

**SEMICONDUCTOR
DESIGN GUIDE**



Hind Rectifiers Ltd
ISO 9001-2000

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Rectifier Diodes

Top Hat Type											
Type	V_{RRM} x100 V	$I_{F(av)} / T_c$	I_{rms}	I_{FSM} 10 mS T_{jmax}	I^2t 10mS	V_{pk}/I_{pk} at T_{jmax}	V_o	r	R_{th} (j-c) (c-h)	T_{jmax}	Fig.No
	[V]	[A] [°C]	[A]	[A]	[kA²sec]	[V] [A]	[V]	[mΩ]	[°C/W]	[°C]	
SXHN6	2 - 15	6 130	9.5	200	0.200	1.30 20	0.70	16.50	4.500 0.60	180	TD1
SXHN14		12 130	19	250	0.312	1.50 38	0.77	11.00	2.100 0.60		TD1
SXHN16		16 130	25	300	0.450	1.55 50	0.82	8.30	1.500 0.25		TD1
SXHN20		20 130	32	350	0.612	1.50 63	0.90	10.00	1.300 0.25		TD1
SXBN26		25 130	40	375	0.703	1.45 78	0.80	10.00	1.100 0.25		TD2
SXHN26		25 130		400	0.800	1.25 78	0.80	4.25	1.000 0.25		TD3
SXHN41		40 130	63	500	1.250	1.25 125	0.72	3.60	0.750 0.25		TD3
SXHN55		55 125	86	800	3.200	1.35 172	0.72	2.75	0.500 0.15		TD3
SXBR71		70 125	110	1000	5.000	1.35 220	0.77	2.00	0.400 0.15		TD3
SXHNS100		100 130	160	2400	28.800	1.30 300	0.80	1.22	0.360 0.05		TD4
SXHNS150		150 130	200	3600	64.800	1.25 470	0.75	0.90	0.240 0.05		TD4
SXHBN150		150 130	200	3600	64.800	1.25 470	0.75	0.90	0.240 0.05		TD5
SXHNS201		200 130	300	4000	80.000	1.30 630	0.70	0.60	0.240 0.05		TD4
SXHBN200		200 130	300	4000	80.000	1.30 630	0.70	0.60	0.240 0.05		TD5
SXHNS250		250 130	392	5000	125.000	1.30 785	0.75	0.56	0.180 0.05		TD7
SXHN250		250 130	392	5000	125.000	1.30 785	0.75	0.56	0.180 0.05		TD6
SXHN300		300 130	471	5200	1303.000	1.20 1000	0.72	0.40	0.160 0.05		TD6
SXHNS320		320 125	500	5500	151.000	1.40 1000	0.77	0.57	0.140 0.05		TD7
SXHN350		350 125	430	6000	180.000	1.15 1050	0.75	0.36	0.140 0.05		TD6
SXHFN350		350 125	430	6000	180.000	1.15 1050	0.75	0.36	0.120 0.02		TD8
SXHN400		400 125	628	7000	245.000	1.12 1500	0.75	0.35	0.120 0.05		TD6
SXHFN400		400 125	628	7000	245.000	1.12 1500	0.75	0.35	0.110 0.02		TD8
SXHN550	2 - 18	550 100	865	12500	781.000	1.65 1500	0.85	0.50	0.072 0.02	160	TD9
SXHN680	2 - 30	680 90	1070	14000	980.000	1.55 2100	0.80	0.33	0.070 0.02		TD9
SXHN860	2 - 20	860 100	1350	16000	1280.000	1.48 2500	0.74	0.20	0.070 0.20		TD9

* for further details refer individual datasheets @ www.hirect.com

TD1	TD2	TD3
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Rectifier Diodes

TD4 19 10 10 Ø10.5 185±5 65 27 A/F 21 M16x1.5P ROLLED THREAD R N	TD5 19 10.5 10 Ø10.5 177±5 65 Ø38 Ø40 R N
TD6 22 1.1 1.1 Ø10.5 240±5 85.5 Ø38 Ø40 R N	TD7 22 11 11 Ø10.5 240±5 80±5 32 A/F 20±0.5 M20x1.5P ROLLED THREAD R N
TD8 22 11 11 Ø11 245±5 9.5x4 HOLES 46SQ 60SQ 25 27 Ø11 R N	TD9 26 18 14 Ø11 260±10 8.6 x 04 HOLES 46SQ 61SQ R N

Rectifier Diodes

Capsules												
Type	V_{RRM} x100 V	$I_{f(av)} / T_c$	I_{frms}	I_{FSM} 10 mS T_{jmax}	I^2t	V_{pk} / I_{pk} at T_{jmax}	V_o	r	R_{th} (j-c) (c-h)	T_{jmax}	Fig No	
	[V]	[A] [°C]	[A]	[A]	[kA²sec]	[V] [A]	[V]	[mΩ]	[°C/W]	[°C]		
SHXC450	2 - 18	450 95	700	4900	120	1.52 1500	0.70	0.700	0.1120 0.015	170	CD1	
SHXC540		540 91	850	6000	180	1.85 1600	0.75	0.650	0.0900 0.015		CD1	
SHXC760	2 - 6	760 104	1200	8500	361	1.39 2000	0.70	0.300	0.0790 0.015	180	CD1	
SHXC1130	2 - 18	1130 65	1775	11000	605	1.83 3000	0.78	0.350	0.0450 0.015	160	CD2	
SHXC1850		1850 63	2900	20500	2100	1.44 3000	0.74	0.200	0.0380 0.005		CD3	
SHXC2230	2 - 6	2230 109	3500	25000	3125	1.10 3000	0.70	0.100	0.0255 0.005	180	CD3	
SHXXC2300	2 - 44	2300 71	3600	26000	3380	1.70 3000	0.88	0.245	0.0170 0.005	160	CD4	
SHXXC2500	2 - 26	2500 90	3925	26000	3380	1.30 3000	0.87	0.127	0.0220 0.004	150	CD5	
SHXXC6400	2 - 6	6400 85	10048	55000	15125	0.88 4500	0.70	0.040	0.0170 0.005	190	CD6	

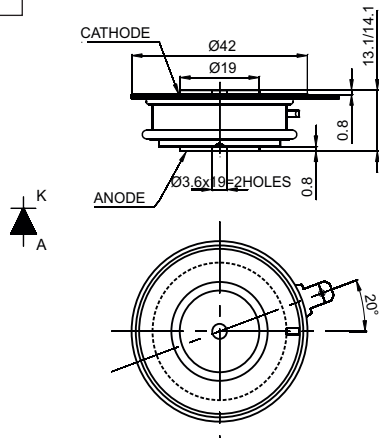
Fast Recovery Diode												
Type	V_{RRM} x100	$I_{f(av)} / T_c$	I_{frms}	I_{FSM} 10 mS T_{jmax}	I^2t	V_{pk} / I_{pk} at T_{jmax}	V_o	r	R_{th} (j-c) (c-h)	T_{jmax}	Fig No	
	[V]	[A] [°C]	[A]	[A]	[kA²sec]	[V] [A]	[V]	[mΩ]	[°C/W]	[°C]		
HD368SXX	2 - 14	368 100	730	5200	135.20	2.25 1400	1.00	0.80	0.08 0.015	150	CD1	

* for further details refer individual datasheets @ www.hirect.com

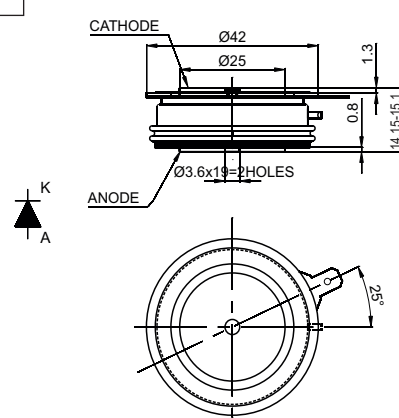


Rectifier Diodes

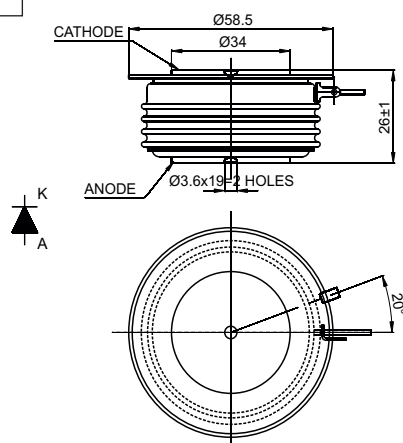
CD1



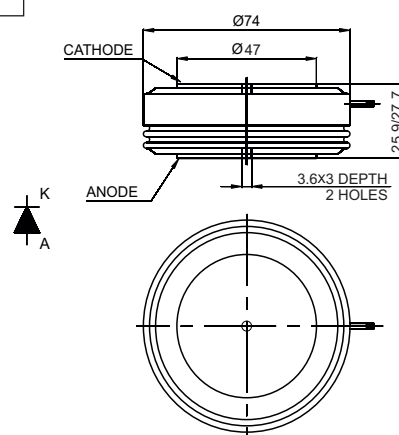
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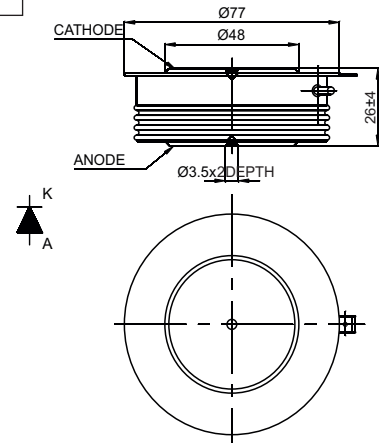
CD3



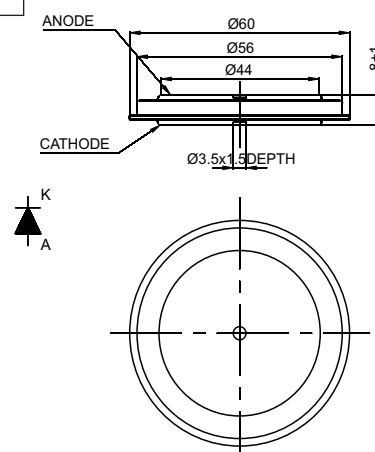
CD4



CD5



CD6



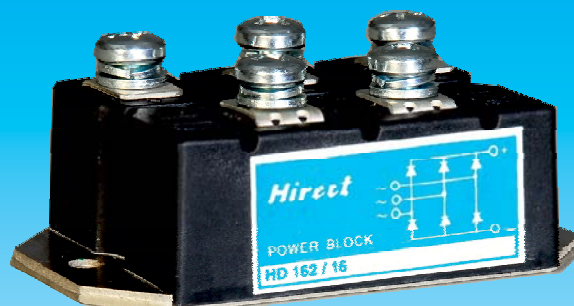
Diode Modules

Diode- Diode Modules - Isolated base												
Type	$V_{RRM} \times 100$	$I_{f(av)}/T_c$	I_{frms}	$I_{frms}^{10ms} @ T_{jmax}$	I^2t	V_{pk}/I_{pk} at 25°C	V_o	r	$R_{th(J-C)}/chip$	$R_{th(C-H)}/module$	T_{jmax}	Fig No
	[V]	[A] [°C]	[A]	[kA]	[kA ² sec]	[V] [A]	[V]	[mΩ]	[°C/W]	[°C/W]	[°C]	
HDD25N	2 - 18	25 100	40	0.50	1.25	1.40 80	0.85	6.00	1.00	0.10	150	DD1
HDD56N		55 100	85	1.15	9.80	1.40 175	0.85	4.00	0.50	0.10		DD1
HDD95N		95 100	150	2.10	21.00	1.45 300	0.91	1.86	0.39	0.10		DD1
HDD100N		100 100	165	2.50	31.25	1.30 325	0.80	1.50	0.39	0.10		DD1
HDD170N		170 100	270	5.60	157.00	1.25 535	0.77	0.80	0.26	0.03		DD2
HDD250N		250 100	395	8.30	344.00	1.40 785	0.70	0.68	0.17	0.02		DD3
HDD350N		350 100	550	11.00	605.00	1.45 1100	0.75	0.40	0.13	0.02		DD3

Single Phase bridges (Isolated base)											
Type	$V_{RRM} \times 100$	I_{DC}/T_c	$I_{frms}^{10ms} T_{jmax}$	I^2t	V_{pk}/I_{pk} at 25°C	V_o	r	$R_{th(J-C)}/Diode$	$R_{th(C-H)}/bridge$	T_{jmax}	Fig No
	[V]	[A] [°C]	[A]	[kA ² sec]	[V] [A]	[V]	[mΩ]	[°C/W]	[°C/W]	[°C]	
MB35	2 - 12	30 67	550	1.25	1.30 50	0.8	8	5.40	1.350	150	DB1
HB62		50 85		9.80	1.50 75		8	1.93	0.310		DB3
HB82		80 85		2.80	1.50 125		6	1.60	0.483		DB3

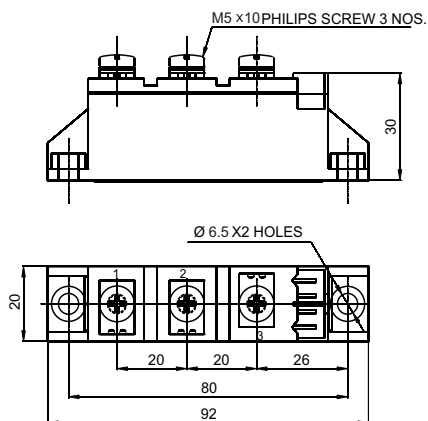
Three phase bridge (Isolated base)											
Type	$V_{RRM} \times 100$	I_{DC}/T_c	$I_{frms}^{10ms} T_{jmax}$	I^2t	V_{pk}/I_{pk} at 25°C	V_o	r	$R_{th(J-C)}/Diode$	$R_{th(C-H)}/bridge$	T_{jmax}	Fig No
	[V]	[A] [°C]	[A]	[kA ² sec]	[V] [A]	[V]	[mΩ]	[°C/W]	[°C/W]	[°C]	
HD35	2 - 12	35 62	550	1.50	1.7	0.8	7.5	8.40	1.400	150	DB2
HD62		63 100	550	1.52	1.50 75		8.0	1.87	0.310	150	DB3
HD82		82 100	750	2.18	1.30 75		5.0	1.52	0.253	150	DB3
HD162		160 100	1800	16.20	1.55 185		3.0	0.83	0.140	150	DB4

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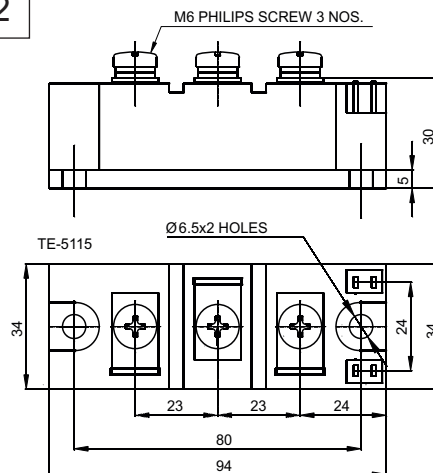


Diode Modules

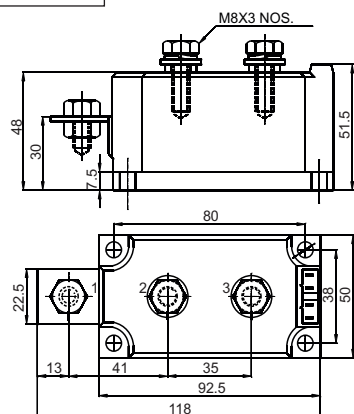
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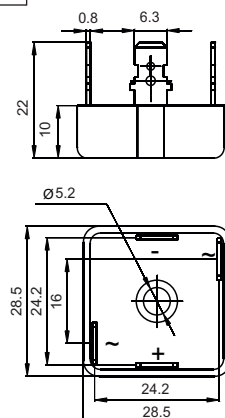
DD2



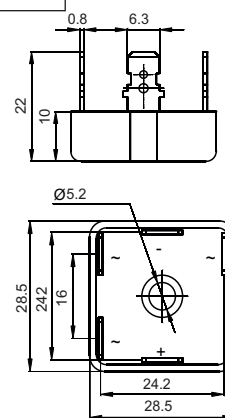
DD3



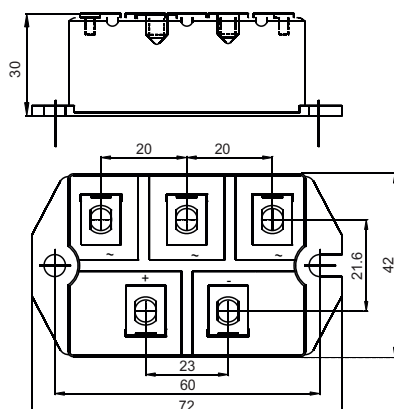
DB1



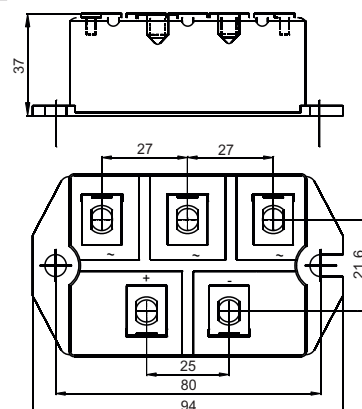
DB2



DB3



DB4



Phase Control Thyristors

Top Hat Type													
Type	V _{DRM} / V _{RRM} ×100	I _{T(av)} /T _c	I _{rms}	V _{pk} / I _{pk} at T _{jmax}		I ² t	I _{ism} 10m T _{jmax}	V _o	r	R _{th} (j-c) (c-h)		T _{jmax}	Fig No
	[V]	[A] [°C]	[A]	[V]	[A]	[kA ² sec]	[kA]	[V]	[mΩ]	[°C/W]		[°C]	
H16TL/TB	2 - 15	16 85	25	2.05	53	0.61	0.35	1.10	16.00	1.400	0.300	125	TH1-A/B
H30TL/TB		30 85	50	1.72	100	1.25	0.50	0.95	6.40	0.930	0.300		TH1-A/B
H45TB		45 85	70	1.72	150	3.20	0.80	0.95	4.50	0.600	0.200		TH2
H55TB	2 - 16	55 75	85	1.82	175	4.05	0.90	0.90	4.35				TH2
H65TB	2 - 15	65 75	100	1.87	200	5.00	1.00	0.87	4.10	0.500	0.200		TH2
H85TB	2 - 16	85 85	135	1.75	265	13.60	1.65	1.20	2.60	0.270	0.080		TH3
H125TB		125 70	195	2.00	400	31.00	2.50	1.20	1.90	0.245	0.080		TH4
H150TB		150 70	235	1.80	470	45.00	3.00	0.90	1.80	0.234	0.080		TH5
H175TB	2 - 16	175 85	275	1.76	550	106.00	4.60	1.08	1.30	0.135	0.040		TH6
H250TB	2 - 18	250 78	392	1.75	785	106.00	4.60	0.92	0.99	0.120	0.040		TH6
H285TB	2 - 60	285 82	450	1.70	1000	211.00	6.50	0.80	0.75	0.113	0.050		TH6
H300TB	2 - 16	300 85	470	1.65	1000	281.00	7.50	1.04	0.61	0.080	0.020		TH7
H350TB		350 85	550	1.65	1100	320.00	8.00	0.80	0.50				TH7
H400TB		400 85	628	1.45	1260	500.00	10.00	0.90	0.40	0.076	0.015		TH8
H500TB		500 75	785	1.60	1570	720.00	12.00	0.90	0.35				TH8
H650TB	2 - 60	650 70	1020	1.35	2000	980.00	14.00	1.00	0.12	0.070	0.015		TH9

* for further details refer individual datasheets @ www.hirect.com

TH1A	TH1B
TH2	TH3

Phase Control Thyristors

TH4 Technical drawing of TH4 thyristor showing dimensions: Ø8, Ø4, 19, 10, 10, 175±5, 165±5, 55, 21, 27 A/F, 1/2" 20 UNF. Includes a thyristor symbol with G, K, and A terminals.	TH5 Technical drawing of TH5 thyristor showing dimensions: Ø8, Ø4, 19 MAX, Ø10, 10, 10, 180±5, 177±5, 100±5, 21, 27 A/F, 1/2" 20 UNF, 2A THREADS. Includes a thyristor symbol with G, K, and A terminals.
TH6 Technical drawing of TH6 thyristor showing dimensions: Ø8, Ø4, 22, Ø11, 190±5, 80±5, 21, 33 A/F, 3/4" UNF. Includes a thyristor symbol with G, K, and A terminals.	TH7 Technical drawing of TH7 thyristor showing dimensions: Ø8, Ø4, 22, Ø11, 11, 232±5, 260±5, 165±5, 21, 46 SQ, 60 max. sq, Ø 8.4 x 4 HOLES. Includes a thyristor symbol with G, K, and A terminals.
TH8 Technical drawing of TH8 thyristor showing dimensions: Ø8, Ø4, 26, Ø11, 14, 18, 232±5, 268±5, 125±5, 46 SQ, 60 SQ, Ø 8.5 x 4 HOLES. Includes a thyristor symbol with G, K, and A terminals.	TH9 Technical drawing of TH9 thyristor showing dimensions: Ø4, Ø8, 27, Ø13.5, 13, 13, 260±10, 135±5, 46 SQ, 60 SQ, fTechnical[b0][i0][c2]p2;20°. Includes a thyristor symbol with G, K, and A terminals.

Phase Control Thyristors

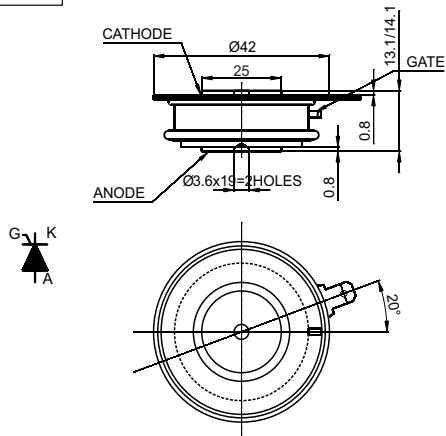
Capsules												
Type	V _{DRM} / V _{RRM}	I _{T(av)} /T _C	I _{trms}	V _{pk} /I _{pk} at T _{jmax}	I ² t	I _{tsm} 10mS T _{jmax}	V _o	r	R _{th} (j-c) (c-h)	T _{jmax}	Fig No	
	[V]	[A] [°C]	[A]	[V] [A]	[kA ² sec]	[kA]	[V]	[mΩ]	[°C/W]	[°C]		
H445CH	2 - 16	445 69	700	2.07 1200	106	4.60	0.85	0.900	0.0680 0.015	125	CH1	
H507CH	2 - 14	507 85		1.92 1600	320	8.00	0.80	0.600	0.0530 0.015		CH2	
H955CH	2 - 16	955 64	1500	2.00 3000	781	12.50	0.85	0.350	0.0380 0.005		CH3	
H1450CH	2 - 28	1450 82	2280		4500	30.00	0.97	0.270	0.0150 0.005		CH4	
H1500CH	2 - 18	1500 63	2355	1.55 3000	2420	22.00	0.84	0.195	0.0265 0.005		CH4	
H1590CH	2 - 60	1590 65	2500	1.37 3000	2000	20.00	1.00	0.100	0.0330 0.005	140	CH3	
H1800CH	2 - 20	1800 54	2830	1.68 3000	2880	24.00	1.05	0.185	0.0210 0.005	125	CH4	
H2000CH	2 - 18	2000 73	3140	1.45 3000	6480	36.00	0.82	0.180	0.0150 0.005		CH4	
H2900CH	2 - 25	2900 78	4550	1.42 3000	7683	39.20	0.85	0.175	0.0090 0.002		CH5	
H3200CH	2 - 20	3200 68	5000	1.30 3000	12701	50.40	0.95	0.127	0.0090 0.002		CH5	
H4350CH	2 - 14	4350 85	6829	1.18 4000	18000	60.00	0.88	0.075	0.0095 0.002		CH6	

* for further details refer individual datasheets @ www.hirect.com

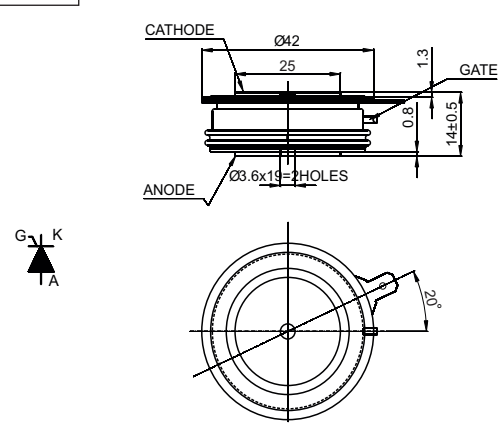


Phase Control Thyristors

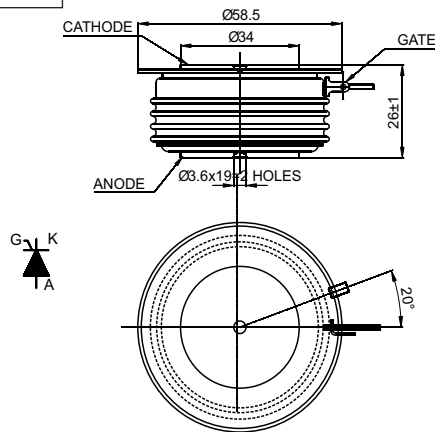
CH1



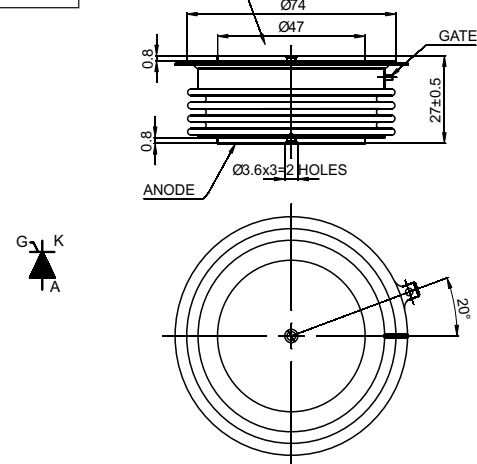
CH2



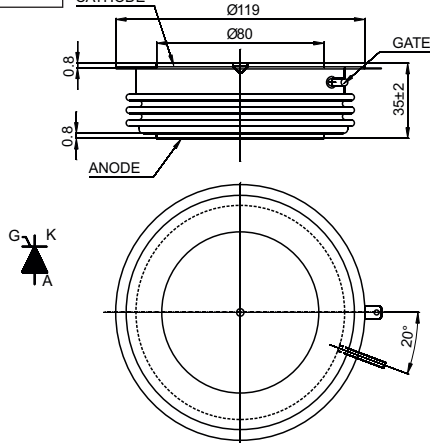
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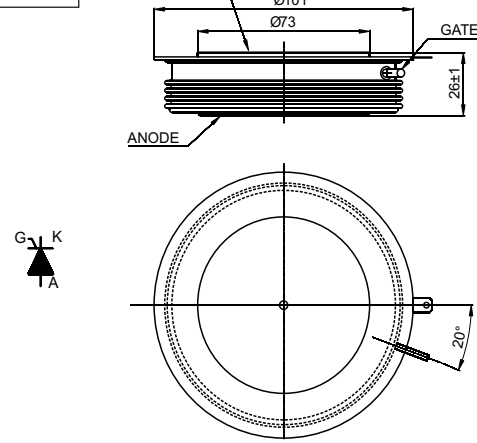
CH4



CH5



CH6



Thyristors Modules

Modules (Isolated Base)												
Type	$V_{DRM} / V_{RRM} \times 100$	$I_{T(av)} / T_c$	I_{trms}	V_{pk} / I_{pk} at T_{jmax}	I^2t	$I_{tsm} 10m @ T_{jmax}$	V_o	r	$R_{th(J-C)} / chip$	$R_{th(C-H)} / module$	T_{jmax}	Fig No
	[V]	[A] [°C]	[A]	[V] [A]	[kA ² sec]	[kA]	[V]	[mΩ]	[°C/W]	[°C/W]	[°C]	
HTT/HTD25N	2 - 18	25 85	40	1.80 80	1.06	0.46	1.00	11.00	0.92	0.10	125	TT1
HTT/HTD40N		40 85	65	1.80 125	2.45	0.70	0.88	5.80	0.69	0.10		TT1
HTT/HTD55N		55 85	85	1.60 175	7.81	1.25	0.90	3.50	0.55	0.10		TT1
HTT/HTD76N		75 85	120	1.60 235	10.51	1.45	0.82	2.60	0.39	0.10		TT1
HTT/HTD90N		90 85	140	1.60 300	14.45	1.70	0.84	2.10	0.38	0.10	130	TT1
HTT/HTD116N		116 85	180	1.75 300	24.00	2.20	0.80	2.40	0.22	0.10	125	TT1
HTT/HTD132N		130 85	205	1.50 410	51.20	3.20	0.85	1.50	0.23	0.03		TT2
HTT/HTD162N		162 85	255	1.50 500	96.80	4.40	0.85	0.95	0.20	0.03		TT2
HTT/HTD170N		170 85	265	1.54 550	106.00	4.60	0.95	1.00	0.17	0.02		TT3
HTT/HTD250N		250 85	395	1.55 800	245.00	7.00	0.80	0.70	0.13	0.02		TT3

3 Thyristor Modules (Non-Isolated Base)												
Type	$V_{DRM} / V_{RRM} \times 100$	$I_{T(av)} / T_c$	I_{trms}	V_{pk} / I_{pk} at 25°C	I^2t	$I_{tsm} 10mS @ T_{jmax}$	I_{GT}	V_{GT}	$R_{th(J-C)} / chip$	$R_{th(C-H)} / module$	T_{jmax}	Fig No
	[V]	[A] [°C]	[A]	[V] [A]	[kA ² sec]	[KA]	[mA]	[V]	[°C/W]	[°C/W]	[°C]	
H3T80N	2 - 4	80 116	125	1.20 240	26	2.28	150	2.00	0.35	0.03		TT4
H3T130N		130 112	204	1.20 410	51	3.20			0.20	0.03		TT4
H3T200N		200 121	314	1.20 630	145	5.40			0.12	0.03		TT5

Single Phase Half Controlled Bridge												
Type	$V_{DRM} / V_{RRM} \times 100$	$I_{T(av)} / T_c$	I_{trms}	V_{pk} / I_{pk} at T_{jmax}	I^2t	$I_{tsm} 10mS @ T_{jmax}$	V_o	r	$R_{th(J-C)} / chip$	$R_{th(C-H)} / module$	T_{jmax}	Fig No
	[V]	[A] [°C]	[A]	[V] [A]	[kA ² sec]	[kA]	[V]	[mΩ]	[°C/W]	[°C/W]	[°C]	
HCH40	8 - 12	40 85	28	1.45 45	0.5	320	0.85	13.00	1.15	0.20	125	TT6

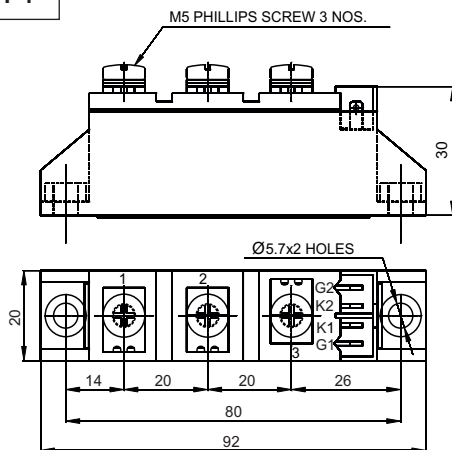
High Voltage modules (Isolated Base)												
Type	$V_{DRM} / V_{RRM} \times 100$	$I_{T(av)} / T_c$	I_{trms}	V_{pk} / I_{pk} at 25°C	I^2t at 45°C	$I_{tsm} 10mS @ T_{jmax}$	V_o	r	$R_{th(J-C)} / chip$	$R_{th(C-H)} / module$	T_{jmax}	Fig No
	[V]	[A] [°C]	[A]	[V] [A]	[kA ² sec]	[KA]	[A]	[mΩ]	[°C/W]	[°C/W]	[°C]	
HTT70N	2 - 24	70 85	110	1.65 320	13.50	1.60	0.85	3.20	0.300	0.10	125	TT1
HTT100N	2 - 22	100 85	157	1.74 300	14.45	1.70	0.85	3.20	0.220	0.03		TT1
HTT165N		165 85	259	1.36 300	180.00	6.00	0.80	1.60	0.155	0.03		TT2

* Pressure contact devices available on request

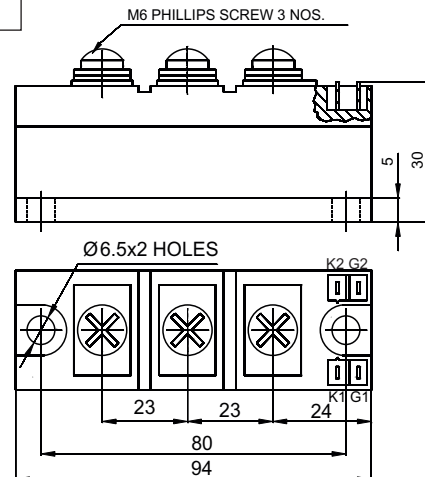
* for further details refer individual datasheets @ www.hirect.com

Thyristor Modules

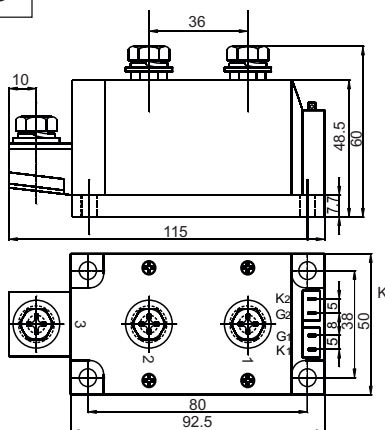
TT1



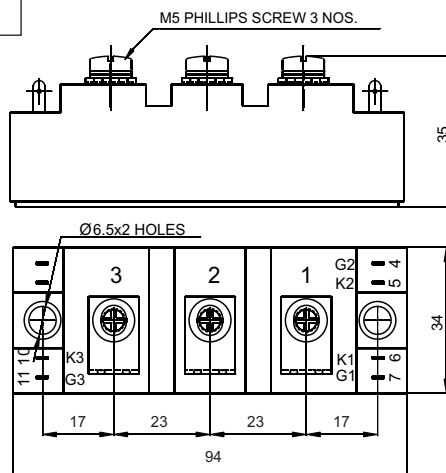
TT2



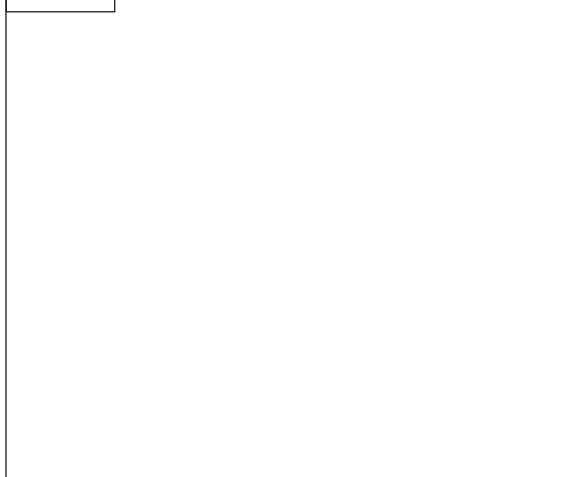
TT3



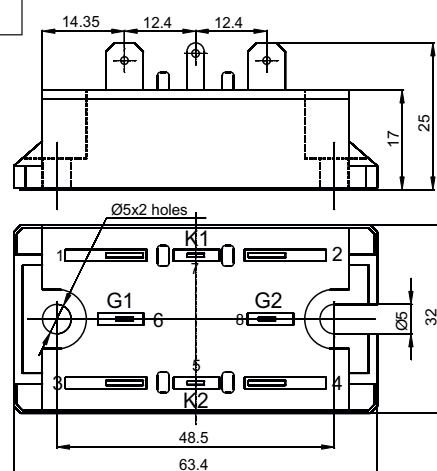
TT4



TT5



TT6



Fast Turn-off Thyristors

Top Hat Type

Type	V_{DRM} / V_{RRM} ×100	$I_{T(av)} / T_c$	I_{Tsm} 10mS T_{jmax}	I^2t	V_{pk} / I_{pk} at T_{jmax}	I_{GT} / V_{GT} $T_j = 125^{\circ}C.$	T_q	Reapplied dv/dt	T_{jmax}	Fig No
	[V]	[A] $^{\circ}C$	[kA]	[kA ² sec]	[V] [A]	[mA] [V]	[μSec]	[V/MSec]	$^{\circ}C$	
HF80TB	2 - 12	80 85	2.45	30	2.40 400	150 / 2.5	20-25	D,F,H	125	TH10
HF120TB		120 85	2.90	42	2.20 500			D,F		TH11
HF196TB		195 85	6.00	180	2.05 800			250 / 2.5		D,F

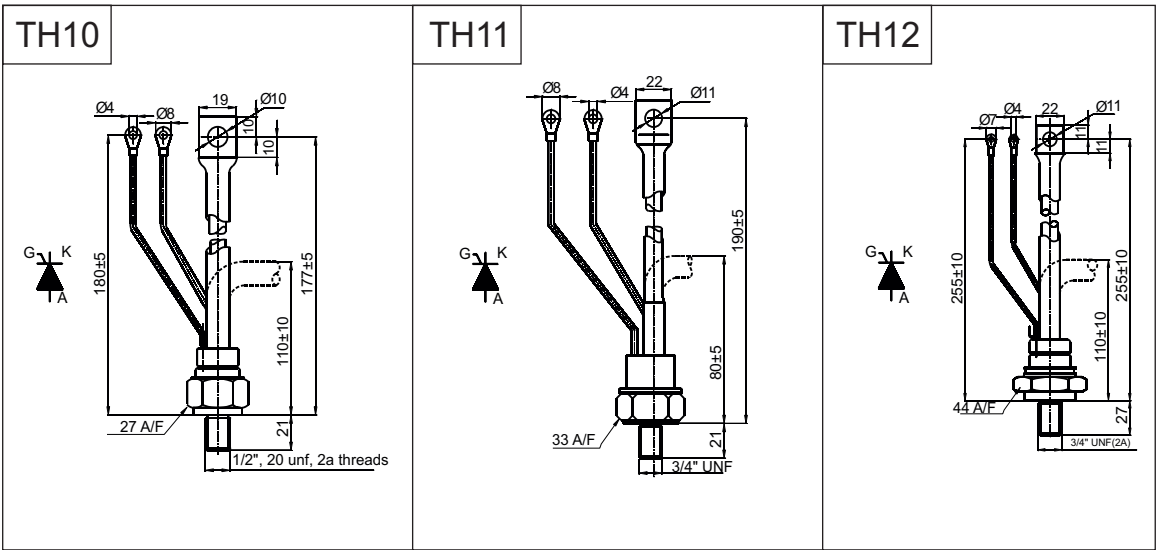
Capsules (Center gate type)

Type	V_{DRM} / V_{RRM} ×100	$I_{T(av)} / T_c$	I_{Tsm} 10mSec T_{jmax}	I^2t A ² sec	V_{pk} / I_{pk} at T_{jmax}	I_{GT} / V_{GT} $T_j = 125^\circ C.$	T_q	Reapplied dv/dt	T_{jmax}	Fig No
	[V]	[A] [°C]	[kA]	[kA ² sec]	[V] [A]	[mA] [V]	[μSec]	[V/MSec]	[°C]	
HF188CH	2 - 12	188 85	2.90	42	2.2 800	250 / 2.5	20-25	D,F	125	FH1
HF408CH		408 85	6.40	205	2.3 1400	250 / 2.5				FH2

Capsules (Distributed gate type)

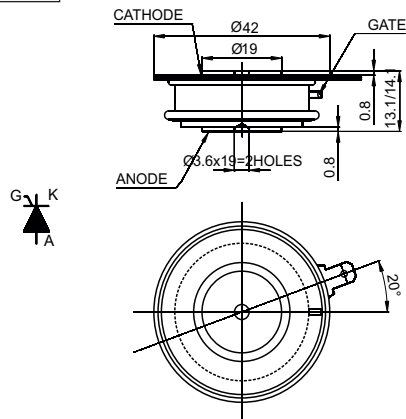
Type	V_{DRM} / V_{RRM} ×100	$I_{T(av)}/T_c$	I_{Tsm} 10mSec T_{jmax}	I^2t	V_{pk} / I_{pk} at T_{jmax}	I_{GT} / V_{GT} $T_j = 125^\circ C.$	T_q	Reapplied dv/dt	T_{jmax}	Fig No
	[V]	[A] $^\circ C$	[kA]	[kA ² sec]	[V] [A]	[mA] [V]	[μSec]	[V/MSec]	$^\circ C$	
HS800CH	15	800 55	10.00	500	2.30 1600	250 / 3.0	20-25	500	125	FH3
HS1250CH	16-20	1250 55	14.00	980	2.00 2000	300 / 3.0	40-55	500		FH4
HS2550CH		2500 55	37.20	6920	2.15 4000		60-80	1000		FH5

* for further details refer individual datasheets @ www.hirect.com

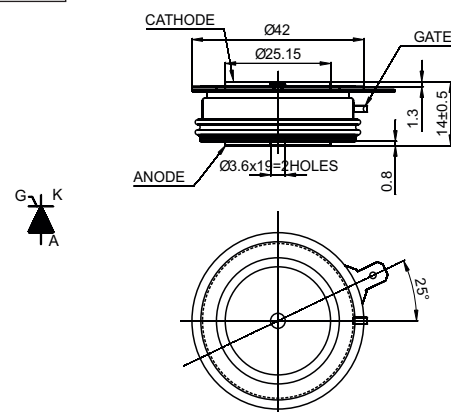


Fast Turn-off Thyristors

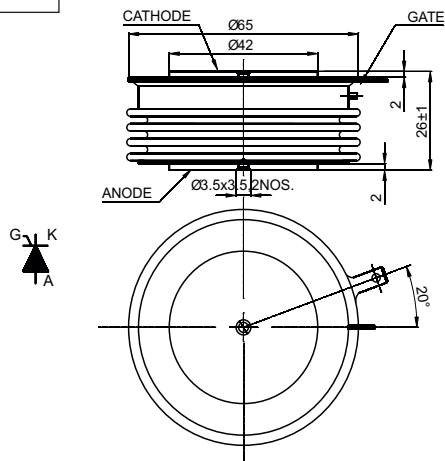
FH1



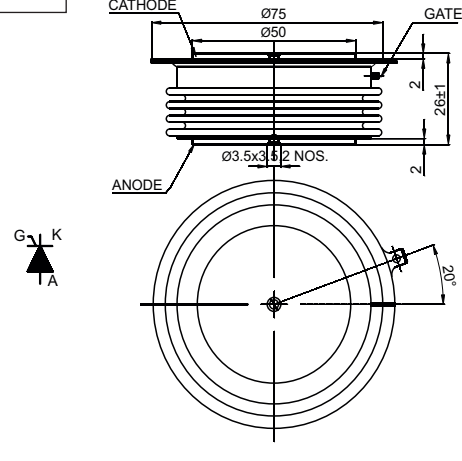
FH2



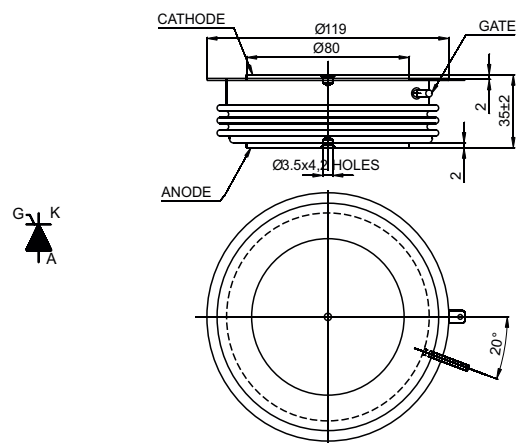
FH3



FH4



FH5



Power Stacks

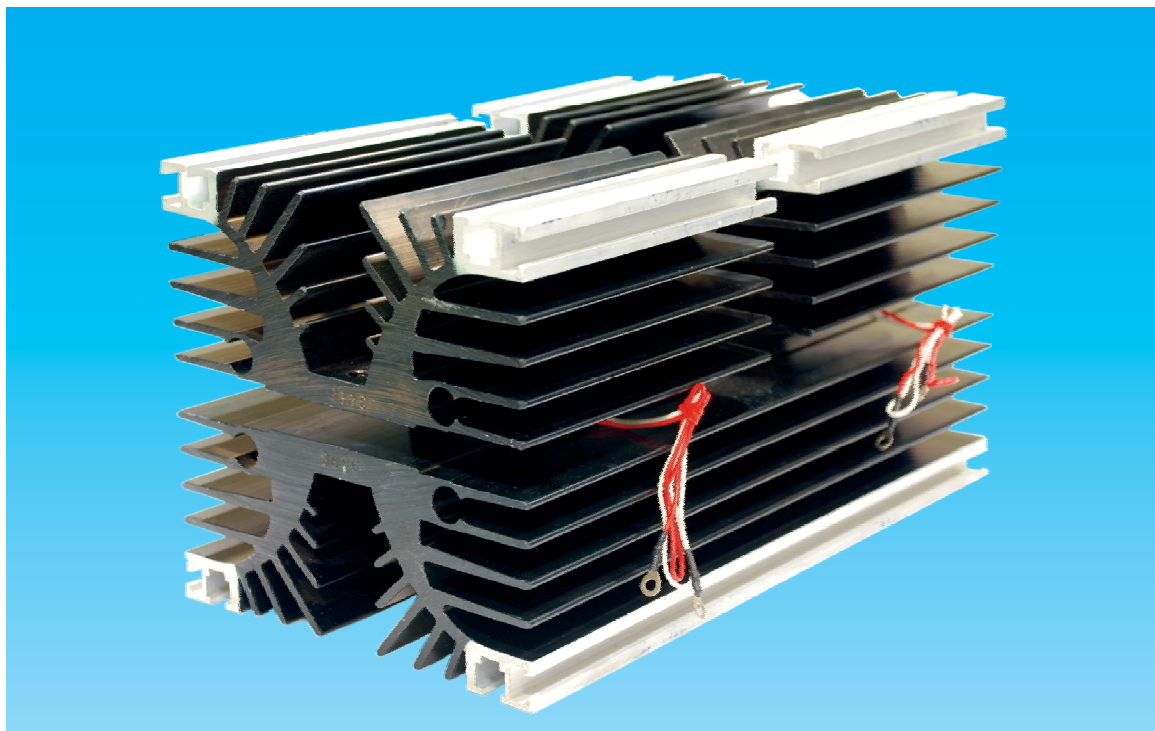
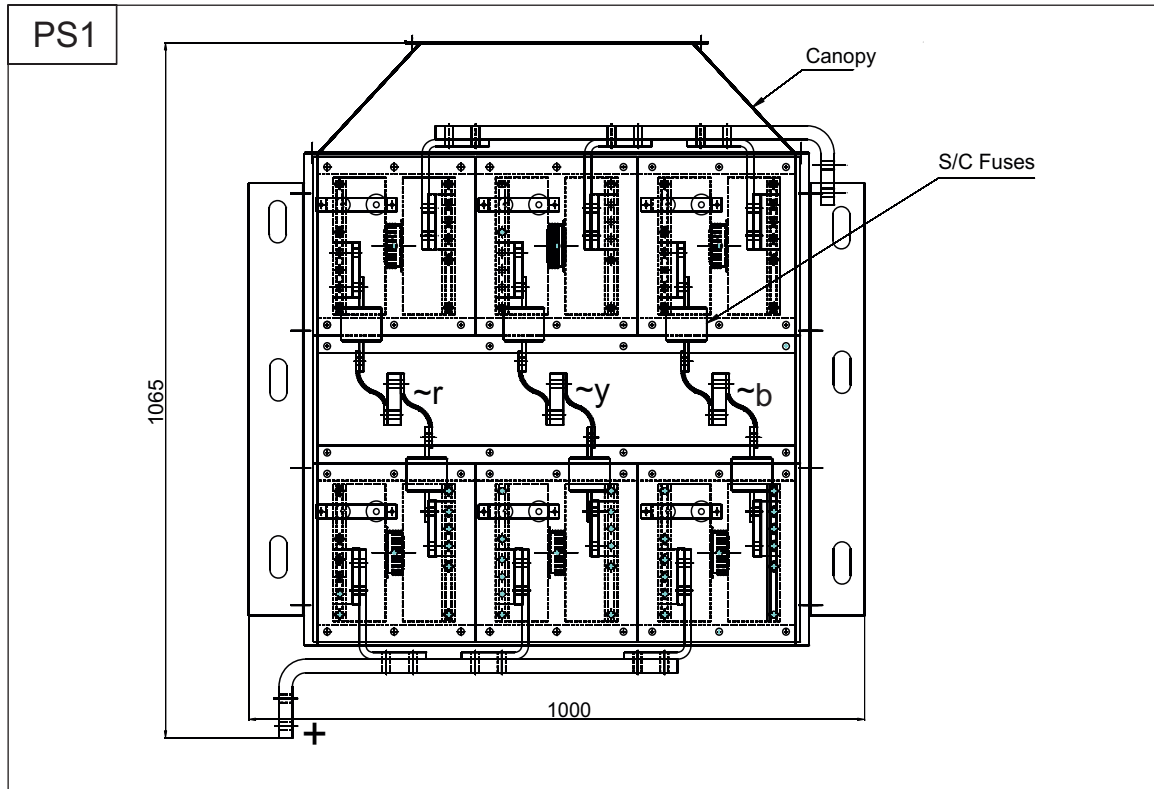
Thyristor Stack (B6C)										
Sr No	Device type	I/P Voltage	Class - I 100% cont.	Class - II 150% for 1 minute	Class - IV 125% for 2 hrs 200% for 10 secs	Class - V 150% for 2 hrs 200% for 1 Min	Class - VI 150% for 2 Hrs 300% for 1 Mn	Arm Fuse (For Class II)	Fuse Rating	Recommended Panel size in mm (w x d x h)
								Fuse Type		
1	H445CH16	450V	800A	560A	440A	410A	280A	170M3269	400A/690V	800 x 800 x 2200
2	H505CH16	450V	860A	600A	475A	450A	340A	170M3270	450A/690V	800 x 800 x 2200
3	H509CH18	500V	1010A	710A	575A	525A	360A	170M3271	500A/690V	800 x 800 x 2200
4	H955CH16	450V	1375A	975A	800A	725A	500A	170M4267	700A/690V	800 x 800 x 2200
5	H1800CH18	500V	1675A	1225A	1025A	900A	640A	170M5265	900A/690V	800 x 800 x 2200
6	H2000CH18	500V	2090A	1540A	1325A	1125A	800A	170M5267	1100A/690V	800 x 800 x 2200
7	H1800CH18	500V	2350A	1740A	1360A	1275A	910A	170M5268	1250A/690V	1000 x 800 x 2200
8	H2000CH18	500V	2990A	2225A	1770A	1625A	1175A	170M6269	1600A/690V	1000 x 800 x 2200
9	H3200CH20	550V	3675A	2850A	2325A	2050A	1525A	170M7082	2000A/690V	1000 x 800 x 2200
10	H2900CH25	700V	3550A	2375A	2225A	1975A	1475A	2X170M6247	2X900A/1250V	1000 x 800 x 2200
11	H1450CH28	750V	1740A	1275A	1100A	925A	670A	170M6247	900A/1250V	800 x 800 x 2200
12	H1450CH28	750V	2475A	1850A	1470A	1350A	975A	170M6251	1400A/1100V	1000 x 800 x 2200
13	H1663CH36	1000V	2350A	1450A	1400A	1275A	925A	170M6723	1000A/1500V	1000 x 800 x 2200

Diode Stack (B6U)							
Sr No	Device type	I/P Voltage	Class - I 100% cont.	Class - II 150% for 1 minute	Arm Fuse (For Class II)	Fuse Rating	Recommended Panel size in mm (w x d x h)
					Fuse Type		
1	SH16C540	415Vac	1200A	800A	170M3272	550A/690V	800 X 800 X 2200
2	SH18C1130	415Vac	1800A	1200A	170M5265	900A/690V	800 X 800 X 2200
3	SH18C1850	415Vac	2500A	1800A	170M5268	1250A/690V	800 X 800 X 2200
4	SH18C2500	660Vac	3000A	2000A	170M6251	1400A/1100V	800 X 800 X 2200

NOTE: - Current Ratings are valid for Forced cooling of 5 m/sec air outlet and ambient temp of 45°C



Power Stacks



Special Products

High Voltage Disks

Type	Voltage [V]	Current [A]	Fig No
HVD19K/0.65	19K	0.65 A	SP1

Water cooled Assemblies

Thyristors	V_{DRM} / V_{DRM}	I_{RMS} / T_{WATER}	I_{TSM}	Weight	Fig No
			Sine wave 10 ms		
	[V]	[A / °C]	[kA]	[g]	
2 X H505	1600	625 / 40	5.6	2540	W1
2 X H604	1600	880 / 40	6.5	2600	
2 X H955	1600	1120 / 40	12.5	3000	W2
2 X H1500	1600	1500 / 40	24.6	8500	
2 X H2000	1600	1810 / 40	36.0	8500	W3

Water Flow Rate - 4.5L / min

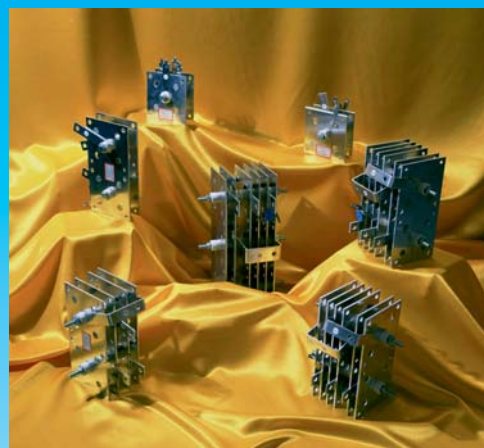
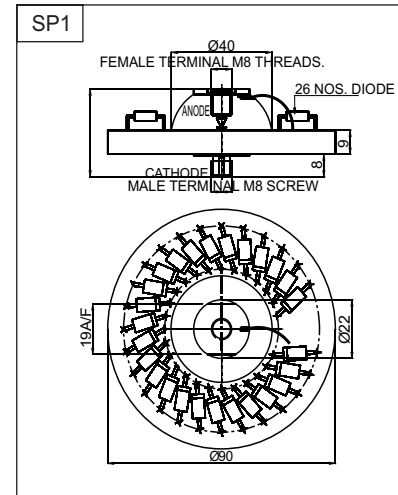
Max Water Pressure - 10 Bar

NOTE: - dv/dt - 1000V/μSec available on request

3 Phase Press Fit Diode Stack For Welding Application

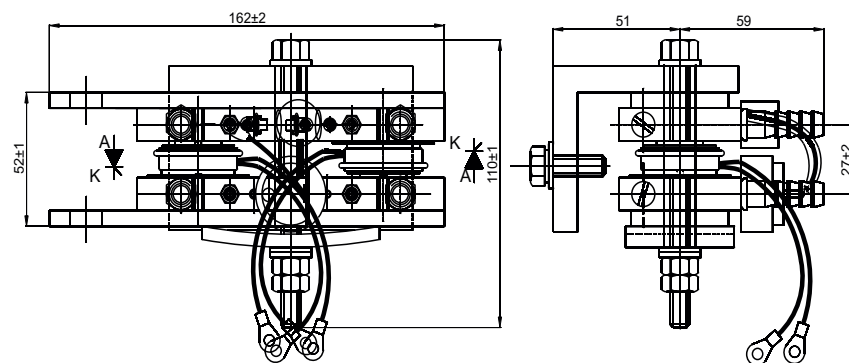
Type	I_n	V_{OUT}	E_d	Air Speed	V_{RRM}
	[A]	[V]	[°/s]	[M/s]	[V]
PTS 240	240	100	60	4	400
PTS 400	400	100	60	4	400
PTS 600	600	100	60	4	400

Current rating other than the above are available on request

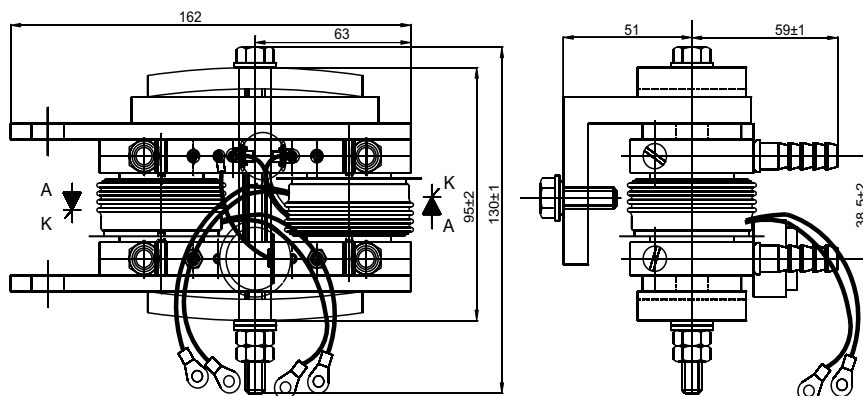


Special Products

W1



W2



W3

IGBT Sacks



HIRECT now offer reliable and highest quality IGBT based SAFESTacks and assemblies with best thermal management. This will help optimize system costs and shorten the time to manufacture final equipment.

SAFE Stack is a complete switch assembly for power electronic circuits. It contains all components necessary for current, voltage and temperature feedback. The 62mm Infineon make IGBT modules are used along with the superior and most reliable Eice Driver, which provides quality and reliability to SAFESTacks.

HIRECT CAN NOW CONTRIBUTE TO YOUR SUCCESS BY



1. Shortening production time due to ready to use power section.
2. Reduce system cost.
3. Modular designs offer flexible systems for power solutions
4. Suitable for industrial standard design cabinets.
5. Optimised thermal designs.
6. Can be readily paralleled for easy expansions.
7. Low inductance IGBT Stack designs.
8. Various power electronic designs can be offered.

USEFUL IN APPLICATIONS



1. Drives and Elevators
2. Renewable Energy and Distributed Power Generation Systems
3. Un-interrupted Power Supplies (UPS)
4. Traction Drives
5. Medical Equipments
6. Energy Treatment and HVDC conversion
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8. Pulsed Power

AVAILABLE IN RATINGS 1000AMPS TO 1600AMPS AND WITH IGBTs OF 600, 1200 AND 1700 VOLTS.

By this technology tie-up, world class technology product is now locally available for manufacturers of heavy duty drives, distributed power generators & industrial application in the form of HIRECT make SAFESTacks & assemblies.

This Design guide is intended to give a survey of our current Products line of power semiconductors together with their typical characteristics. Detailed characteristics can be found in data sheets of each type available on request from us.

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