1.65	200	4000	1000	150	3.0	20	125	3000	0.140	IR-1
IRKH 106	1200-2200	106	85	1.65	300	2250	1000	100	2.0	20	125	3000	0.140	IR-1
IRKH 130	1200-2200	130	85	1.80	500	4700	1000	150	2.0	40	125	3000	0.019	IR-1/IR-2
IRKH 162	1200-2200	156	85	1.60	500	5400	1000	150	2.0	40	125	3000	0.085	IR-2
IRKH 250	1200-2200	250	85	1.40	750	9000	1000	200	2.0	85	125	3000	0.07	IR-3
IRKH 330	1200-2200	305	85	1.40	750	9500	1000	200	3.0	85	125	3000	0.055	IR-3
IRKH 500	1200-2200	540	85	1.50	750	17000	1000	200	3.0	100	125	3000	0.055	IR-4

Power Modules (Diode -Diode)

Device Type	V_{RRM} (V)	$I_F(AV)$ (A)	T_C (°C)	V_F (V)	I_F (A)	I_{FSM} (A)	I_{RRM} (mA)	T_{VJ} (°C)	V_{ISOL} (V)	$R_{th(j-c)}$ (°C/W)	Outline
IRKD 26	1200-2200	31	85	1.35	75	550	3	125	3000	0.500	IR-1
IRKD 40	1200-2200	47	85	1.95	250	700	3	125	3000	0.300	IR-1
IRKD 55	1200-2200	60	100	1.50	150	1600	5	125	3000	0.500	IR-1
IRKD 70	1200-2200	82	85	1.55	300	2000	5	125	3000	0.200	IR-1
IRKD 92	1200-2200	100	100	1.45	300	2000	5	125	3000	0.350	IR-1
IRKD 106	1200-2200	100	85	1.35	300	2500	5	125	3000	0.175	IR-1
IRKD 125	1200-2200	125	85	1.50	300	6000	5	125	3000	0.175	IR-1
IRKD 162	1200-2200	195	85	1.50	500	6000	9	125	3000	0.090	IR-2
IRKD 250	1200-2200	260	85	1.25	750	11000	10	125	3000	0.070	IR-3
IRKD 330	1200-2200	330	85	1.25	1000	11000	10	125	3000	0.055	IR-3
IRKD 380	1200-2200	380	85	1.25	1999	11999	10	125	3000	0.025	IR-3
IRKD 500	1200-2200	500	100	1.25	2000	25000	30	125	3000	0.034	IR-4

IRKT/IRKH/IRKD

IRKT/IRKH/IRKD

IRKT/IRKH/IRKD

IRKT/IRKH/IRKD

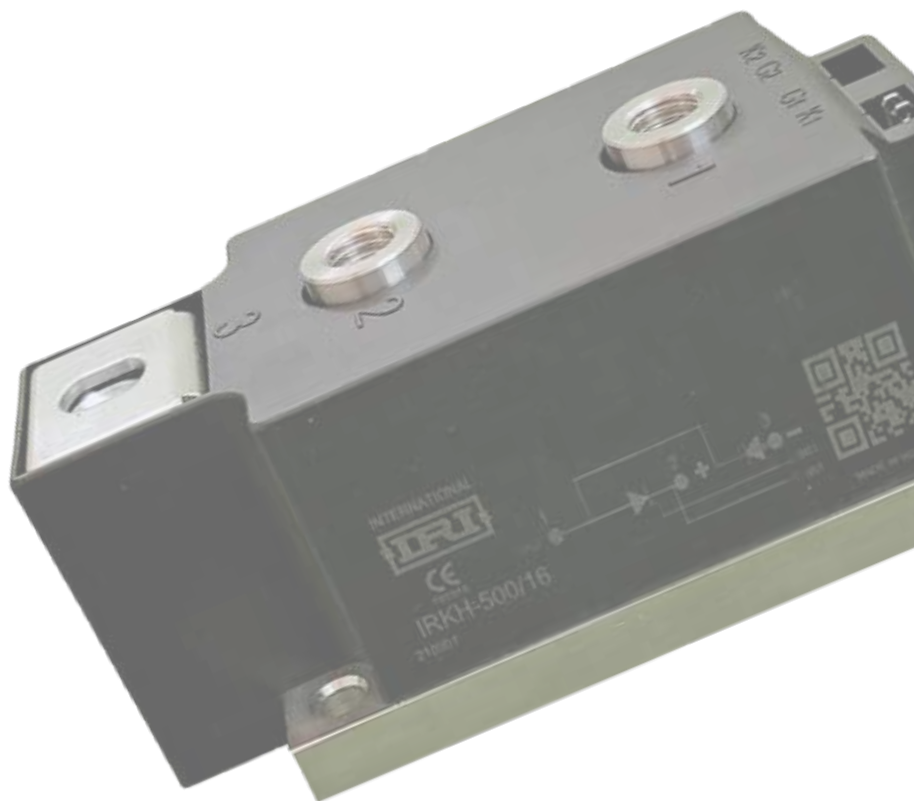
IR-1

IR-2

IR-3

IR-4

IR-4A



Single Phase & Three Phase Bridge Rectifier Modules (MDQ , MDS & IKD)

Device Type	V _{RRM} (V)	IF(AV) (A)	T _C (°C)	V _{FM} (V)	I _{FM} (I)	I _{FSM} (A)	I _{RRM} (mA)	T _{VJ} (°C)	R _{th(j-c)} (°C/W)	Outline
MDQ 75	1200-1600	75	150	1.25	75	600	8	125	0.24	IR-5
MDQ 100	1200-1600	100	150	1.30	100	1000	8	125	0.20	IR-5
MDQ 150(08-5)	1200-1600	150	102	1.2	150	1500	10	125	0.14	IR-5
MDQ 200	1200-1600	200	100	1.35	200	2100	15	125	0.10	IR-6
MDQ 300	1200-1600	300	100	1.35	300	2700	20	125	0.10	IR-7
MDS 75	1200-1600	75	150	1.25	75	1000	4	125	0.24	IR-8
MDS 100	1200-1600	100	150	1.30	100	1200	8	125	0.20	IR-8
MDS 100(S)	1200-1600	100	100	1.20	100	1000	15	125	0.20	IR-9
MDS 100 (R)	1200-1600	100	100	1.20	100	1000	15	125	0.20	IR-10
MDS 100 (SS)	1200-1600	100	100	1.20	100	1000	15	125	0.20	IR-11
MDS 150	1200-1600	150	102	1.20	150	1500	10	125	0.14	IR-8
MDS 200	1200-1600	200	100	1.35	200	2100	15	125	0.10	IR-12
MDS 300	1200-1600	300	100	1.35	300	2700	20	125	0.10	IR-13
IKD 83	800-1800	83	150	1.45	100	1200	8	125	0.20	IR-14

Three Thyristor Welding Modules (Non Isolated Base)

Device Type	V _{RRM} /V _{DRM} (V)	IT(AV) (A)	T _C (°C)	V _{TM} (V) @ p x I _{F(AV)}	I _{TSM} (A)	I ² _t A ² s x 10 ³	dv/dt (V/μs)	I _{GT} (mA)	V _{GT} (V)	I _{RRM} /I _{DRM} (mA)	T _{VJ} (°C)	R _{th(j-c)} (°C/W)	Outline
PWB 80 A	400-600	80	116	1.20	2500	26	200	150	2.0	12	150	0.35	IR-15
PWB 100 A	400-600	100	114	1.20	3300	51	200	150	2.0	15	150	0.30	IR-15
PWB 130 A	400-600	130	112	1.28	3500	51	200	150	2.0	30	150	0.20	IR-15
PWB 200 A	400-600	200	121	1.20	6000	150	200	150	2.0	60	150	0.12	IR-16
PWA 100 A	400-600	100	126	1.2	3300	140	200	150	2.0	15	150	0.30	IR-17
PWA 150A	400-600	150	119	1.2	3500	150	200	150	2.0	60	150	0.15	IR-18

Bridge Rectifiers (Single Phase)

Device Type	V _{RRM} (V)	IT(AV) (A)	T _C (°C)	V _{FM} (V)	I _{FM} (I)	I _{FSM} (A)	I ² _t A ² s	I _{RRM} (mA)	T _{VJ} (°C)	R _{th(j-c)} (°C/W)	Package	Outline
MB 25	1000-1600	25	85	1.17	25	350	600	2.0	125	1.2	ALU.	IR-19
MB 25 (HEAVY)	1000-1600	25	85	1.17	25	350	600	2.0	125	1.2	HEAVY	IR-20
MB 35	1000-1600	35	85	1.17	35	370	680	5.0	125	1.2	ALU	IR-19
MB 35 (HEAVY)	1000-1600	35	85	1.17	35	370	680	5.0	125	1.2	HEAVY	IR-20
MB 35 (BLACK)	1000-1600	35	85	1.17	35	370	680	5.0	125	1.2	BLACK	IR-21
MBG 35	1000-1600	35	85	1.17	35	500	680	5.0	125	1.2	GOLD TYPE	IR-21
MB 35 (P)	100-1600	35	85	1.17	35	370	680	5.0	125	1.2	BLACK THIN BASE	IR-22
MB 35W	1000-1600	35	85	1.17	35	370	680	5.0	125	1.2	WIRE TYPE	IR-23
MB 50	1000-1600	50	85	1.17	50	500	1250	7.0	125	1.1	ALU	IR-19
MBG 50	1000-1600	50	85	1.17	50	500	1250	7.0	125	1.1	GOLD TYPE	IR-21

Bridge Rectifiers (Three Phase Square Type)

Device Type	V _{RRM} (V)	IT(AV) (A)	T _C (°C)	V _{FM} (V)	I _{FM} (I)	I _{FSM} (A)	I ² _t A ² s	I _{RRM} (mA)	T _{VJ} (°C)	R _{th(j-c)} (°C/W)	Outline
MBT 35 (C)	1000-1600	35	78	1.20	20	450	840	5.0	150	0.9	IR-24
MBT 35 (S)	1000-1600	50	80	1.20	25	500	1000	7.0	150	0.5	IR-24
MBT 50 (G)	1000-1600	50	80	1.20	25	500	1000	7.0	150	0.5	IR-24



Mono Block Bridge Rectifiers (Single Phase)



Mono Block Bridge Rectifiers (Three Phase)



Welding Bridge Rectifiers (Button Diode Type)



Field Failure Relay (FFR) & Solid State Rectifier (SSR) & Ultra Fast Diode (Inverter Welding)



Generator Dioees & Rotating Assemblies (RRA)



TYPICAL APPLICATIONS

- ▶ Alternators/Generators
- ▶ Wind Mills
- ▶ Welding Machines
- ▶ Battery Chargers/EV Chargers
- ▶ EOT Cranes
- ▶ Capacitor Bank Assemblies
- ▶ Industrial Furnaces
- ▶ DC Drives
- ▶ High Voltage Surge Arrestors
- ▶ Railways – Signaling & Traction
- ▶ Power Sources
- ▶ Online UPS
- ▶ APFC Panels
- ▶ DC Brakes

Moulded Rectifiers For Generators (Single Phase & Three Phase)

Device Type	V _{RRM} (V)	I _{T(AV)} (A)	T _C (°C)	I _{FSM} (A)	I ² _t A ² s	I _{RRM} (mA)	T _{V2} (°C)	Outline
MB-16 (RC)	1000	16	55	230	288	1.0	125	IR-25
MT-6	2000	6	55	100	50	0.5	125	IR-26
MT-10 (MOV)	2000	10	55	150	113	0.5	125	IR-26
MT-16 (MOV)	2000	16	55	230	288	1.0	125	IR-26
MT-25	2000	25	55					IR-27

Mono Block Bridge Rectifiers (Single Phase)

Device Type	V _{RRM} (V)	I _{F(AV)} (A)	T _J /T _C (°C)	V _F (V)	I _F (A)	I _{FSM} (A)	I _{RRM} (A)	I ² _t A ² s	T _{V2} (°C)	R _{th(j-a)} (°C/W)	Outline
MD5BU10	1600-1800	10	25	1.30	30	180	5	160	150	4.0	IR-28
MD5BU15	1600-1800	15	25	1.30	45	300	5	450	150	4.0	IR-28
MD6BU25	1600-1800	29	45	2.2	150	370	5	680	150	0.8	IR-29
MD6BU50	1600-1800	47	35	1.6	150	750	10	2800	150	0.71	IR-29
MD6BU60	1600-1800	60	110	1.6	150	750	10	2800	150	0.27	IR-29
MD8BU60	1600-1800	67	85	1.6	150	1000	10	5000	125	0.21	IR-30
MD8BU100	1600-1800	110	85	1.35	150	1100	10	6600	125	0.19	IR-30

Mono Block Bridge Rectifiers (Three Phase)

Device Type	V _{RRM} (V)	I _{F(AV)} (A)	T _J /T _C (°C)	V _F (V)	I _F (A)	I _{FSM} (A)	I _{RRM} (A)	I ² _t A ² s	T _{V2} (°C)	R _{th(j-a)} (°C/W)	Outline
MD5TU10	1600-1800	15	25	1.75	30	180	5	160	150	3.0	IR-31
MD5TU15	1600-1800	19	25	1.3	45	300	5	450	150	3.0	IR-31
MD6TU25	1600-1800	31	45	2.2	150	370	5	680	150	0.8	IR-32
MD6TU50	1600-1800	60	35	1.6	150	750	10	2800	150	0.51	IR-32
MD6TU60	1600-1800	60	110	1.8	150	750	10	2800	150	0.25	IR-32
MD8TU60	1600-1800	92	85	1.6	150	1000	10	5000	125	0.21	IR-33
MD8TU100	1600-1800	100	100	1.35	150	1100	10	6600	125	0.19	IR-33

Welding Bridge Rectifiers (Button Diode Type)

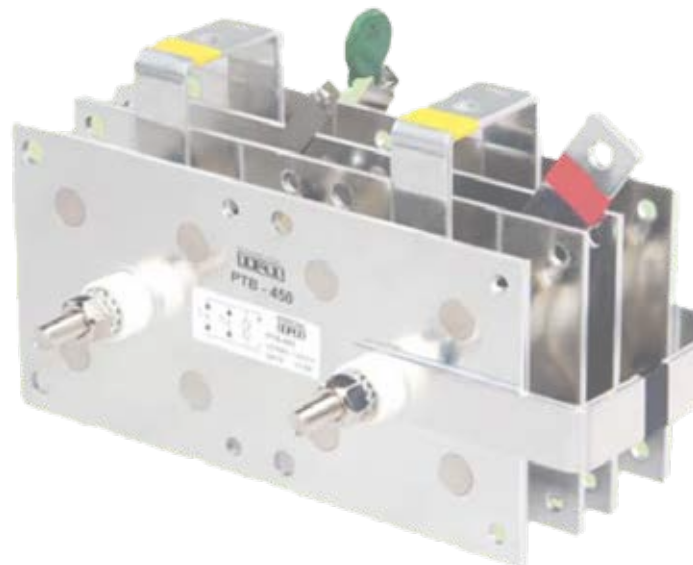
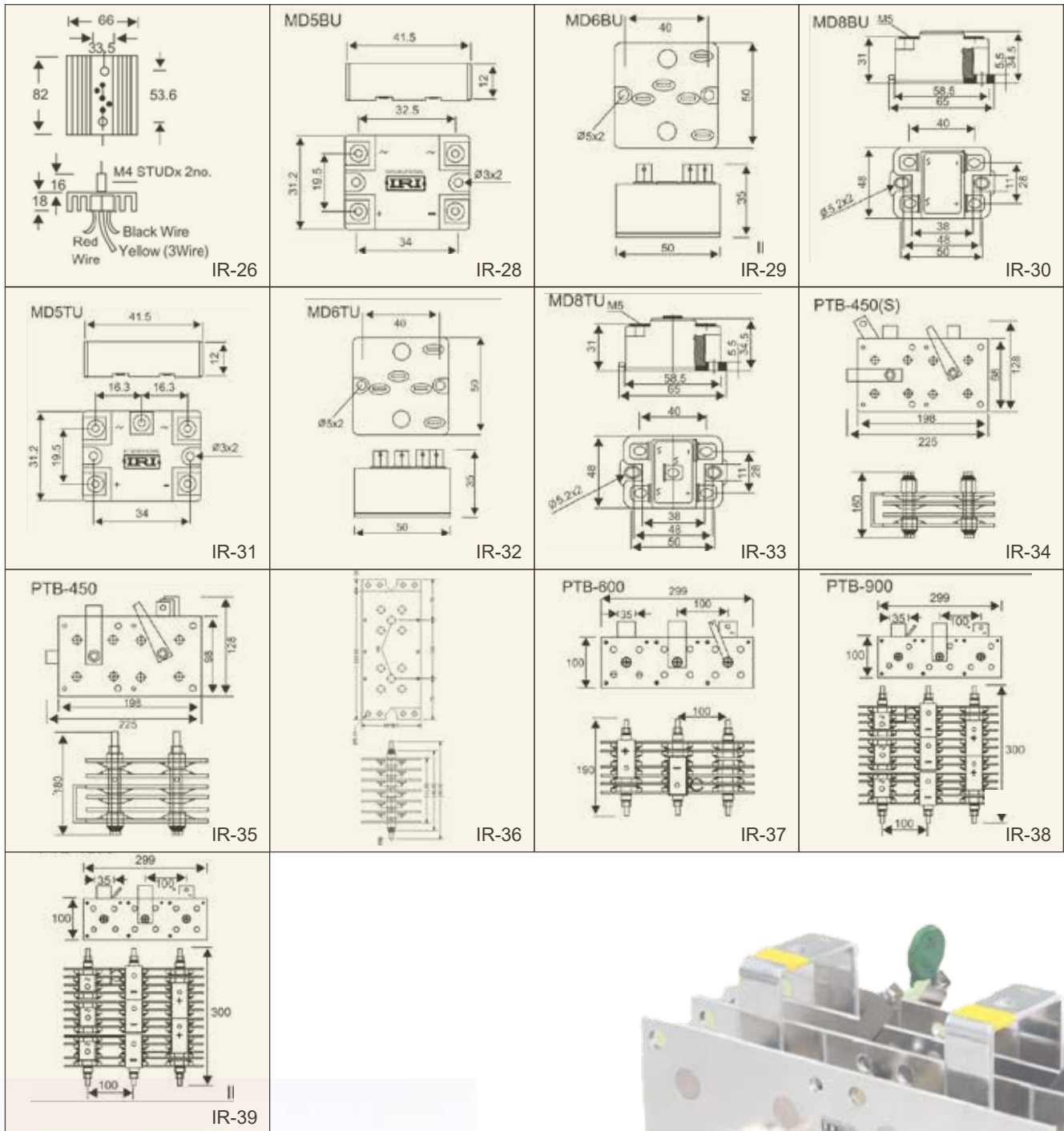
Device Type	V _{RRM} (V)	Phase	I _{T(AV)} (A)	T _C (°C)	I _{RRM} (mA)	V _{FM} (V)	I _{FM} (A)	I _{FSM} (A)	Duty Cycle @ 60% (A)	Wind Speed (M/S)	Outline
PTB-300(S)	400-600	1-Φ	300	100	18						IR-34
PTB-450(S)	400-600	1-Φ	450	100	20	1.3	450	3600	270	3.0	IR-34
PTB-450 (H) [BUS BAR]	400-600	3-Φ	450	100	20	1.3	450	3600	270	3	IR-35
PTB-450 (D)	400-600	3-Φ	450	100	20	1.3	450	3600	270	3.0	IR-36
PTB-600	400-600	3-Φ	600	100	22	1.3	600	4500	360	3.0	IR-37
PTB-900	400-600	3-Φ	900	100	25	1.3	900	5500	540	3.0	IR-38
PTB-1200	400-600	3-Φ	1200	100	30	1.3	1200	6500	720	3.0	IR-39

Single Phase Half Control Bridge Rectifiers

Device Type	V _{RRM} (V)	I _{F (AV)} (A)	V _{FM} (V)	I _{FSM} (A)	I ² _t A ² s	R _{thjc} (°C/W)
BKW4516	1200-1600	45	1.30	470	1100	0.25
BKW6116	1200-1600	60	1.40	600	1800	0.2
BKW7516	1200-1600	75	1.45	1100	6100	0.15



Package Outline



Field Failure Relay (FFR)

Current Ranges (A)	Pick-up Current (+5%)	Drop-out current (<)	Size (mm)	Outline
0.1 to 0.5	80mA	50mA	95 X 35	IR-40
0.2 to 0.7	180mA	100mA	95 X 35	IR-40
0.7 to 1	600mA	350mA	95 X 35	IR-40
1.0 to 2.0	850mA	500mA	95 X 35	IR-40
2.0 to 4.0	1.8A	1.0 A	95 X 35	IR-40
4.0 to 6.0	3.6A	2.0 A	95 X 35	IR-40
6.0 to 10	5.0A	2.5 A	95 X 35	IR-40

Solid State Rectifier (SSR)

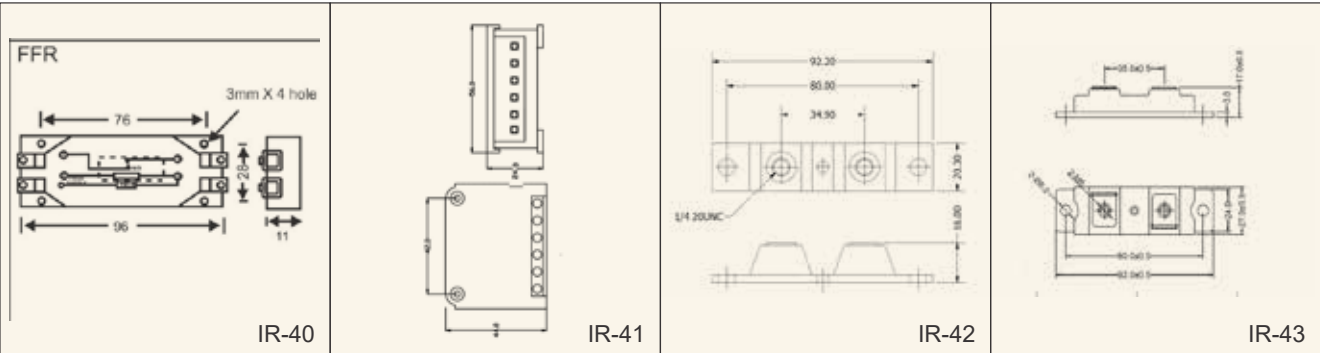
Current Ranges (A)	Input (VAC) (+5%)	Output (VAC) (<)	Size (mm)	Outline
1.5	415-440	190	45 X 55	IR-41
2.0	415-440	190	45 X 55	IR-41
3.0	415-440	190	45 X 55	IR-41
4.0	415-440	190	45 X 55	IR-41
2.0	250	110	45 X 55	IR-41
3.0	230	190	45 X 55	IR-41



Ultra Fast Diode (Inverter Welding)

Device Type	V _{RRM} (V)	I _{F(AV)} (A)	IE (°C)	IF RMS	IFSM	I t	R _{thjc}	Outline
MUR 20060CT	600	200						IR-42
		(2X100)	100	140	1650	9112	0.21	
MUR 30060CT	600	300						IR-43
		(2X150)	110	210	1960	16200	0.1	
MUR 40060CT	600	400						IR-43
		(2X200)						

Package Outline



FURNACE THYRISTORS & DIODES

Inverter Thyristors

Device Type	Equivalent	IAV	PIV	DIA/HT	Tq / us)
C770L	3176	2100A	2100V	73/36	50
R2619	R600	2619A	2100V	73/36	50
C712L	1133	1185A	2100V	47/27	40
R1275	R395	1293A	2100V	47/27	40
C458PD	R1178	1180A	1400V	47/27	25
C648PB	R0964	964A	1200V	34/27	25
C448PB	R0809	880A	1200V	34/27	10
R0633	R0633YS12	633	1200V	25/15	5

Converter Thyristors

Device Type	Equivalent	IAV	PIV	DIA/HT
C781L	3182/N980	2500A	2100V	73/26
C451L	DCR1004SD21	1547A	2100V	47/27
N1467	N490	1467A	2600V	47/27
C702	N1156/DCR1278	1159A	4200V	47/27
N1661	N630	1663A	4200V	63/36
C440L	DCR804SG21	910A	2100V	34/27
C431	DCR604SE16	600A	1600V	25/15

Fast/ Inverter Diodes

Device Type	Equivalent	IAV	PIV	DIA/HT
3178	SM18CXC924/M149NC180	1496A	1800V	47/27
A696PN	SM18CXC724/M1022LC180	1000A	1800V	34/27

Discharge Diode

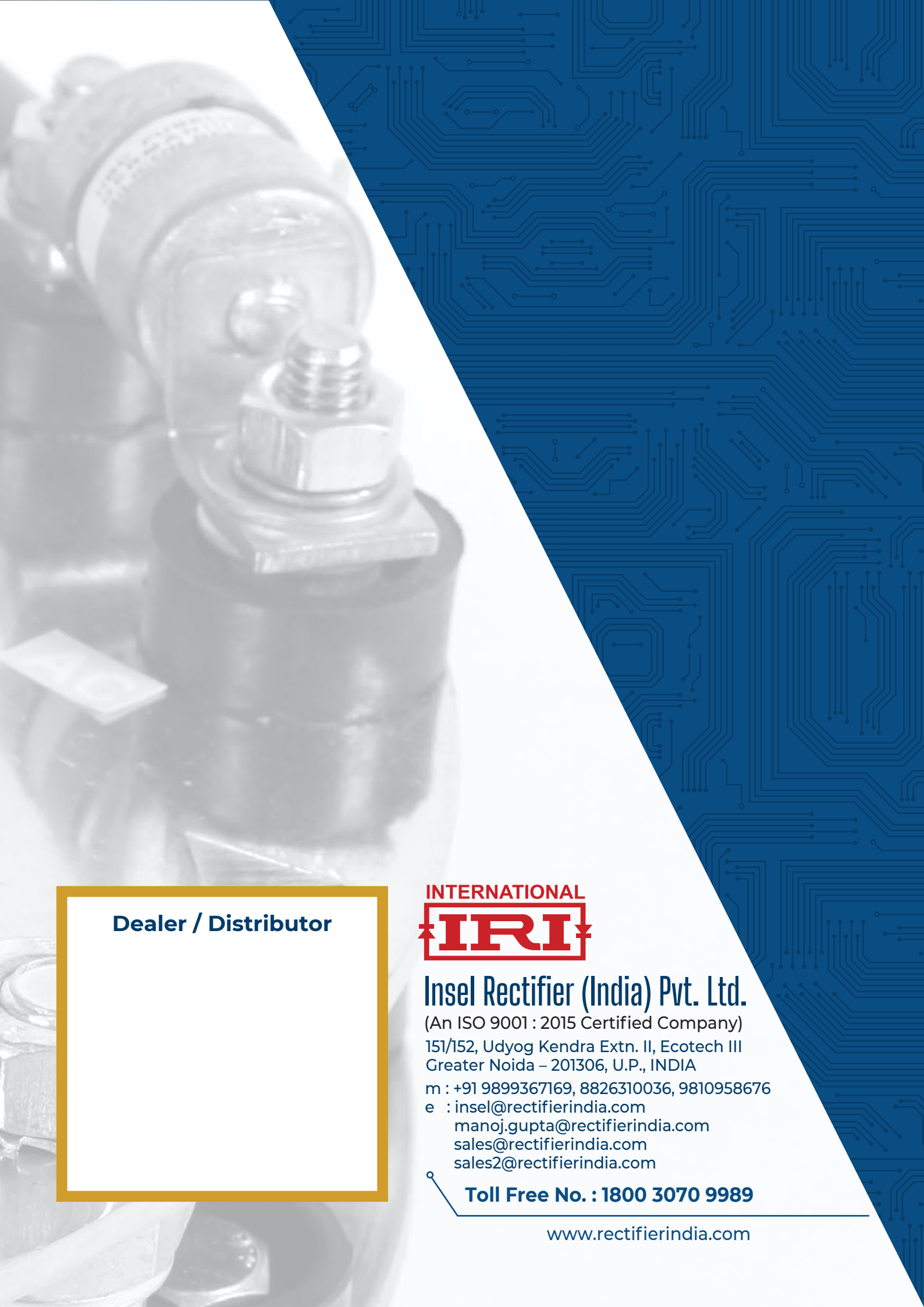
Device Type	Equivalent	IAV	PIV	DIA/HT
A740PN	2181/W2416NC200	2400A	2000V	47/27
160ND/RD	D180, D181	160A	1800V	3/8" STUD
D860UF18A/18C		860A	1800V	U TYPE

Generator Diodes & Rotating Assemblies (RRA)

Device Type	Application	Thread	Package/Type
R25NA/RA120	Stamford	10/32" UNF	DO4, WOL
R25NA/RA120	Stamford	10/32" UNF	DO4, WL
TP40N/R	Kirloskar Green	M-6	DO4, WOL
R40NB/RB120	NGEF	1/4"	DO5, WOL
R40NB/RB120	Crompton	M-6	DO5, WOL
R40NB/RB160	KEC	M-8	DO5, WOL
TP40N/R	Kirloskar Green	M-6	DO5, WL
82PF/82PFR	LEROY SOMER		
PAO40A/40C	KEC	M-8	DO5, WL
K50N/R16	KEC	M-8	DO5, WOL
CG50N/R	Crompton	M-8	DO5, WOL
R70NC/RC120	NGEF	1/4"	DO5, WOL
R70NC/RC120	Crompton	M-6	DO5, WOL
R70NC/RC120(Long Lead)	AVKC	M-8	DO5, WL
PAO70A/70C	KEC	M-8	DO5, WL
R.RA	KEC SMALL		
R.RA	KEC BIG		WITH FUSE
R.RA	KEC BIG		WITHOUT FUSE
R.RA	KEC New Type	4AB250	70AMPS.
R.RA	Triangle KEC Type		K50N
R.RA	Crompton Type		125-500 KVA
R.RA	Kirloskar Green		TP25
R.RA	Kirloskar Green		TP40
R.RA	Stamford Type		UC FRAME, 125KVA
R.RA	Stamford Type		UC FRAME, 600KVA
R.RA	MXV/MXG55-12		



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Dealer / Distributor



Insel Rectifier (India) Pvt. Ltd.

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151/152, Udyog Kendra Extn. II, Ecotech III
Greater Noida – 201306, U.P., INDIA

m : +91 9899367169, 8826310036, 9810958676

e : insel@rectifierindia.com

manoj.gupta@rectifierindia.com

sales@rectifierindia.com

sales2@rectifierindia.com

Toll Free No. : 1800 3070 9989

www.rectifierindia.com