



Selection Guide 2020/2021

High Power Thyristors & Diodes

www.ifbip-shop.com



Infineon Technologies Bipolar



Infineon Technologies Bipolar

Eco Line

straight, efficient, functional

Modules
Eco Block



Solder Bond



Pressure Contact

Power Line

reliable, powerful, valuable

Modules
Power Block



Diodes
Power Chip



Soft Starters
Power Start



Discs
Power Disc



Prime Line

unique, optimized, leading

Modules
Prime Block



Solder Bond



Pressure Contact

Diodes
Prime Soft



Discs
Prime Disc



Press Pack IGBT
Prime Switch



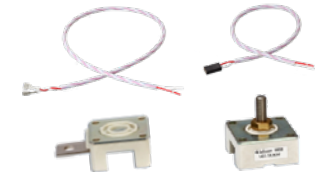
System Line

specific, complete, versatile

Stacks/Assemblies
Power Stack



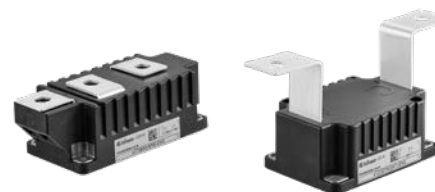
Accessories
Power Fit



Eco Line

Reduced to pure function. With proven reliability.

Infineon® Eco Block – Pressure Contact Technology



Complete re-design of 60 mm and 70 mm package

- › Proven pressure contact technology with short-on-fail feature
- › Best-in-class DC blocking capability
- › Best power-to-price ratio
- › Reduced failure and system costs

Infineon® Eco Block – Solder Contact Technology



Benefit from

Cost effective solder bond technology for increased competitiveness

- › Predictably high performance and lifetime due to 100% x-ray monitoring
- › Solid base plate for fast and easy mounting

www.infineon.com/ecoline



Order directly

Prime Line

Designed for highest performance

Infineon® Prime Block



Solder Bond Technology



Pressure Contact Technology

The Prime Block modules are designed for highest performance when the desired current exceeds 600 A for a 60 mm footprint or 330 A for a 50 mm footprint. This avoids the paralleling of modules when this is not an option.

Prime Block modules are a perfect fit for industrial AC and DC drives as well as for rectifiers and bypasses in UPS.

The new modules have been optimized for better thermal resistance and higher operational temperatures to push their performance beyond the existing limits. As a result, the Prime Block achieves the highest power density in its respective footprint while maintaining the well-known reliability, which leads to an outstanding lifetime.

Benefit from

- › Best-in-class power density in 50 mm & 60 mm housing
- › Predictable performance over entire lifetime
- › Ready for safety applications
- › Easy mounting & Faster time-to-market

www.infineon.com/primeblock



Order directly

Prime Line

Extreme energy. Ultimate run.

Infineon® Prime Switch

40 years experience in Press Pack Design with
30 years experience in IGBT Chip Design



Infineon Technologies Bipolar extends its high power product portfolio with a new direct Press Pack IGBT using Infineon Trench 4.5 kV IGBT chips:

Infineon® Prime Switch.

This new, application optimized Press Pack IGBT – with and without internal freewheeling diode is designed to fulfill all current and future requirements of high power systems using IGBT power semiconductors. Main applications are HVDC & FACTS, DC-Breaker and medium voltages drives. We grant highest quality and performance due to both, robust design and the outstanding production processes.

Benefit from

- › Full Long term short-on-fail behavior
- › Hermetically sealed and explosion proof housing
- › Double side cooling
- › Outstanding power cycling capability

www.infineon.com/primeswitch



Find out more

Focus on
application

Switch to higher power levels –

With our integrated solutions



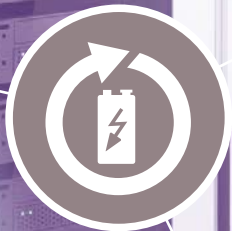
Broadest thyristor portfolio for UPS bypasses up to 3 MVA

Infineon® Power Discs

- › Highest power densities in standard housings with 75/100/111 mm diameter
- › Best-in-class maximum junction temperature for compact heatsink design
- › On-state voltage class selection makes paralleling easy

Infineon® Power Stacks

- › Customizable modular single and three-phase solutions
- › Available as single units and in high-volume production quantities



www.infineon.com/ups-bypass



Order directly

System Line



In perfect harmony – with Infineon® Power Stacks

Heatsink & mounting concepts
for bipolar semiconductors



Infineon® Power Stacks with bipolar power semiconductors are used in most varied applications in a power range from a few kilowatts up to several megawatts. The modular portfolio of our System Line covers solutions with thyristors and diodes and is optimized to the respective requirements.

The Block Design Lines are based on more than 22 heatsink concepts and offer a suitable design variant for every semiconductor package and for each application. Whether natural air cooling, forced air cooling or liquid cooling, all known requirements are supported.



www.infineon.com/powerstacks

Order directly

Ready for Infineon® Power Stacks?

4 steps to your individual Power Stack

We support your requests flexibly with building blocks:

1. Find a module or disc which support your application needs
2. Choose one of the building blocks for basic circuits
3. Define the stack from blocks according the applications needs
4. Add accessories according the applications needs

Your possible choice

22

heatsink designs

75

block designs

over

8,600

block variants

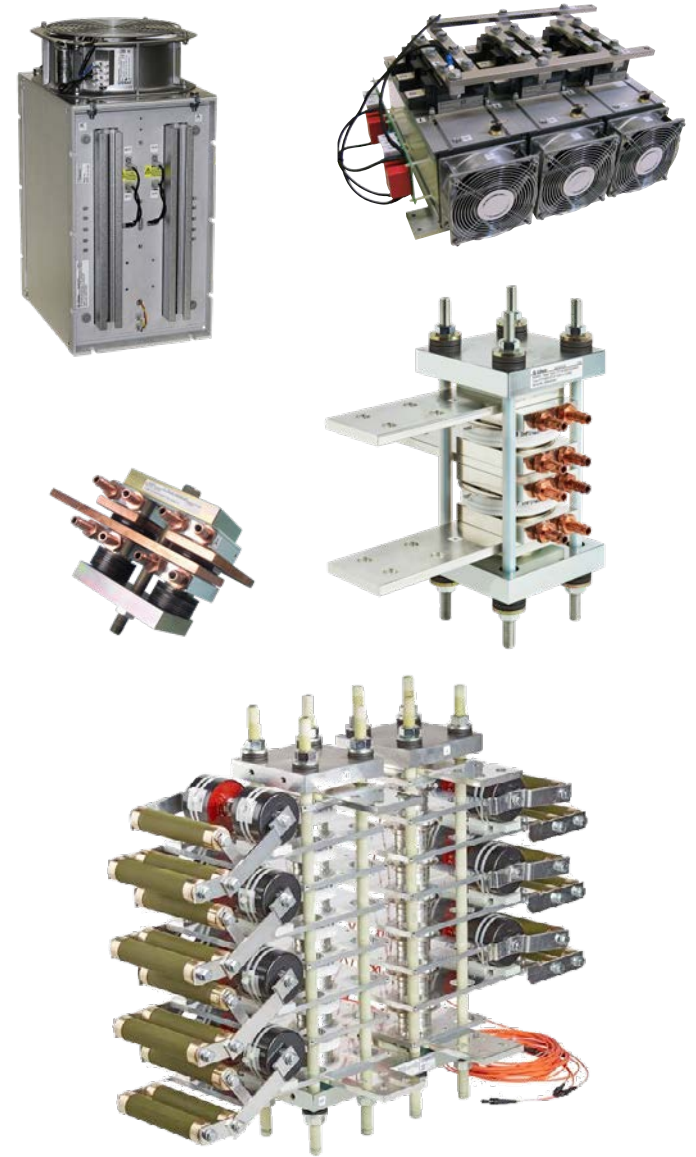
over

25,700

stack designs

Applications

- › Industrial AC and DC drives
- › Soft starters, STATS
- › Rectifiers and static by-passes in UPS
- › Wind energy systems
- › Welding, plating
- › Electrolysis
- › Electric heat
- › High voltage direct current (HVDC) transmission systems
- › Flexible AC transmission systems (FACTS)
- › TAP changers for transformers
- › Controllable transformers
- › Pulsed Power, Crowbars
- › Freewheeling and clamping circuits
- › Exiter devices
- › Rectifiers for VSI

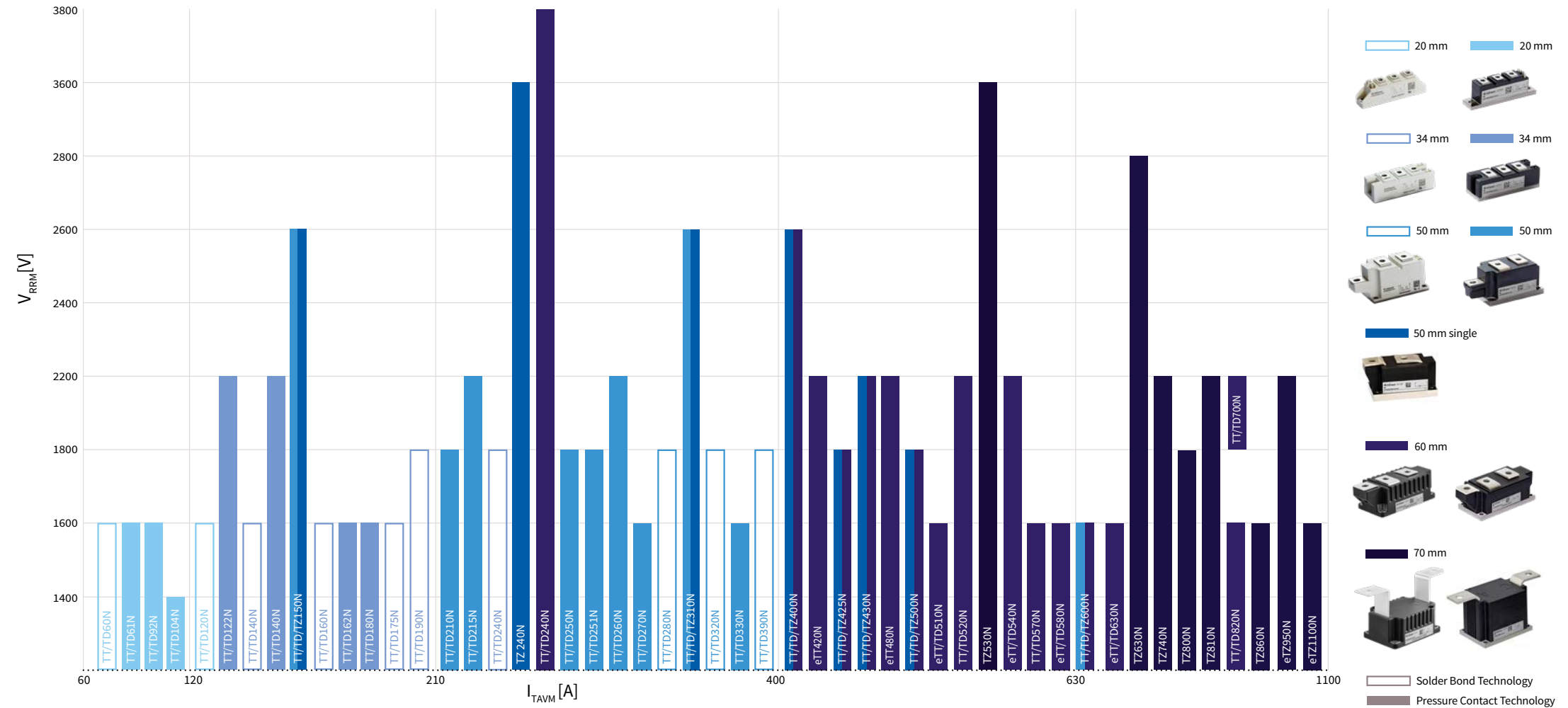


Personal service and support:

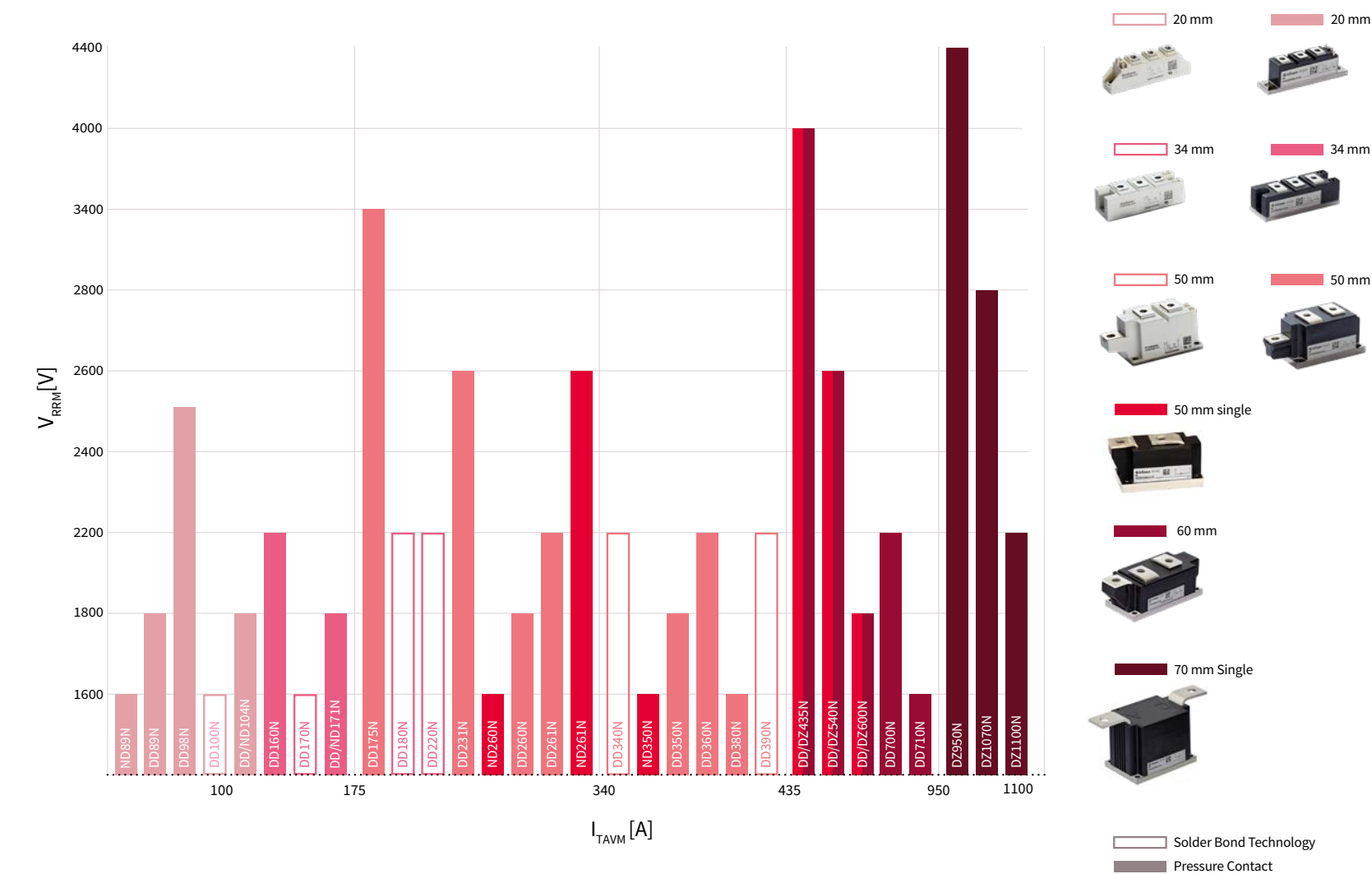
support@infineon-bip.com | Phone: +49 2902 9899-1766

www.ifbip-shop.com

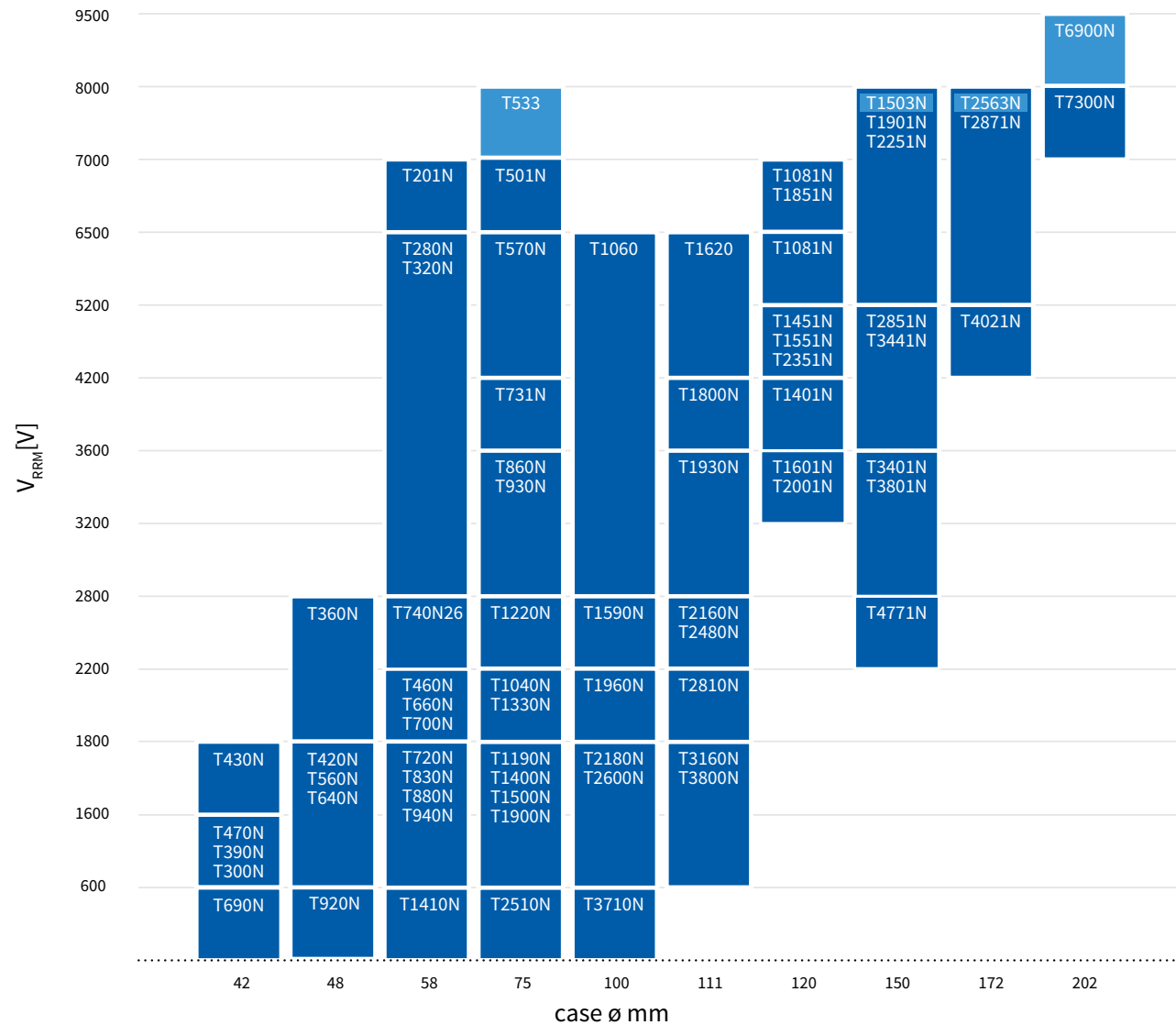
Overview thyristor/thyristor, thyristor/diode and single thyristor modules



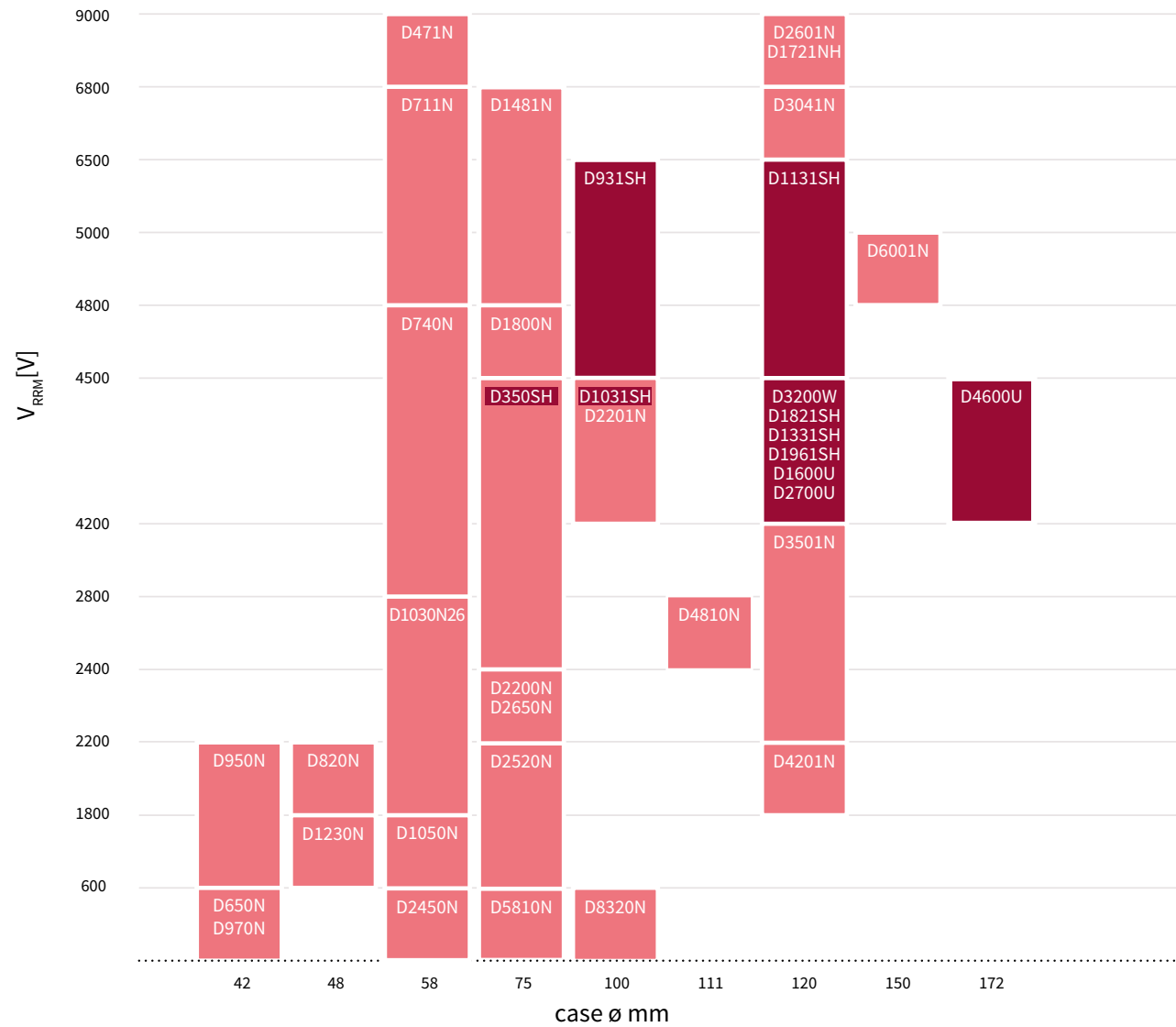
Overview diode modules



Overview thyristors in disc housings



Overview diodes in disc housings



Thyristor / Thyristor Modules



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/°C] @180° el sin	I_{TSM} [A] @10ms, $T_{vj\ max}$	$\int I^2 dt$ [A²·s · 10³] @10ms, $T_{vj\ max}$	$V_{(T0)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Eco Line - thyristor modules - baseplate 20 mm - solder bond

TT60N16SOF	1600		55/85	1200	7.20	1.00	4.80	0.49	130	TS20 / 38
TT60N16SOFB01	1600		55/85	1200	7.20	1.00	4.80	0.49	130	TS20 / 38
TT120N16SOF	1600		119/85	2250	18.05	0.90	3.35	0.20	130	TS20 / 38
TT120N16SOFB01	1600		119/85	1900	18.05	0.90	3.35	0.20	130	TS20 / 38

Power Line - thyristor modules - baseplate 20 mm - pressure contact

TT61N16KOF	1600	1400	60/85	1400	9.80	0.80	3.40	0.52	125	TP20 / 38
TT92N16KOF	1600		92/85	1800	16.20	0.85	2.43	0.37	140	TP20 / 38
TT104N14KOF	1400		104/85	1800	16.20	0.85	2.43	0.37	140	TP20 / 38

Eco Line - thyristor modules - baseplate 34 mm - solder bond

TT140N16SOF	1600		140/85	4000	80.00	1.00	1.60	0.19	125	TS34 / 38
TT160N16SOF	1600		160/85	4500	101.30	1.10	0.99	0.165	125	TS34 2nd Gen / 38
TT175N16SOF	1600		175/85	5400	125.00	0.83	1.30	0.164	125	TS34 / 38
TT190N18SOF	1800	1600	190/85	4500	101.30	0.85	0.90	0.165	125	TS34 2nd Gen / 38
TT240N18SOF	1800	1600	240/85	4400	96.80	0.85	0.90	0.165	140	TS34 2nd Gen / 38

Power Line - thyristor modules - baseplate 34 mm - pressure contact

TT122N22KOF	2200		122/85	2950	43.50	1.00	2.15	0.20	125	TP34 / 38
TT142N16KOF	1600		142/85	4100	84.00	0.90	1.10	0.22	125	TP34 / 38
TT162N16KOF	1600	1400	162/85	4400	97.00	0.85	0.95	0.20	125	TP34 / 38
TT180N16KOF	1600	1200	180/85	4100	84.00	0.85	0.90	0.20	130	TP34 / 38

B01: constructive variation

Thyristor / Thyristor Modules



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{vj\ max}$	$[I^2dt]$ [A²s · 10³] @10ms, $T_{vj\ max}$	$V_{(T0)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Eco Line - thyristor modules - baseplate 50 mm - solder bond

TT280N18SOF	1800	1600	280/85	7800	304.2	0.77	0.82	0.11	130	TS50 / 39
TT320N16SOF TIM	1600		320/85	8200	335.0	0.77	0.58	0.11	130	TS50 / 39
TT320N18SOF	1800	1600	320/85	8200	335.0	0.77	0.58	0.11	130	TS50 / 39

Prime Line - thyristor modules - baseplate 50 mm - solder bond

TT390N18SOF	1800	1600	380/85	8100	328.0	0.77	0.58	0.11	140	TS50 / 39
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Power Line - thyristor modules - baseplate 50 mm - pressure contact

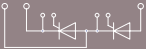
TT170N18KOF	1800	1600, 1400	170/85	4600	106.0	0.95	1.00	0.17	125	TP50A / 39
TT210N18KOF	1800		210/85	5800	168.0	1.00	0.85	0.13	125	TP50A / 39
TT215N22KOF	2200	2000, 1800	215/85	6300	198.0	0.95	0.92	0.13	125	TP50A / 39
TT250N18KOF	1800	1600, 1400	250/85	7000	245.0	0.80	0.70	0.13	125	TP50A / 39
TT250N16KOF TIM	1600		250/85	7000	245.0	0.80	0.70	0.13	125	TP50A / 39
TT251N18KOF	1800	1600, 1400	250/85	8000	320.0	0.80	0.70	0.13	125	TP50A / 39
TT260N22KOF	2200		260/85	8000	320.0	0.85	0.64	0.12	125	TP50A / 39
TT270N16KOF	1600		270/92	9000	400.0	0.80	0.58	0.12	125	TP50A / 39
TT285N16KOF	1600		285/92	10000	781.0	0.80	0.50	0.112	130	TP50A / 39
TT330N16AOF	1600		305/85	9000	405	0.80	0.58	0.12	130	TP50A / 39
TT330N16KOF	1600	1400, 1200	330/85	10000	500.0	0.80	0.50	0.112	130	TP50A / 39
TT330N16KOF TIM	1600		330/85	10000	500.0	0.80	0.50	0.112	130	TP50A / 39



These modules are available with „Thermal Interface Material“ (TIM). With TIM a reproducible thermal performance of power electronic systems will be achieved.

Thyristor / Thyristor Modules



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/°C] @180° el sin	I_{TSM} [A] @10ms, $T_{vj \max}$	$[I^2dt]$ [A²s · 10³] @10ms, $T_{vj \max}$	$V_{(T0)}$ [V] @ $T_{vj \max}$	r_T [mΩ] @ $T_{vj \max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Eco Line - thyristor modules - baseplate 60 mm - pressure contact

ETT540N22P60	2200		540/85	13300	884	0.85	0.425	0.076	135	TE60 / 40
ETT580N16P60	1600		580/85	13600	925	0.80	0.327	0.064	135	TE60 / 40
ETT630N16P60	1600		630/85	14700	1080	0.80	0.289	0.063	135	TE60 / 40

Power Line - thyristor modules - baseplate 60 mm - pressure contact

TT240N38KOF	3800	3600	240/85	5500	151	1.17	1.70	0.078	125	TP60 / 40
TT400N26KOF	2600	2400	400/85	11000	605	1.00	0.50	0.065	125	TP60 / 40
TT430N22KOF	2200		430/85	12000	1051	0.95	0.45	0.065	125	TP60A / 40
TT500N16KOF TIM	1600		500/85	14500	1051	0.85	0.35	0.058	125	TP60A / 40
TT500N18KOF	1800	1600, 1400, 1200	500/85	14500	1051	0.85	0.35	0.058	125	TP60A / 40
TT520N22KOF	2200		520/85	14500	1051	0.85	0.35	0.058	125	TP60A / 40
TT570N16KOF	1600		570/87	14000	1531	0.80	0.23	0.058	125	TP60A / 40
TT600N16KOF	1600		600/85	17500	1531	0.80	0.23	0.058	125	TP60A / 40
TT600N16KOF TIM	1600		600/85	17500	1531	0.80	0.23	0.058	125	TP60A / 40

Prime Line - thyristor modules - baseplate 60 mm - pressure contact

TT700N22KOF	2200		700/85	17100	1462	0.85	0.35	0.049	135	TP60A / 40
TT820N16KOF	1600		820/85	20100	2020	0.80	0.23	0.048	135	TP60A / 40
TT820N16KOF TIM	1600		820/85	20100	2020	0.80	0.23	0.048	135	TP60A / 40



These modules are available with „Thermal Interface Material“ (TIM). With TIM a reproducible thermal performance of power electronic systems will be achieved.

Single Thyristor Modules



Product 	$V_{\text{DRM}} / V_{\text{RRM}}$ [V]	also available $V_{\text{DRM}} V_{\text{RRM}}$ [V]	$I_{\text{FAVM}}/T_{\text{C}}$ [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{\text{vj max}}$	$\int I^2 dt$ [A²·s · 10³] @10ms, $T_{\text{vj max}}$	$V_{\text{T(TO)}}$ [V] @ $T_{\text{vj max}}$	r_{T} [mΩ] @ $T_{\text{vj max}}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Power Line - single thyristor modules - baseplate 50 mm - pressure contact										
TZ240N36KOF	3600		240/85	5500	151	1.17	1.70	0.078	125	TP50.1 / 39
TZ310N26KOF	2600	2200	310/85	8000	320	1.00	0.86	0.078	125	TP50.1 / 39
TZ400N26KOF	2600		400/85	11000	605	1.00	0.50	0.065	125	TP50.1 / 39
TZ425N18KOF	1800	1600, 1400, 1200	425/85	12500	781	0.90	0.30	0.078	125	TP50.1 / 39
TZ430N22KOF	2200		430/85	12000	720	0.95	0.45	0.065	125	TP50.1 / 39
TZ500N18KOF	1800	1600, 1200	500/85	14500	1051	0.90	0.27	0.065	125	TP50.1 / 39
TZ600N16KOF	1600	1200	600/85	14000	980	0.90	0.27	0.065	125	TP50.1 / 39

Eco Line - single thyristor modules - baseplate 70 mm - pressure contact										
ETZ950N22P70	2200		923/85	25100	3150	0.82	0.22	0.041	135	TE70 / 40
ETZ1100N16P70	1600		1051/85	28200	3976	0.80	0.15	0.040	135	TE70 / 40

Power Line - single thyristor modules - baseplate 70 mm - pressure contact										
TZ530N36KOF	3600		530/85	20000	2000	1.05	0.49	0.045	125	TP70 / 40
TZ630N28KOF	2800	2400, 2200	630/85	23000	2650	0.95	0.37	0.042	125	TP70 / 40
TZ740N22KOF	2200		740/85	26500	3500	0.82	0.17	0.042	125	TP70A / 40
TZ740N22KOF TIM	2200		819/85	26500	3500	0.82	0.17	0.042	125	TP70A / 40
TZ800N16KOF TIM	1600		800/85	30000	4500	0.82	0.17	0.042	125	TP70A / 40
TZ800N18KOF	1800	1600, 1400, 1200	800/85	30000	4500	0.82	0.17	0.042	125	TP70A / 40
TZ800N18KOF TIM	1800		800/85	30000	4500	0.82	0.17	0.042	125	TP70A / 40
TZ810N22KOF	2200		819/85	35000	6125	0.82	0.17	0.042	125	TP70A / 40
TZ810N22KOF TIM	2200		819/85	35000	6125	0.82	0.17	0.042	125	TP70A / 40
TZ860N16KOF	1600		860/85	40000	8000	0.80	0.145	0.042	125	TP70A / 40
TZ860N16KOF TIM	1600		860/85	40000	8000	0.80	0.145	0.042	125	TP70A / 40



These modules are available with „Thermal Interface Material“ (TIM). With TIM a reproducible thermal performance of power electronic systems will be achieved.

Thyristor / Diode Modules



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{vj\ max}$	$[I^2dt]$ [A²·s · 10³] @10ms, $T_{vj\ max}$	$V_{(T0)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Eco Line - thyristor / diode modules - baseplate 20 mm - solder solder

TD60N16SOF	1600		55/85	1200	7.20	1.00	4.80	0.49	130	TS20 / 38
TD120N16SOF	1600		119/85	2250	18.05	0.90	3.35	0.20	130	TS20 / 38

Power Line - thyristor / diode modules - baseplate 20 mm - pressure contact

TD61N16KOF	1600		60/85	1400	9.80	0.80	3.40	0.52	125	TP20 / 38
TD92N16KOF	1600		92/85	1800	16.20	0.85	2.43	0.37	140	TP20 / 38
TD104N12KOF	1200		104/85	1800	16.20	0.85	2.43	0.37	140	TP20 / 38

Eco Line - thyristor / diode modules - baseplate 34 mm - solder bond

TD140N16SOF	1600		140/85	4000	80.00	1.00	1.60	0.19	125	TS34 / 38
TD160N16SOF	1600		160/85	4500	101.30	1.10	0.99	0.165	125	TS34 2nd Gen / 38
TD175N16SOF	1600		175/85	5400	125.00	0.83	1.30	0.164	125	TS34 / 38
TD190N18SOF	1800	1600	190/85	4500	101.30	0.85	0.90	0.165	125	TS34 2nd Gen / 38
TD240N18SOF	1800	1600	240/85	4400	96.80	0.85	0.90	0.165	140	TS34 2nd Gen / 38

Power Line - thyristor / diode modules - baseplate 34 mm - pressure contact

TD122N22KOF	2200		122/85	2950	43.50	1.00	2.15	0.20	125	TP34 / 38
TD140N22KOF	2200	1800	140/85	3200	51.20	0.90	1.75	0.06	125	TP34 / 38
TD162N16KOF	1600		162/85	4400	97.00	0.85	0.95	0.20	125	TP34 / 38
TD180N16KOF	1600		180/85	4100	84.00	0.85	0.90	0.20	130	TP34 / 38

Thyristor / Diode Modules



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{vj\ max}$	$\int I^2 dt$ [A²·s · 10³] @10ms, $T_{vj\ max}$	$V_{(T0)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Eco Line - thyristor / diode modules - baseplate 50 mm - solder bond										
TD280N18SOF	1800	1600	280/85	7800	304	1.77	0.82	0.11	130	TS50 / 39
TD320N18SOF	1800	1600	320/85	8200	335	0.77	0.58	0.11	130	TS50 / 39
TD320N16SOF TIM	1600		380/85	8100	328	0.77	0.58	0.11	140	TS50 / 39

Prime Line - thyristor / diode modules - baseplate 50 mm - solder bond										
TD390N18SOF	1800	1600	380/85	8100	328	0.77	0.58	0.11	140	TS50 / 39

Power Line - thyristor / diode modules - baseplate 50 mm - pressure contact										
TD210N18KOF	1800	1600, 1200	210/85	5800	168	1.00	0.85	0.13	125	TP50A / 39
TD215N22KOF	2200		215/85	6300	198	0.95	0.92	0.13	125	TP50A / 39
TD215N22KOF TIM	2200		215/85	6300	198	0.95	0.92	0.13	125	TP50A / 39
TD250N18KOF	1800	1600, 1400, 1200	250/85	7000	245	0.80	0.70	0.13	125	TP50A / 39
TD250N16KOF TIM	1600		250/85	7000	245	0.80	0.70	0.13	125	TP50A / 39
TD251N18KOF	1800	1600	250/85	8000	320	0.80	0.70	0.13	125	TP50A / 39
TD260N22KOF	2200		260/85	8000	320	0.85	0.64	0.12	125	TP50A / 39
TD270N16KOF	1600		270/85	9000	405	0.80	0.58	0.12	125	TP50A / 39
TD285N16KOF	1600	1400, 1200	285/92	10000	781	0.80	0.50	0.112	130	TP50A / 39
TD330N16AOF	1600		305/85	9000	405	0.80	0.58	0.12	130	TP50A / 39
TD330N16KOF	1600		330/85	10000	500	0.80	0.50	0.112	130	TP50A / 39
TD330N16KOF TIM	1600		330/85	10000	500	0.80	0.50	0.112	130	TP50A / 39



These modules are available with „Thermal Interface Material“ (TIM). With TIM a reproducible thermal performance of power electronic systems will be achieved.

Thyristor / Diode Modules



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_c [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{vj \max}$	$\int i^2 dt$ [A²S · 10³] @10ms, $T_{vj \max}$	$V_{(T0)}$ [V] @ $T_{vj \max}$	r_T [mΩ] @ $T_{vj \max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Eco Line - thyristor / diode modules - baseplate 60 mm - pressure contact

ETD540N22P60	2200		540/85	13300	884	0.85	0.425	0.076	135	TE60 / 40
ETD580N16P60	1600		580/85	13600	925	0.80	0.327	0.064	135	TE60 / 40
ETD630N16P60	1600		630/85	14700	1080	0.80	0.289	0.063	135	TE60 / 40

Power Line - thyristor / diode modules - baseplate 60 mm - pressure contact

TD240N36KOF	3600		240/85	5500	151	1.17	1.70	0.078	125	TP60 / 40
TD400N26KOF	2600		400/85	11000	605	1.00	0.50	0.065	125	TP60 / 40
TD430N22KOF	2200		430/85	12000	1051	0.95	0.45	0.065	125	TP60A / 40
TD430N22KOF TIM	2200		430/85	12000	1051	0.95	0.45	0.065	125	TP60A / 40
TD500N16KOF TIM	1600		500/85	14500	1051	0.85	0.35	0.058	125	TP60A / 40
TD500N18KOF	1800	1600, 1200	500/85	14500	1051	0.85	0.35	0.058	125	TP60A / 40
TD520N22KOF	2200		520/85	14500	1051	0.85	0.35	0.058	125	TP60A / 40
TD520N22KOF TIM	2200		520/85	14500	1051	0.85	0.35	0.058	125	TP60A / 40
TD570N16KOF	1600		570/87	14000	1531	0.80	0.23	0.058	125	TP60A / 40
TD600N16KOF	1600		600/85	17500	1531	0.80	0.23	0.058	125	TP60A / 40
TD600N16KOF TIM	1600		600/85	17500	1531	0.80	0.23	0.058	125	TP60A / 40

Prime Line - thyristor / diode modules - baseplate 60 mm - pressure contact

TD700N22KOF	2200		700/85	20400	1462	0.85	0.35	0.049	135	TP60A / 40
TD700N22KOF TIM	2200		700/85	20400	1462	0.85	0.35	0.049	135	TP60A / 40
TD820N16KOF	1600		820/85	24800	2020	0.80	0.23	0.048	135	TP60A / 40



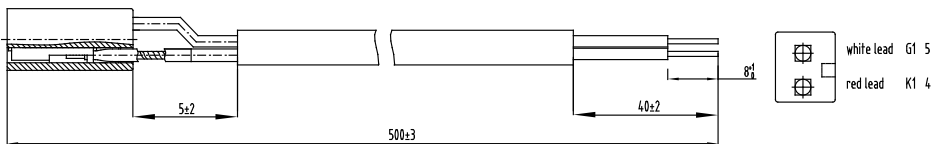
These modules are available with „Thermal Interface Material“ (TIM). With TIM a reproducible thermal performance of power electronic systems will be achieved.

Accessories – Gateleads for Modules with Baseplate 20 mm

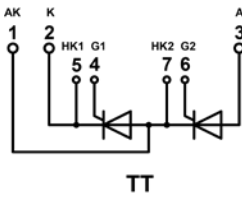
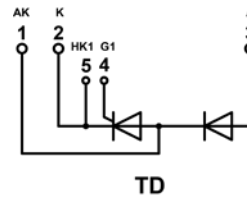
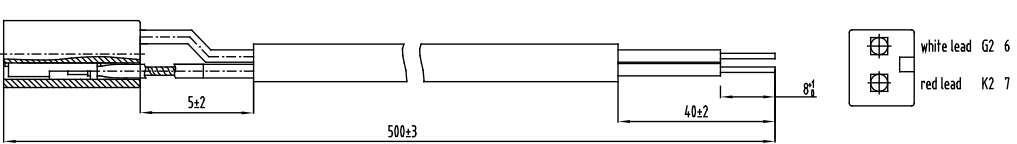


Product	Connection to	Connection to	Color	Length [mm]	Ordering Code
Module with baseplate 20 mm					
GATELEAD L=500 PB20 G1K1	5 / 4	G1/K1	G yellow / HK red	500	SP000983478
GATELEAD L=500 PB20 G2K2	6 / 7	G2/K2	G yellow / HK red	500	SP000983484

Outline G1/K1



Outline G2/K2

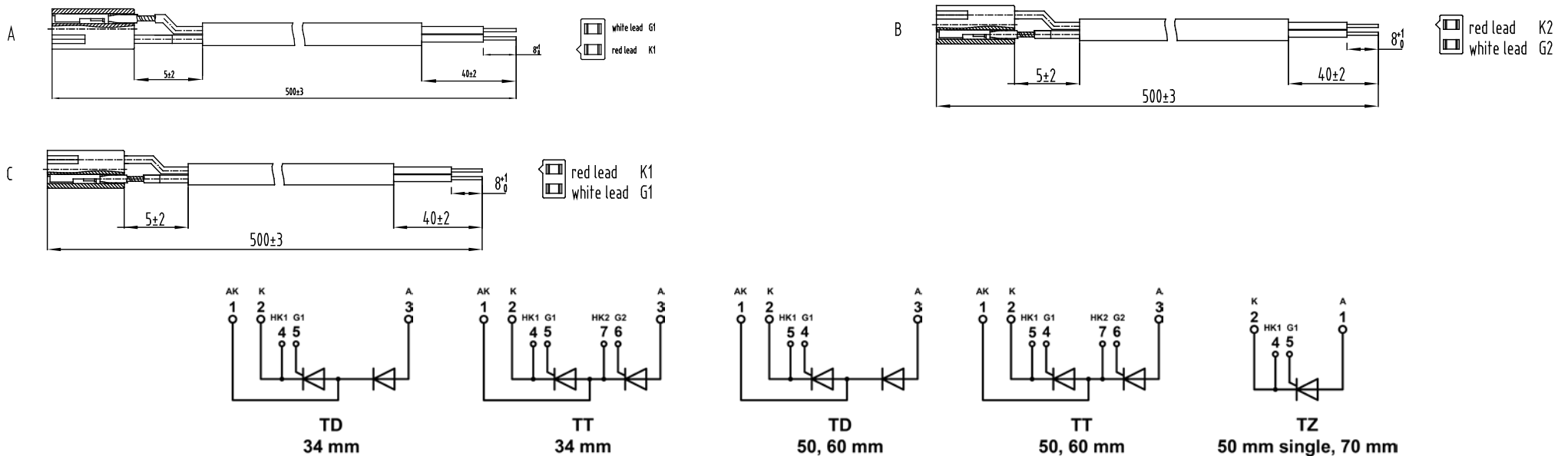


These Gateleads are only suitable for 20 mm pressure contact modules.

Accessories – Gateleads for Modules with Baseplates 34-70 mm



Product	Connection to	Connection to	Color	Length [mm]	Outline	Ordering Code
Module with baseplate 34 mm						
GATELEAD L=500 PB34-60_2	4 / 5	G1/HK1	G white / HK red	500	A	SP000983496
GATELEAD L=500 PB34-70_1	6 / 7	G2/HK2	G white / HK red	500	B	SP000983490
Module with baseplate 50, 60 mm						
GATELEAD L=500 PB34-60_2	5 / 4	G1/HK1	G white / HK red	500	A	SP000983496
GATELEAD L=500 PB34-70_1	6 / 7	G1/HK1	G white / HK red	500	B	SP000983490
Module with baseplate 50 mm single						
GATELEAD L=500 PB34-60_2	5 / 4	G1/HK1	G white / HK red	500	A	SP000983496
Module with baseplate 70 mm						
GATELEAD L=500 PB34-70_1	5 / 4	G1/HK1	G white / HK red	500	C	SP000983490



Diode / Diode Modules



Product 	$V_{\text{DRM}} / V_{\text{RRM}}$ [V]	also available $V_{\text{DRM}} V_{\text{RRM}}$ [V]	$I_{\text{FAVM}}/T_{\text{C}}$ [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{\text{vj max}}$	$\int I^2 dt$ [A²s · 10³] @10ms, $T_{\text{vj max}}$	$V_{\text{T(0)}}$ [V] @ $T_{\text{vj max}}$	r_{T} [mΩ] @ $T_{\text{vj max}}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Eco Line - diode modules - baseplate 20 mm - solder solder

DD100N16S	1600		134/100	2000	20.00	0.87	2.45	0.20	130	DS20 / 41
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Power Line - diode modules - baseplate 20 mm - pressure contact

DD89N18K	1800	1600, 1400, 1200	89/100	2400	28.80	0.75	2.30	0.45	150	DP20 / 41
DD98N25K	2500	2200	98/100	2000	20.00	0.82	2.00	0.39	150	DP20 / 41
DD104N18K	1800	1600, 1200	104/100	2500	31.25	0.70	2.10	0.39	150	DP20 / 41

Eco Line- diode modules - baseplate 34 mm - solder bond

DD170N16S	1600		165/100	5500	151.25	0.75	1.05	0.18	135	DS34 / 41
DD180N22S	2200	1600	174/100	5000	125.00	0.85	0.95	0.16	135	DS34 2nd Gen / 41
DD220N22S	2200	1600	226/100	4800	115.20	0.85	0.95	0.16	150	DS34 2nd Gen / 41

Power Line - diode modules - baseplate 34 mm - pressure contact

DD160N22K	2200		160/100	4600	105.80	0.80	1.00	0.26	150	DP34 / 41
DD171N18K	1800	1600, 1200	170/100	5600	157.00	0.75	0.80	0.26	150	DP34 / 41

Diode / Diode Modules



Product 	$V_{\text{DRM}} / V_{\text{RRM}}$ [V]	also available $V_{\text{DRM}} V_{\text{RRM}}$ [V]	$I_{\text{FAVM}}/T_{\text{C}}$ [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{\text{vj max}}$	$\int I^2 dt$ [A²·s · 10³] @10ms, $T_{\text{vj max}}$	$V_{\text{T(TO)}}$ [V] @ $T_{\text{vj max}}$	r_{T} [mΩ] @ $T_{\text{vj max}}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Eco Line - diode modules - baseplate 50 mm - solder bond

DD340N22S	2200	1600	330/100	8500	385	0.81	0.30	0.086	130	DS50 / 42
DD340N22S TIM	2200		330/100	8500	385	0.81	0.30	0.086	130	DS50 / 42

Power Line - diode modules - baseplate 50 mm - pressure contact

DD175N34K	3400	3200, 3000	175/100	4000	80	0.90	1.80	0.17	150	DP50 / 42
DD260N18K	1800	1600, 1200	260/100	8300	344	0.70	0.68	0.17	150	DP50A / 42
DD261N22K	2200	2000	260/100	8300	344	0.70	0.68	0.17	150	DP50A / 42
DD285N02K	200		285/100	8300	344	0.75	0.40	0.17	150	DP50 / 42
DD350N18K	1800	1600, 1400, 1200	350/100	11000	605	0.75	0.40	0.13	150	DP50A / 42
DD360N22K	2200		360/100	13000	550	0.75	0.40	0.125	150	DP50A / 42
DD380N16K	1600		380/100	11500	660	0.75	0.32	0.125	150	DP50A / 42

Prime Line - diode modules - baseplate 50 mm - solder bond

DD390N22S	2200	1600	390/113	8500	385	0.81	0.30	0.086	150	DS50 / 42
DD390N22S TIM	2200		390/113	8400	353	0.81	0.30	0.086	150	DS50 / 42

Power Line - diode modules - baseplate 60 mm - pressure contact

DD435N40K	4000	3600, 3400	435/100	12000	720	0.84	0.60	0.078	150	DP60 / 43
DD540N22K	2200		540/100	14000	980	0.78	0.31	0.078	150	DP60A / 43
DD540N22K TIM	2200		540/100	14000	980	0.78	0.31	0.078	150	DP60A / 43
DD540N26K	2600		540/100	14000	980	0.78	0.31	0.078	150	DP60 / 43
DD600N18K	1800	1600, 1400, 1200	600/100	19000	1800	0.75	0.215	0.078	150	DP60A / 43
DD700N22K	2200		700/100	21000	1805	0.78	0.19	0.065	150	DP60A / 43
DD710N16K	1600		710/100	26000	2420	0.75	0.15	0.065	150	DP60A / 43



These modules are available with „Thermal Interface Material“ (TIM). With TIM a reproducible thermal performance of power electronic systems will be achieved.

Single Diode Modules



Product 	$V_{\text{DRM}} / V_{\text{RRM}}$ [V]	also available $V_{\text{DRM}} V_{\text{RRM}}$ [V]	$I_{\text{FAVM}}/T_{\text{C}}$ [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{\text{vj max}}$	$\int I^2 dt$ [A²·s · 10³] @10ms, $T_{\text{vj max}}$	$V_{\text{(T0)}}$ [V] @ $T_{\text{vj max}}$	r_{T} [mΩ] @ $T_{\text{vj max}}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Power Line - diode modules - baseplate 20 mm - pressure contact

ND89N16K	1600	1200	89/100	2400	28.80	0.75	2.300	0.450	150	DP20 / 41
ND104N18K	1800	1600, 1200	104/100	2500	31.25	0.70	2.100	0.390	150	DP20 / 41

Power Line - diode modules - baseplate 34 mm - pressure contact

ND171N18K	1800	1600, 1400, 1200	170/100	5600	157.00	0.75	0.800	0.260	150	DP34 / 41
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Power Line - diode modules - baseplate 50 mm - pressure contact

ND260N12K	1200		260/100	8300	344.00	0.70	0.680	0.170	150	DP50ND / 42
ND350N16K	1600	1200	350/100	11000	605.00	0.75	0.400	0.130	150	DP50ND / 42

Single Diode Modules



Product 	$V_{\text{DRM}} / V_{\text{RRM}}$ [V]	also available $V_{\text{DRM}} V_{\text{RRM}}$ [V]	$I_{\text{FAVM}}/T_{\text{C}}$ [A/C°] @180° el sin	I_{FSM} [A] @10ms, $T_{\text{vj max}}$	$\int I^2 dt$ [A²·s · 10³] @10ms, $T_{\text{vj max}}$	$V_{\text{(T0)}}$ [V] @ $T_{\text{vj max}}$	r_{T} [mΩ] @ $T_{\text{vj max}}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Outline / page
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Power Line - single diode modules - baseplate 50 mm - pressure contact

DZ435N40K	4000	3600	435/100	12000	720	0.84	0.600	0.078	150	DP50.1 / 42
DZ540N26K	2600	2200	540/100	14000	980	0.78	0.310	0.078	150	DP50.1 / 42
DZ600N18K	1800	1600, 1400, 1200	600/100	19000	1805	0.75	0.220	0.078	150	DP50.1 / 42

Power Line - single diode modules - baseplate 70 mm - pressure contact

DZ950N44K	4400	3600	950/100	29000	4205	0.85	0.280	0.042	150	DP70 / 43
DZ1070N22K	2200	1800	1100/100	35000	6125	0.75	0.073	0.048	150	DP70A / 43
DZ1070N28K	2800	2600	1070/100	35000	6125	0.80	0.170	0.045	160	DP70 / 43
DZ1100N22K	2200		1100/100	40000	8000	0.75	0.073	0.048	150	DP70A / 43
DZ1100N22K TIM	2200		1100/100	40000	8000	0.75	0.073	0.048	150	DP70A / 43



These modules are available with „Thermal Interface Material“ (TIM). With TIM a reproducible thermal performance of power electronic systems will be achieved.

Technical drawing of the A2,8 x 0,8 connector, showing front, top, and side views with dimensions and labels.

Front View (Left):

- Dimensions: $134 \pm 0,5$ (total width), $126 \pm 0,8$ (internal width), $4 \pm 0,4$ (side flange width).
- Internal features: "internal label", "type label", "airflow" arrow pointing left.
- Pin configurations:
 - Top left: n 5,5H11x18, n 6,5 x 90° (0,30 pitch)
 - Top right: n 3,6H11x15, n 4,6 x 90° (0,30 pitch)
 - Bottom left: n 5,5H11x24, n 6,5 x 90° (0,3 pitch)
 - Bottom right: n 5,5H11x18, n 6,5 x 90° (0,3 pitch)
- Other dimensions: 8,75, 11,3, 13, 2, 35,25, 21,7, 10,45, 37, 25,75, 0,4, 100, 0,6.

Top View (Right):

- Dimensions: $59 \pm 0,8$ (total width), $55 \pm 0,5$ (internal width), 41 (pin spacing), $10,3$ (pin height), $13,45$ (pin height), $3,5$ (pin height), $15,45$ (pin height), $62,55$ (total width), $14,9$ (pin spacing), 13 (pin spacing).
- Pin configurations:
 - Top left: n 5,5H11x24, n 6,5 x 90° (0,30 pitch)
 - Top right: n 3,6H11x15 (2x), n 4,6 x 90° (2x) (0,3 pitch)
 - Bottom right: n 5,5H11x18, n 6,5 x 90° (0,3 pitch)
- Other dimensions: 7,5, 3,5, 13,45, 34, 100, 0,4, 100, 0,6.

Bottom View (Left):

- Dimensions: $20,5$ (pin spacing), $0,3$ (pin pitch).
- Pin configurations:
 - Top left: n 5,5H11x18, n 6,5 x 90° (0,30 pitch)
 - Top right: n 3,6H11x15, n 4,6 x 90° (0,30 pitch)
 - Bottom left: n 5,5H11x24, n 6,5 x 90° (0,3 pitch)
 - Bottom right: n 5,5H11x18, n 6,5 x 90° (0,3 pitch)
- Other dimensions: 8,75, 11,3, 13, 2, 35,25, 21,7, 10,45, 37, 25,75, 0,4, 100, 0,6.

Labels:

- internal label
- type label
- airflow
- Reference point
- Plug A2,8 x 0,8 BOTTOM SIDE
- Plug A2,8 x 0,8 TOP SIDE

Thyristor Discs



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{vj \max}$	$\int I^2 dt$ [A²s · 10³] @10ms, $T_{vj \max}$	$V_{(T0)}$ [V] @ $T_{vj \max}$	r_T [mΩ] @ $T_{vj \max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Clamping force [kN]	Outline / page
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Power Line - thyristor discs up to 600 V											
T690N06TOF	600	400	694/85	6700	225	0.80	0.44	51.0	140	4.0-8.0	T42.14K0 / 44
T920N06TOF	600	400, 200	925/85	12000	720	1.00	0.23	39.0	140	5.5-8.0	T48.14K0 / 44
T1410N06TOF	600	400	1490/85	20000	2000	1.00	0.10	27.0	140	12.0-24.0	T58.14K0 / 44
T2510N06TOF VT	600	400	2509/85	42000	8820	0.75	0.072	18.4	140	24.0-56.0	T75.26K0 / 45
T3710N06TOF VT	600	400	3710/85	60000	18000	0.75	0.048	12.5	140	30.0-65.0	T100.26K0 / 45

Power Line - thyristor discs up to 1800 V											
T300N16TOF	1600	1400	303/85	3400	58	0.90	1.350	69.0	125	2.5-5.0	T42.14K0 / 44
T390N16TOF	1600	1400, 1200	381/85	4250	91	0.85	0.900	62.0	125	3.0-6.0	T42.14K0 / 44
T420N18TOF	1800	1600, 1400	424/85	6400	205	0.90	0.750	56.0	125	5.0-10.0	T48.14K0 / 44
T430N18TOF	1800	1600, 1400	433/85	4600	106	0.85	0.900	51.0	125	4.0-8.0	T42.14K0 / 44
T470N16TOF	1600	1400, 1200	470/85	6350	202	0.80	0.750	51.0	125	4.0-8.0	T42.14K0 / 44
T560N18TOF	1800	1600, 1400	559/85	6900	238	0.80	0.600	44.0	125	5.0-10.0	T48.14K0 / 44
T640N18TOF	1800	1600, 1400, 1200	644/85	8000	320	0.80	0.500	39.0	125	6.0-12.0	T48.14K0 / 44
T720N18TOF	1800	1600, 1400, 1200	718/85	12500	781	0.85	0.350	38.0	125	9.0-18.0	T58.26K0 / 44
T830N18TOF	1800	1600, 1400	844/85	12500	781	0.85	0.300	30.0	125	9.0-18.0	T58.14K0 / 44
T880N18TOF	1800	1600, 1400	879/85	15500	1200	0.85	0.270	32.0	125	10.5-21.0	T58.26K0 / 44
T940N18TOF	1800	1600, 1400	959/85	15500	1200	0.85	0.270	28.0	125	10.5-21.0	T58.14K0 / 44
T1190N18TOF VT	1800	1600, 1400, 1200	1190/85	22500	2530	0.90	0.190	23.0	125	16.0-32.0	T75.26K0 / 45
T1500N18TOF VT	1800	1600, 1400	1500/85	33500	5611	0.90	0.150	18.4	125	24.0-56.0	T75.26K0 / 45
T2180N18TOF VT	1800	1600, 1400, 1200	2180/85	36000	6480	0.90	0.106	12.5	125	30.0-65.0	T100.26K0 / 45
T3160N18TOF VT	1800	1600	3160/85	57000	16245	0.85	0.082	8.5	125	42.0-95.0	T111.26K0 / 45

VT = Delivered in V_T classes

Thyristor Discs



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{vj \max}$	$\int I^2 dt$ [A²s · 10³] @10ms, $T_{vj \max}$	$V_{(T0)}$ [V] @ $T_{vj \max}$	r_T [mΩ] @ $T_{vj \max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Clamping force [kN]	Outline / page
Power Line -thyristor discs up to 3000 V											
T360N28TOF	2800	2600	360/85	4500	101	1.10	1.600	44.0	125	5.0-10.0	T48.14K0 / 44
T460N26TOF	2600	2400, 2200	459/85	9000	405	1.00	0.840	45.5	125	7.5-17.5	T58.26K0 / 44
T660N26TOF	2600	2200	659/85	11500	660	1.00	0.500	33.0	125	10.5-21.0	T58.26K0 / 44
T700N22TOF	2200		699/85	12200	744	0.95	0.450	32.0	125	10.5-21.0	T58.26K0 / 44
T740N26TOF	2600	2200	727/85	11500	660	1.00	0.500	28.0	125	10.5-21.0	T58.14K0 / 44
T1040N22TOF VT	2200		1039/85	18500	1711	0.90	0.300	23.1	125	16.0-32.0	T75.26K0 / 45
T1220N28TOF VT	2800	2600	1220/85	22500	2531	1.00	0.275	18.4	125	20.0-45.0	T75.26K0 / 45
T1330N22TOF VT	2200		1329/85	23000	2645	0.90	0.234	18.4	125	20.0-45.0	T75.26K0 / 45
T1590N28TOF VT	2800	2600	1590/85	28000	3920	1.10	0.237	12.5	125	30.0-65.0	T100.26K0 / 45
T1960N22TOF VT	2200		1960/85	35000	6125	0.90	0.150	12.5	125	30.0-65.0	T100.26K0 / 45
T2160N28TOF VT	2800	2600, 2400, 2200, 2000	2400/85	40000	8000	1.05	0.154	8.5	125	42.0-95.0	T111.26K0 / 45
T2480N28TOF VT	2800	2600	2480/85	43500	9460	0.95	0.154	8.5	125	42.0-95.0	T111.26K0 / 45
T2810N22TOF VT	2200	1800, 1600	2810/85	50000	12500	0.90	0.112	8.5	125	42.0-95.0	T111.26K0 / 45
T4771N28TOF PR	2800	2200	4340/85	91000	41400	0.77	0.107	4.8	125	63.0-91.0	T150.26K0 / 46

VT = Delivered in V_T classes

PR = Delivered with measurement protocol

Thyristor Discs



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{vj \max}$	$\int I^2 dt$ [A²s · 10³] @10ms, $T_{vj \max}$	$V_{(T0)}$ [V] @ $T_{vj \max}$	r_T [mΩ] @ $T_{vj \max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Clamping force [kN]	Outline / page
Power Line - thyristor discs up to 5500 V											
T731N44TOH	4400		870/85	16000	1280	1.08	0.650	18.5	125	15-24	T76.26K / 45
T860N36TOF VT	3600		860/85	17000	1445	1.08	0.500	21.0	125	20-45	T75.26K0 / 45
T901N36TOF	3600	3500	940/85	17000	1445	1.16	0.494	18.5	125	15-24	T76.26K / 45
T930N36TOF VT	3600		930/85	17500	1530	1.00	0.430	21.5	125	20-45	T75.26K0 / 45
T1401N42TOH	4200		1590/85	36000	6480	1.29	0.330	9.7	125	36-52	T120.35K / 46
T1451N52TOH	5200		1660/85	43000	9250	0.92	0.370	9.7	125	36-52	T120.35K / 46
T1551N52TOH PR	5200		1770/85	43000	9250	0.92	0.370	9.0	125	36-52	T120.26K / 45
T1601N36TOF	3600	3500	1900/85	44000	8400	1.00	0.250	9.0	125	36-52	T120.35K / 46
T1800N42TOF PR	4200		1800/85	41000	8405	0.85	0.400	8.5	125	36-52	T111.26K0 / 45
T1930N38TOF VT	3800	3600, 3400, 3200	2180/85	37000	6850	1.08	0.200	8.5	125	40-65	T111.26K0 / 45
T2001N36TOF	3600		2060/85	41000	8400	1.00	0.250	8.7	125	36-52	T120.26K / 45
T2351N52TOH	5200		2250/85	54000	14600	0.81	0.360	6.5	125	45-65	T120.26K / 45
T2851N52TOH	5200	4800	2980/85	79000	31000	0.77	0.235	5.4	125	63-91	T150.35K0 / 46
T3441N52TOH	5200		3200/85	79000	31000	0.77	0.235	4.8	125	63-91	T150.26K0 / 46
T3801N36TOF VT	3600		3830/85	87000	37850	0.82	0.145	4.8	125	63-91	T150.26K0 / 46
T4021N52TOH	5200		3880/85	100000	50000	0.93	0.145	4.5	125	90-130	T172.35K / 46

VT = Delivered in V_T classes

PR = Delivered with measurement protocol

Thyristor Discs



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{vj \max}$	$\int I^2 dt$ [A²s · 10³] @10ms, $T_{vj \max}$	$V_{(T0)}$ [V] @ $T_{vj \max}$	r_T [mΩ] @ $T_{vj \max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Clamping force [kN]	Outline / page
Power Line - thyristor discs up to 7500 V											
T201N70TOH PR	7000		245/85	4200	88	1.29	4.220	40.0	125	7-12	T58.26K0 / 44
T280N65TOF	6500		280/85	5800	115	1.35	2.800	43.0	125	7-12	T58.27K0 / 44
T501N70TOH	7000		640/85	13000	845	1.30	1.350	17.0	125	15-24	T75.26K0 / 45
T570N65TOF	6500		540/85	10500	442	1.35	1.400	21.0	125	13-23	T75.26K0 / 45
T1060N65TOF PR	6500		1053/85	22500	2530	1.35	0.720	11.0	125	27-45	T100.26K0 / 45
T1081N70TOH	7000	6500	1300/85	34000	5780	1.18	0.759	8.6	125	26-52	T120.26K / 45
T1620N65TOF PR	6500		1613/85	32000	5120	1.35	0.430	8.1	125	40-65	T111.26K0 / 45
T1851N70TOH	7000		1830/85	48000	11500	1.22	0.490	6.5	125	45-65	T120.26K / 45

PR = Delivered with measurement protocol

Thyristor Discs



Product 	Max. V_{DRM} V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{TAVM}/T_C [A/C°] @180° el sin	I_{TSM} [A] @10ms, $T_{vj \max}$	$\int I^2 dt$ [A²s · 10³] @10ms, $T_{vj \max}$	$V_{(T0)}$ [V] @ $T_{vj \max}$	r_T [mΩ] @ $T_{vj \max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Clamping force [kN]	Outline / page
Prime Line - electrical triggered thyristors up to 8000 V											
T1901N80TOH	8000		2100/85	65000	21100	1.24	0.440	5.4	125	63-91	T150.35K / 46
T2251N80TOH	8000	7000	2260/85	65000	21100	1.24	0.440	4.8	125	63-91	T150.26K / 46
T2871N80TOH	8000		2620/85	90000	40500	1.27	0.336	4.5	125	90-130	T172.35K / 46
T7300N85TOH	8500		5540/65	115000	66120	1.27	0.166	3.5	125	135-210	T202.35K / 46

Prime Line - light triggered thyristors up to 8000 V											
T533N80TOH	8000		540/85	10500	550	1.26	1.470	20.0	120	15-24	T76.35L / 47
T1503N80TOH	8000		1770/85	55000	15125	1.24	0.440	6.3	120	63-91	T150.40L / 47
T2563N80TOH	8000		2300/85	90000	40500	1.20	0.350	4.8	120	90-130	T172.40L / 47
T6900N80TOH	8000		4860/65	115000	66120	1.174	0.204	3.5	120	135-210	T202.40L / 47

Accessories – Laser Diode for Light Triggered Thyristors



Product	For Light Guide	Ordering Code
Laser Diode with ST connector (female)		
LASER DIODE SPL-PL90 A	For Light Guides with ST connector for disc housings T76.35L, T150.40L, T172.40L	SP000091118

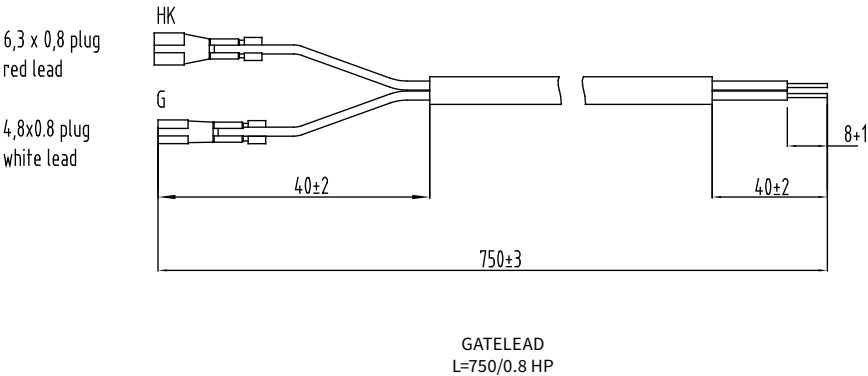
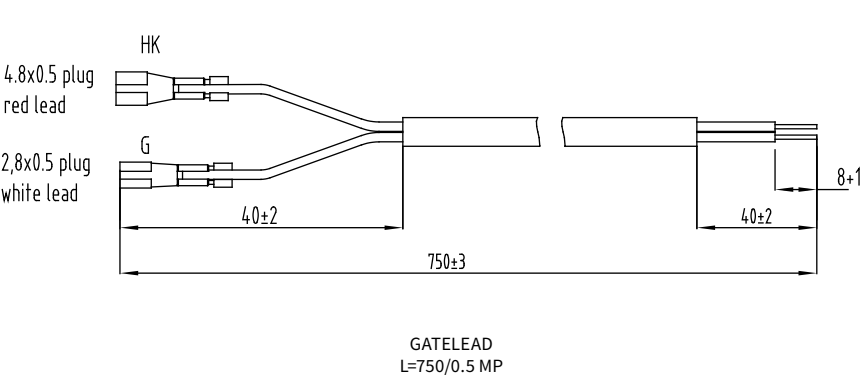
Accessories – Light Guides for Light Triggered Thyristors



Product	For disc housing	Length [mm]	Ordering Code
Light Guide with ST connector (male)			
LIGHT FIBER LWL R10-LR50-L3000 A	T76.35L	3000	SP000091119
LIGHT FIBER LWL R10-LR87-L3000	T150.40L, T172.40L	3000	SP000091117
Other lengths on request	T76.35L, T150.40L, T172.40L	1400, 4200, 6000, 15000	

Accessories – Gateleads for Disc Type Devices

Disc outline/page	Type	Color	Connector [mm]	Length [mm]	Ordering Code
Gatelead					
T42.14K0	GATELEAD L=750/0.5 MP	red/white	4.8x0.5/2.8x0.5	750	SP000983448
T48.14K0					
T58.14K0					
T58.26K0					
T75.26K0					
T100.26K0					
T111.26K0					
T120.26K	GATELEAD L=750/0.8 HP	red/white	6.3x0.8/4.8x0.8	750	SP000983442
T120.35K					
T150.26K					
T150.35K					
T172.26K					



Diode Discs



Product 	V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{FAVM}/T_C [A/°C] @180° el sin	I_{FSM} @10ms, $T_{vj\ max}$	$\int I^2 dt$ [A ² s · 10 ⁻³] @10ms, $T_{vj\ max}$	$V_{(T0)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Clamping force [kN]	Outline / page
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Power Line - rectifier diodes up to 800 V											
D650N06T	600	200	651/100	510	130	0.70	0.51	81.0	180	2.6-4.6	D42.14K0 / 48
D970N06T	600		972/100	8800	387	0.70	0.31	57.0	180	3.9-7.6	D42.14K0 / 48
D2450N06T	600	400, 200	2450/100	28500	4061	0.70	0.0975	25.3	180	12.0-24.0	D58.14K0 / 48
D5810N06T VF	600	400	5800/58	70000	24500	0.70	0.04	17.0	180	30.0-60.0	D75.26K0 / 48
D8320N06T VF	600	400	8320/56	95000	45000	0.70	0.02	12.5	180	40.0-80.0	D100.26K0 / 49

Power Line - rectifier diodes up to 1800 V											
D1050N18T	1800		1050/130	18500	1710	0.81	0.17	38.0	180	10.0-24.0	D58.26K0 / 48
D1230N18T	1800	1600, 1400	1234/100	11800	696	0.81	0.28	39.0	180	6.0-15.0	D48.14K0 / 48



Power Line - rectifier diodes up to 3000 V											
D820N22T	2200		818/100	9000	405	0.83	0.52	39.0	160	6.0-15.0	D48.14K0 / 48
D950N22T	2200	1800	950/100	10250	525	0.70	0.50	45.0	180	6.0-12.0	D42.14K0 / 48
D1030N26T	2600	2200	1030/100	14500	1051	0.82	0.28	38.0	160	10.0-24.0	D58.26K0 / 48
D2200N24T VF	2400	2200, 2000	2200/100	35000	6125	0.83	0.15	17.0	160	24.0-60.0	D75.26K0 / 48
D2520N22T VF	2200		2520/100	35000	6125	0.73	0.10	22.0	175	15.0-24.0	D76.26K0 / 48
D2650N24T VF	2400		3520 / 100	41000	5611	0.82	0.15	16.9	180	24.0-60.0	D75.26K0 / 48
D4201N22T	2200	2000	4830/100	73500	27000	0.67	0.08	9.2	160	36.0-52.0	D120.35K / 49
D4810N28T VF	2800	2200	4810/100	60000	18000	0.83	0.06	8.0	160	42.0-95.0	D111.26K0 / 49

VF = Delivered in V_F classes

Diode Discs



Product 	V_{RRM} [V]	also available V_{DRM} V_{RRM} [V]	I_{FAVM}/T_C [A/°C] @180° el sin	I_{FSM} @10ms, $T_{vj\ max}$	$\int I^2 dt$ [A²s · 10³] @10ms, $T_{vj\ max}$	$V_{(T0)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Clamping force [kN]	Outline / page
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Power Line - rectifier diodes up to 5000 V											
D740N48T	4800	4400	750/100	11000	605	0.85	0.650	39.0	160	10-24	D58.26K0 / 48
D1800N48T VF	4800	4600, 4400, 4300, 4000	1800/100	27500	3781	0.85	0.250	16.9	160	24-60	D75.26K0 / 48
D2201N45T	4500		2320/100	38000	7220	0.69	0.206	11.2	140	27-45	D100.26K0 / 49
D3501N42T	4200	4000	3690/100	56000	15700	0.73	0.130	9.2	160	36-52	D120.35K / 49
D6001N50T	5000		6070/100	110000	60500	0.80	0.090	4.6	160	63-91	D150.26K / 50

Power Line - rectifier diodes up to 10000 V											
D471N90T	9000		565/100	10000	500	1.04	1.78	31.5	160	10-16	D58.26K0 / 48
D711N68T	6800	6500, 6000	790/100	10500	550	0.84	0.87	31.5	160	10-16	D58.26K0 / 48
D1481N68T VF	6800	6500	1650/100	24500	3000	0.75	0.42	15.8	160	15-36	D76.26K / 49
D1721NH90T	9000		1670/85	35000	5780	1.36	0.65	7.5	140	36-52	D120.26K / 49
D2601N90T	9000	8500	2240/100	50000	12500	0.94	0.41	8.55	160	36-52	D120.26K / 49
D2601NH90T	9000		1440/85	22000	12500	0.94	0.41	8.55	160	36-52	D120.26K / 49
D3001N68T	6800		2900/100	53000	14040	0.84	0.22	9.2	160	36-52	D120.35K / 49
D3041N68T	6800	6500, 6000	3040/100	53000	14040	0.84	0.22	8.55	160	36-52	D120.35K / 49

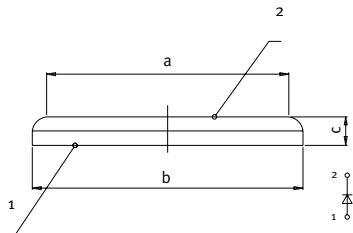
VF = Delivered in V_F classes

Welding Diodes



Product	V_{RRM} [V]	I_{FAVM}/T_C [A/°C] @180° el sin	I_{FSM} @10ms, $T_{vj\ max}$	$\int I^2 dt$ [A²S · 10³] @10ms, $T_{vj\ max}$	$V_{(T0)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Clamping force [kN]
Power Line – welding and lightning protection diodes									
38DN06B02	600	8075/100	32300.0	5200	0.74	0.049	11.5	180	15-30
46DN06B02	600	5100/118	48000.0	11520	0.7	0.047	9.4	180	25-45
56DN06B02	600	10300/100	70000.0	24500	0.73	0.024	5.8	180	30-45
65DN06B02	600	12810/100	95000.0	45100	0.76	0.018	4.7	180	40-80

Designation	a [mm]	b [mm]	c [mm]
38DN06B02	Ø 34	Ø 38	4
46DN06B02	Ø 43	Ø 46	4
56DN06B02	Ø 50	Ø 56	5
65DN06B02	Ø 58	Ø 65	5



IGCT/IGBT – Freewheeling Diodes



Product	V_{RRM} [V]	$I_{FAVM/TC}$	I_{FSM} @10ms, $T_{vj\ max}$	$\int I^2 dt$ [A ² S · 10 ³] @10ms, $T_{vj\ max}$	$V_{(T0)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Q_R [mAs] @di/dt = 1000 A/μs $I_{FM} = 2.5\ kA, T_{vj\ max}$	I_{RM} [A] @di/dt = 1000 A/μs $I_{FM} = 2.5\ kA, T_{vj\ max}$	Clamping force [kN]	Outline / page
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Power Line - IGCT/IGBT - freewheeling diodes												
D931SH65T	6500	940/85	16000	1280	1.99	1.440	11.1	140	3.50	1300	27-45	D100.26K / 49
D1031SH45T	4500	1120/85	23000	2645	1.78	0.968	10.0	140	3.50	1500	27-45	D100.26K / 49
D1131SH65T	6500	1100/85	22000	2420	2.19	1.364	7.50	140	3.50	1200	36-52	D120.26K / 49
D1301SH45T	4500	1350/85	28000	3920	1.8	0.994	7.50	140	6.0	3600	36-52	D120.26K / 49
D1331SH45T	4500	1310/85	28000	3920	1.83	0.948	7.50	140	3.50	1500	36-52	D120.26K / 49
D1821SH45T	4500	1710/85	40000	8000	1.54	0.825	5.60	140	7.0	3600	53-96	D120.26K / 49
D1961SH45T	4500	1830/85	40000	8000	1.25	0.500	7.50	140	12.00	2250	36-52	D120.26K / 49

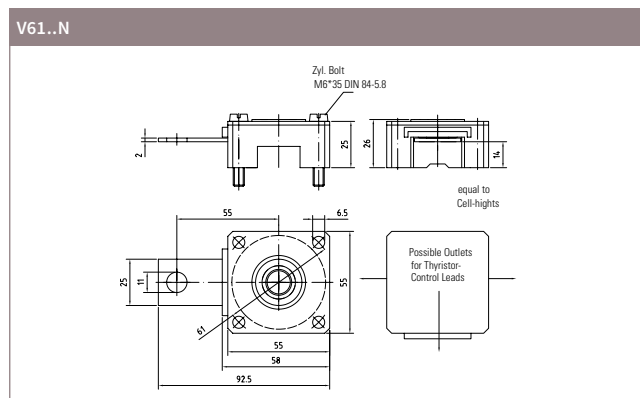
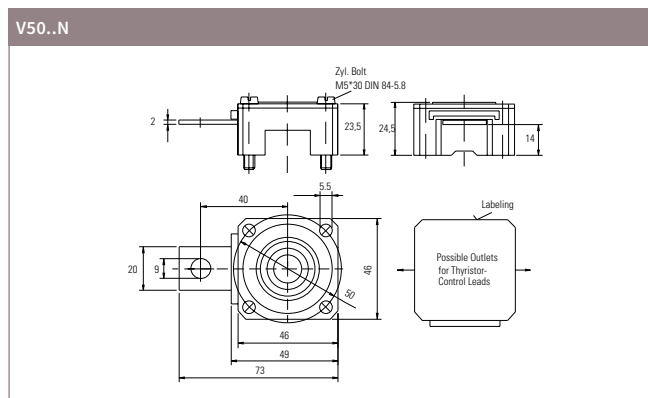
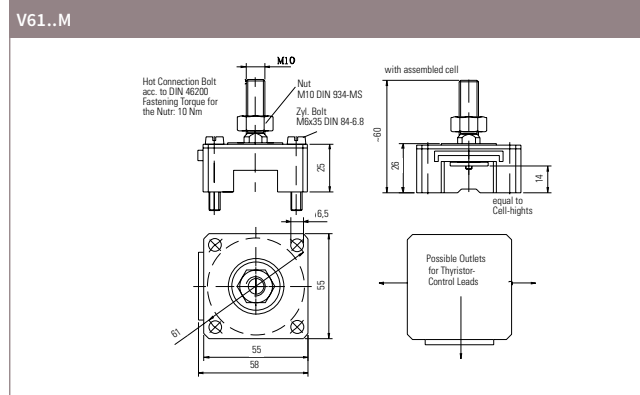
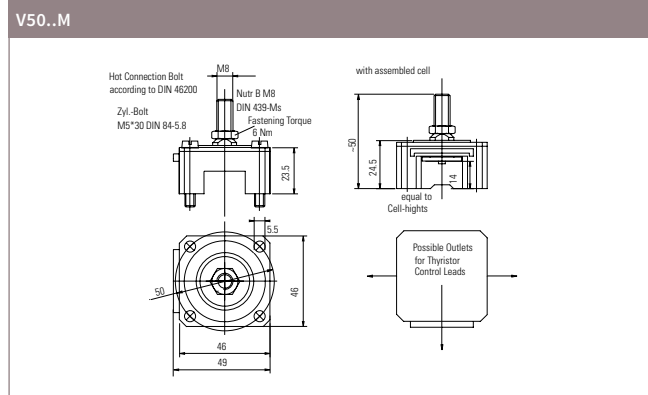
Product	V_{RRM} [V]	$I_{FAVM/TC}$	I_{FSM} @10ms, $T_{vj\ max}$	$\int I^2 dt$ [A ² S · 10 ³] @10ms, $T_{vj\ max}$	$V_{(T0)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @180° el sin	T_{vj} [°C] max	Q_R [mAs] @di/dt = 5000 A/μs $I_{FM} = 2.5\ kA, T_{vj\ max}$	I_{RM} [A] @di/dt = 1000 A/μs $I_{FM} = 2.5\ kA, T_{vj\ max}$	Clamping force [kN]	Outline / page
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Prime Line - IGBT - freewheeling diodes												
D1600U45X122	4500	1680/55	28000	3920	1.80	0.994	7.50	140	6.00	3600	36-65	D120.26K / 49
D2700U45X122	4500	2900/55	48000	11500	1.38	0.447	5.60	140	9.50	4200	50-100	D120.26K / 49
D4600U45X172	4500	4780/55	80000	32000	1.25	0.300	3.30	140	13.00	5500	50-130	D172.26K / 50
D3200W45X122	4500	3470/55	63500	20160	1.25	0.300	5.60	140	9.50	4200	50-100	D120.26K / 49

Clamping Units for Discs



Product	For disc diameter [mm]	For disc height [mm]	Clamping force [kN]	Min. creeping distance [mm]	Ordering Code
Clamping Unit					
V50-14.45M	42	14	4.5	11	SP000096563
V50-14.45N	42	14	4.5	11	SP000090625
V50-14.60M	42	14	6	11	SP000096564
V50-14.60N	42	14	6	11	SP000090626
V61-14.80M	48	14	8	11	SP000096565
V61-14.80N	48	14	8	11	SP000090627

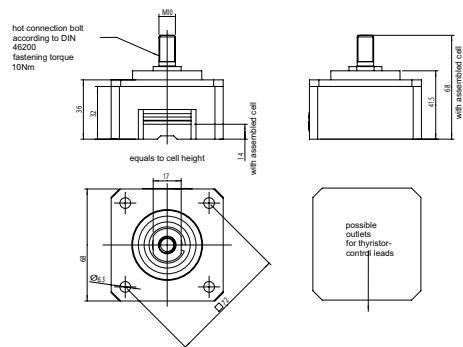


Clamping Units for Discs

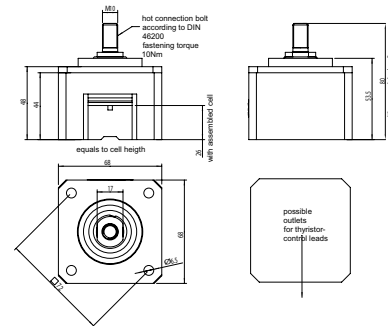


Product	For disc diameter [mm]	For disc height [mm]	Clamping force [kN]	Min. creeping distance [mm]	Ordering Code
Clamping Unit					
V72-14.150M	58	14	15	11	SP000096566
V72-26.80M	58	26	8	23	SP000096569
V72-26.120M	58	26	12	23	SP000096567
V72-26.150M	75	26	15	23	SP000096568
V89-26.300N	75	26	30	26	SP000090624
V89-26.400N	75	26	40	26	SP000090662
V100-35.200N	75	26	20	26	SP000090635

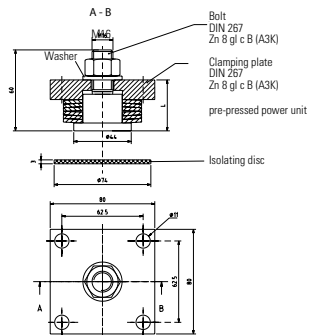
V72-14..M



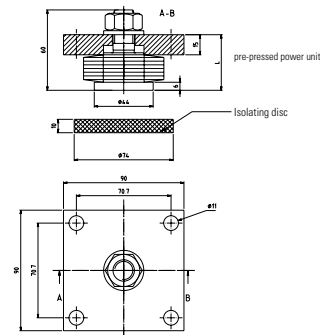
V72-26..M



V 89

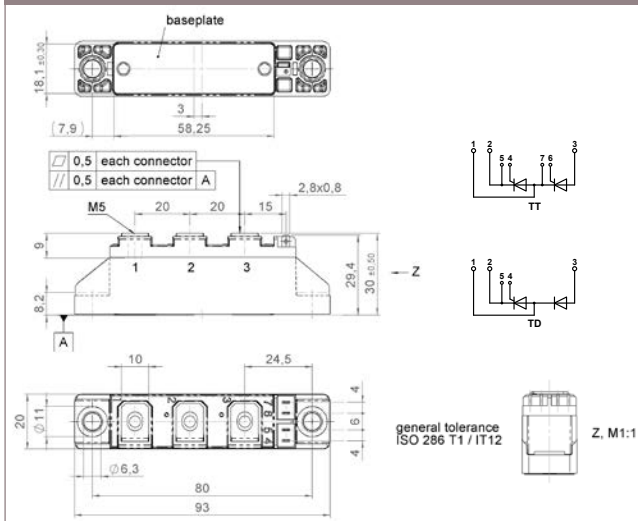


V 100

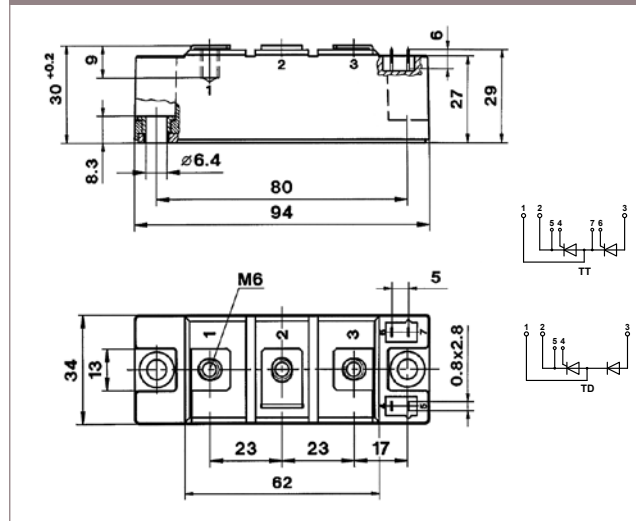


Outlines Thyristor Modules

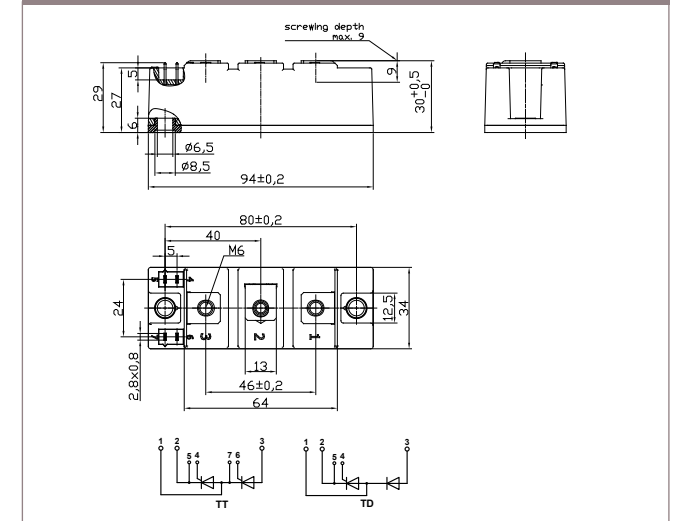
20 mm - TS20



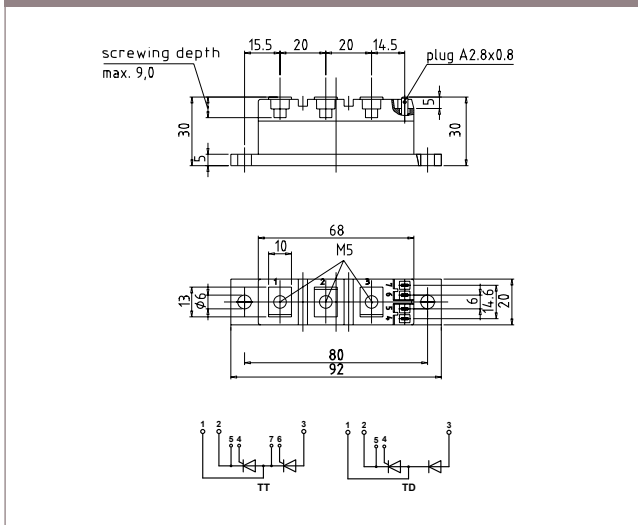
34 mm - TS34



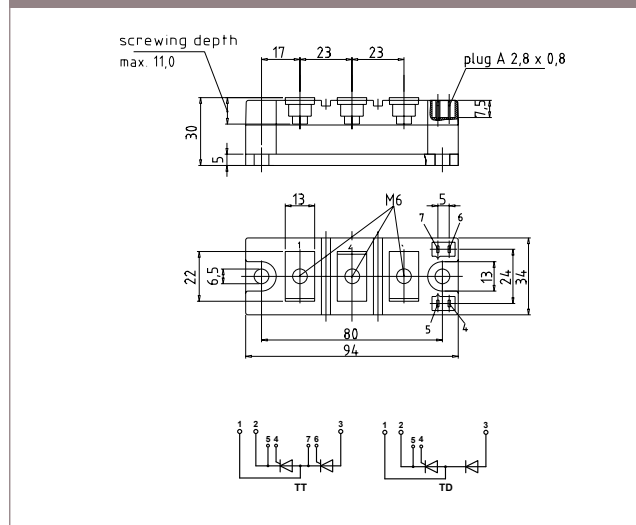
TS34 2nd Gen



20 mm - TP20

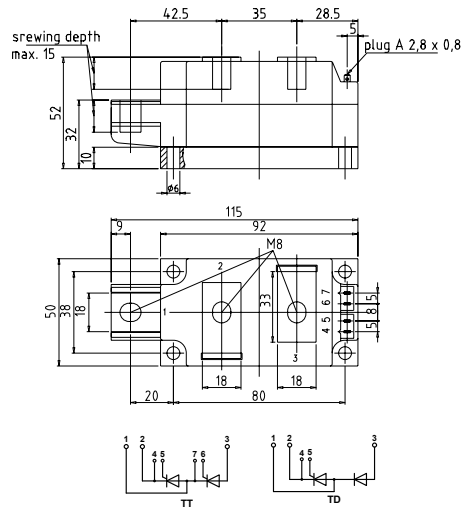


34 mm - TP34

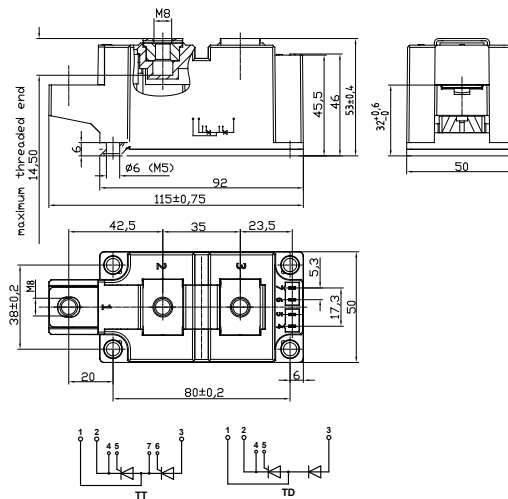


Outlines Thyristor Modules

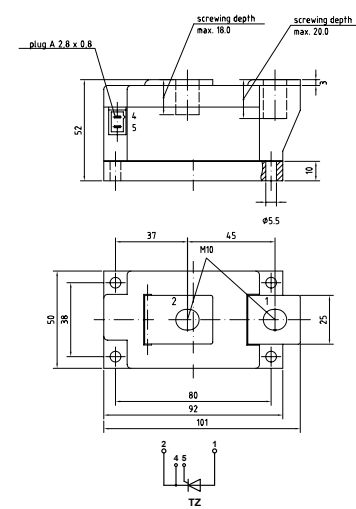
50 mm - TP50



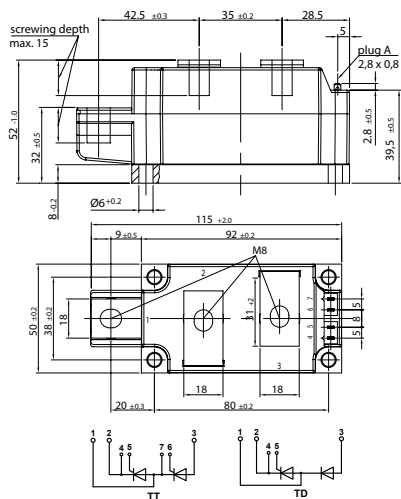
50 mm - TS50



50 mm - TP50.1

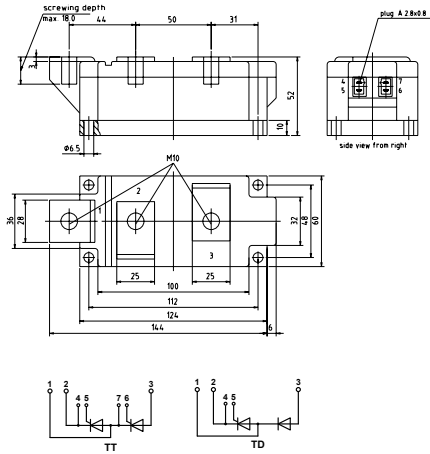


50 mm - TP50A

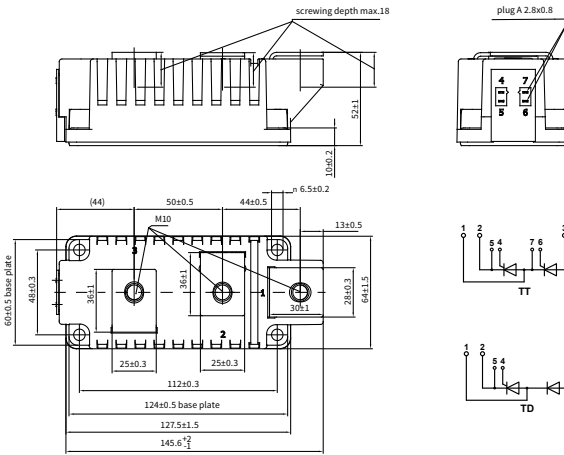


Outlines Thyristor Modules

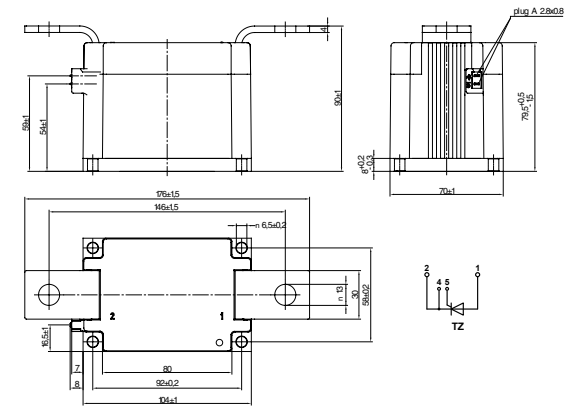
60 mm - TP60



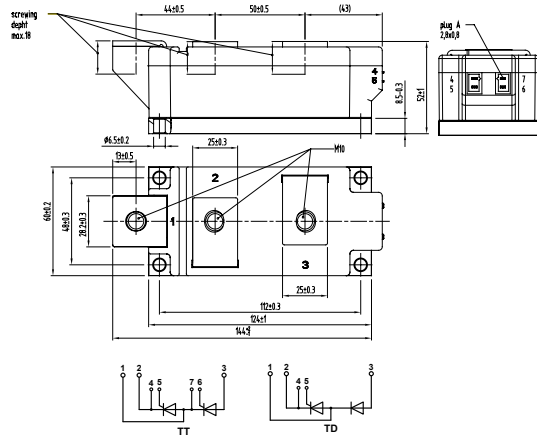
60 mm - TE60



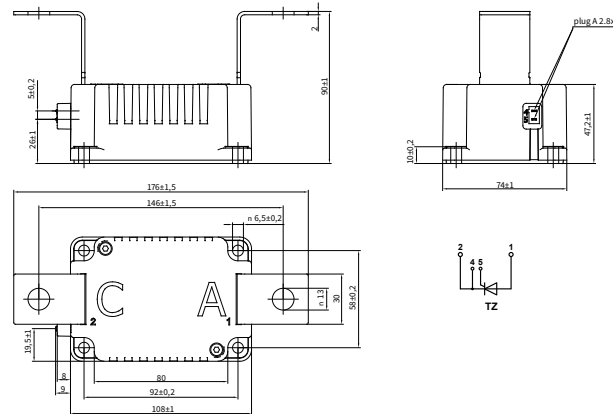
70 mm - TP70A



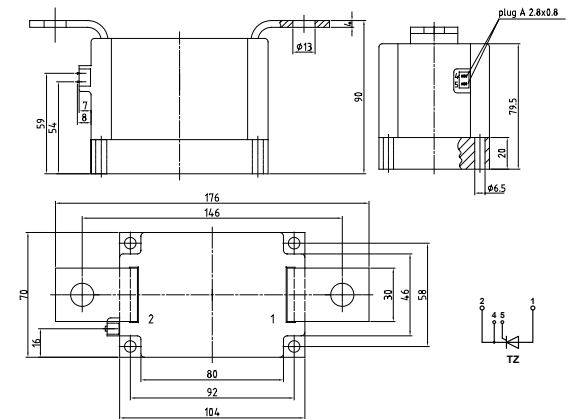
60 mm - TP60A



70 mm - TE70

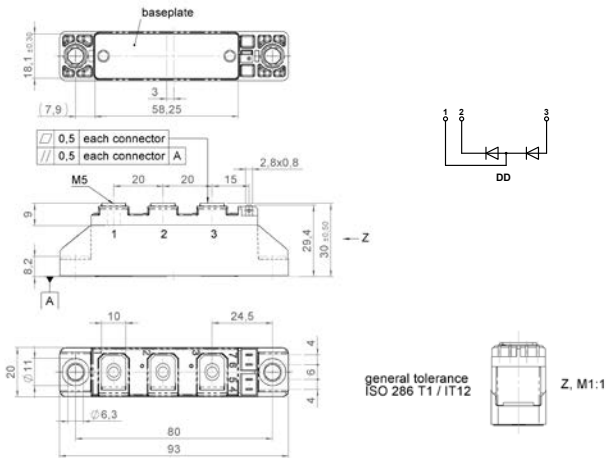


70 mm - TP70

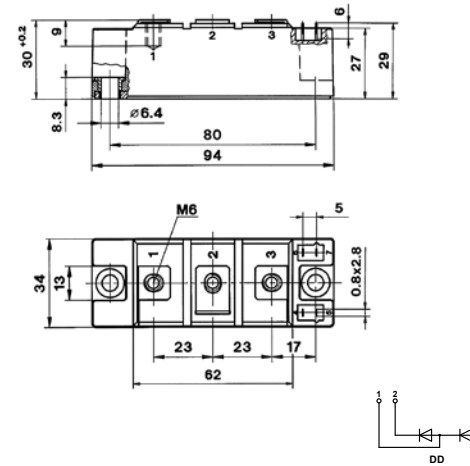


Outlines Diode Modules

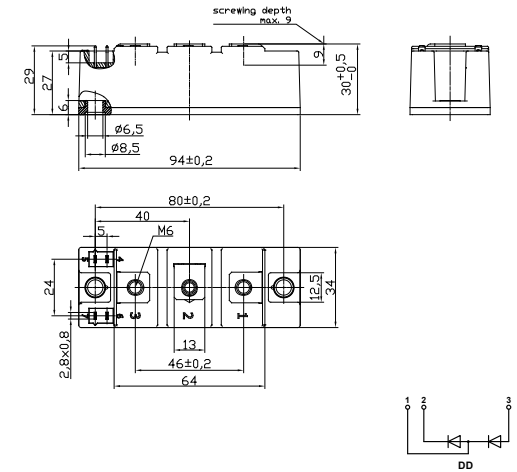
20 mm - DS20



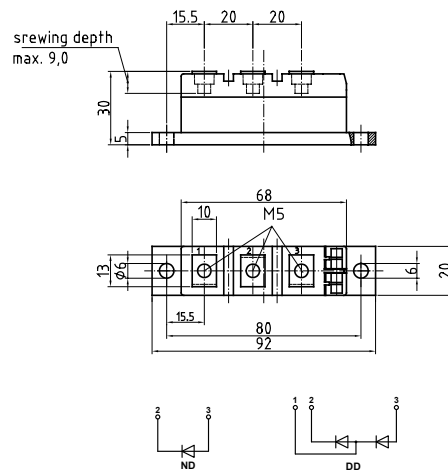
34 mm - DS34



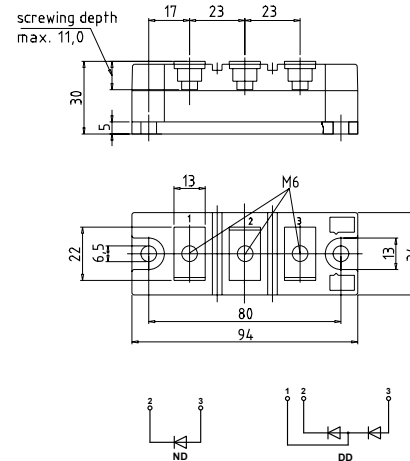
34 mm - DS34 2nd Gen



20 mm - DP20

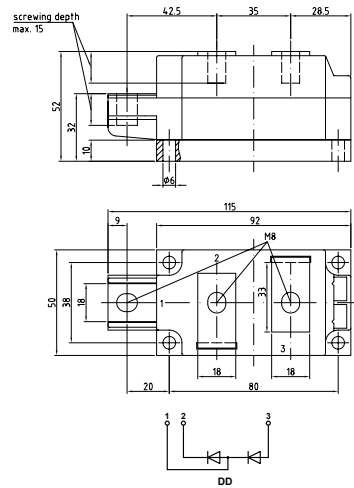


34 mm - DP34

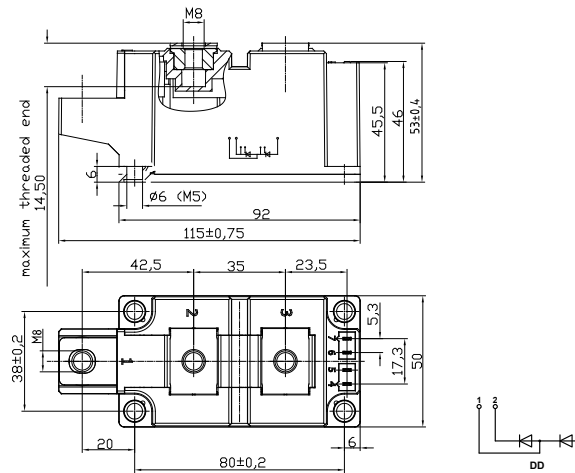


Outlines Diode Modules

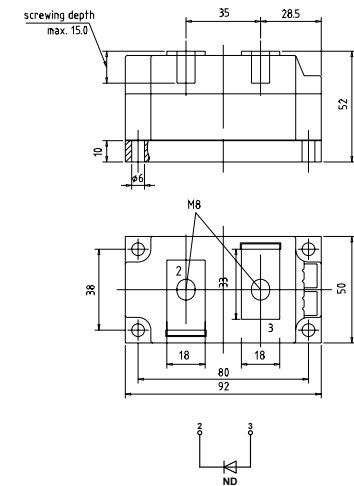
50 mm - DP50



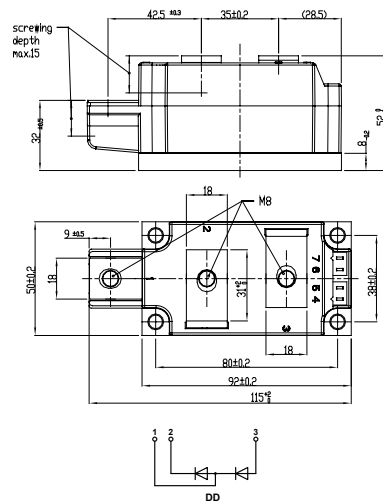
50 mm - DS50



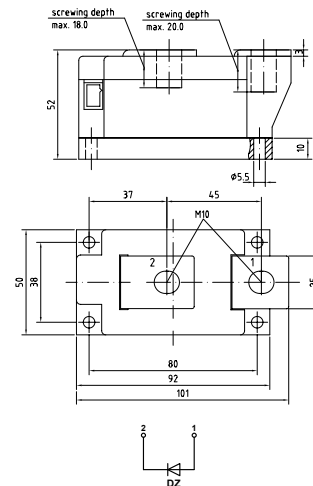
50 mm - DP50ND



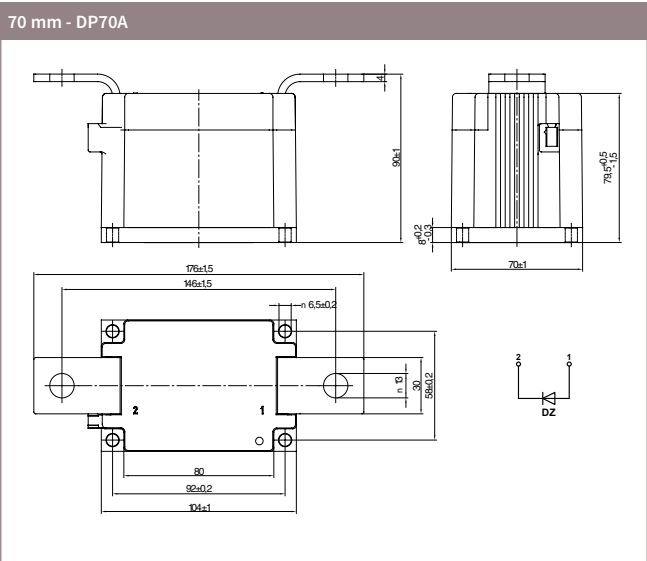
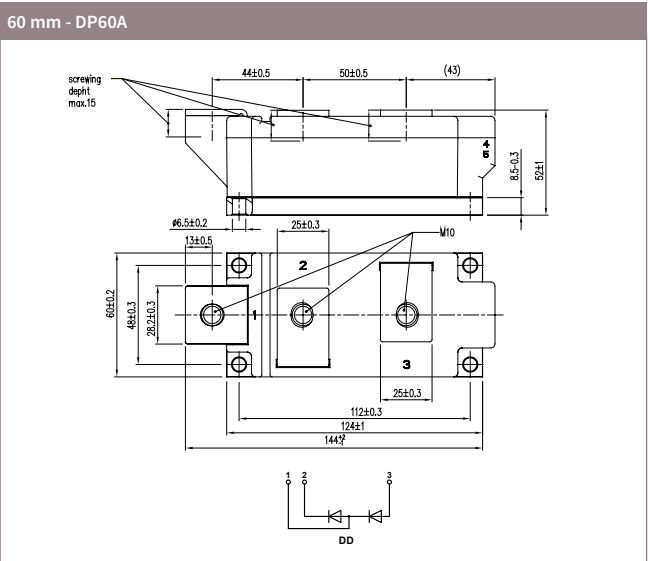
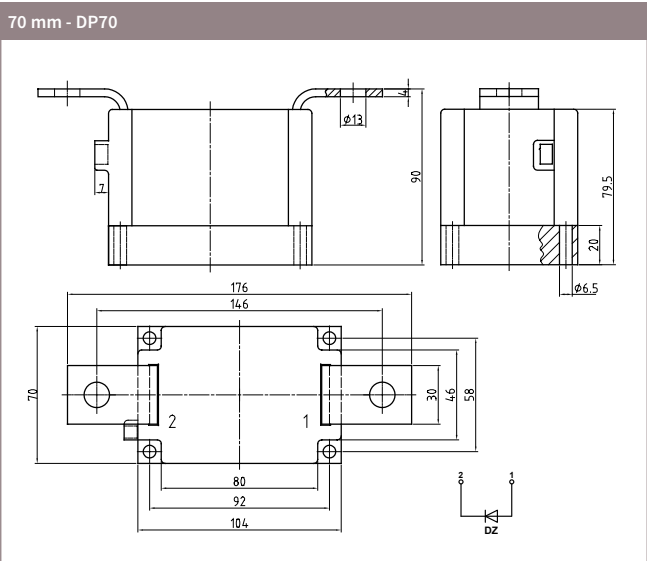
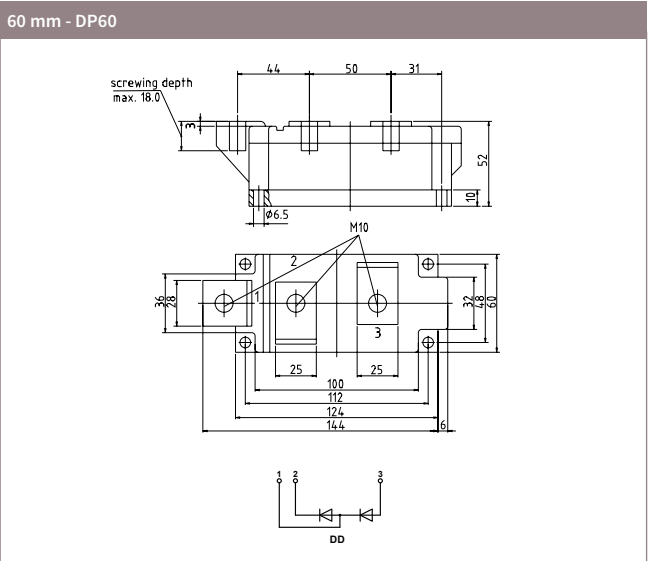
50 mm - DP50A



50 mm - DP50.1



Outlines Diode Modules

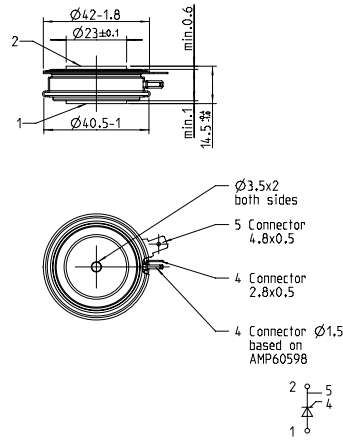


Package Units

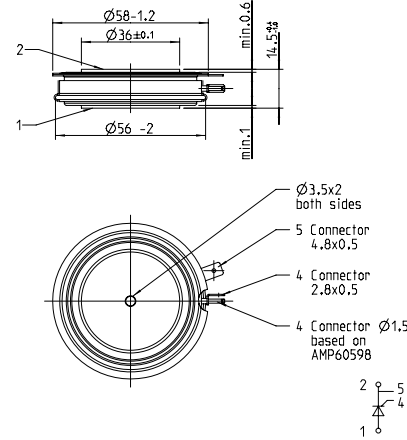
Outline	Packging units
Power block modules	
DP20	15
DS20	12
DP34	8
DS34	10
DP50	3
DP50.1	3
DP50A	3
DP50ND	3
DP60	2
DP60A	2
DP70	1
DP70A	1
TP20	15
TS20	12
TP34	8
TS34	10
TP50	3
TP50.1	3
TP50A	3
TP60	2
TP60A	2
TP70	1
TP70A	1

Outlines Thyristor Discs

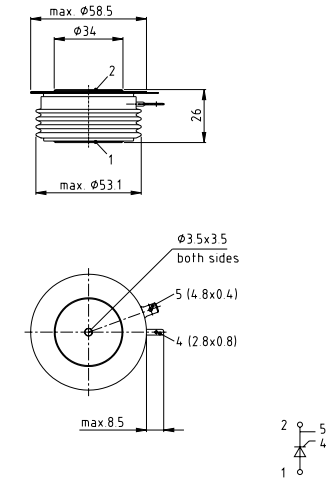
T42.14K0



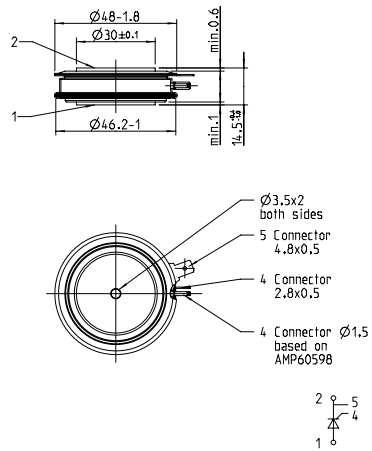
T58.14K0



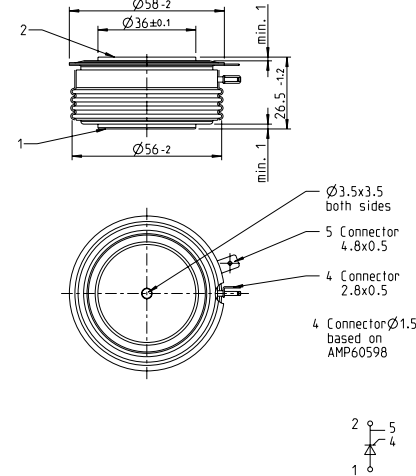
T58.26K



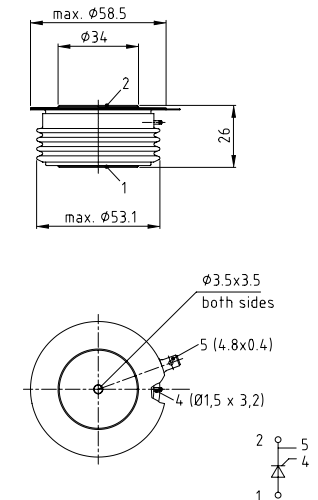
T48.14K0



T58.26K0

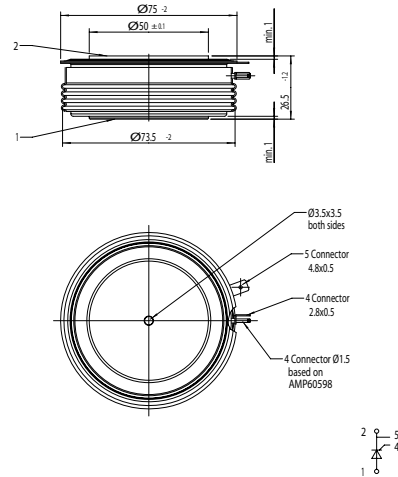


T58.26K1

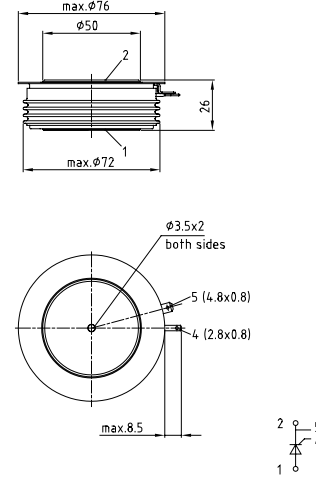


Outlines Thyristor Discs

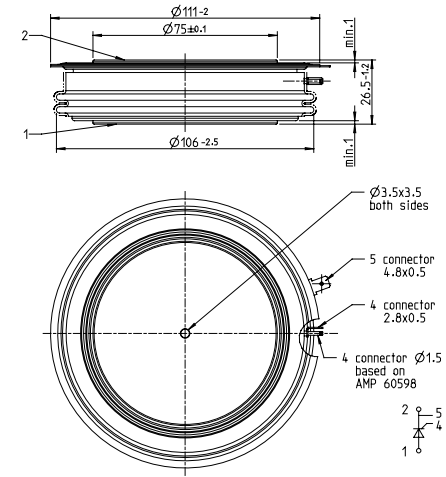
T75.26K0



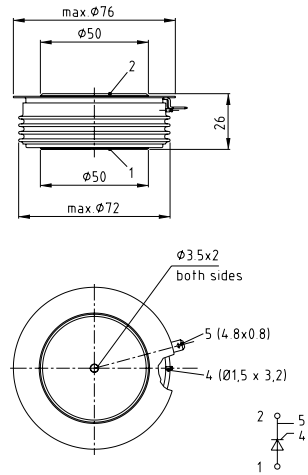
T76.26K



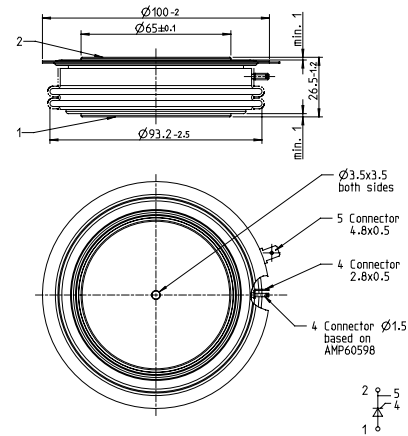
T111.26K0



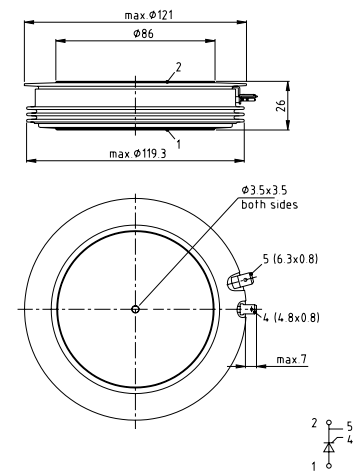
T75.26K1



T100.26K0

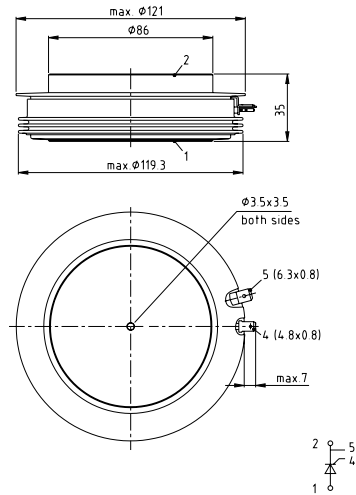


T120.26K

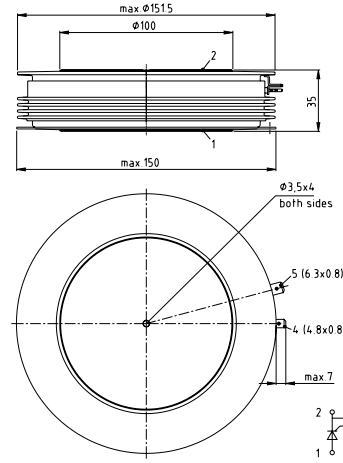


Outlines Thyristor Discs

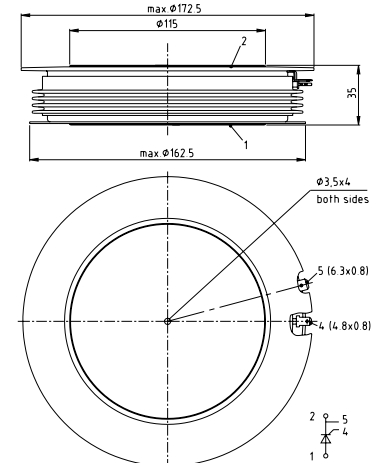
T120.35K



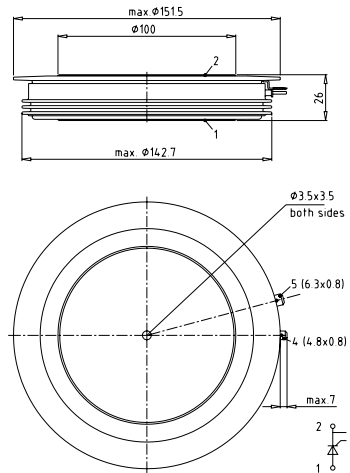
T150.35K



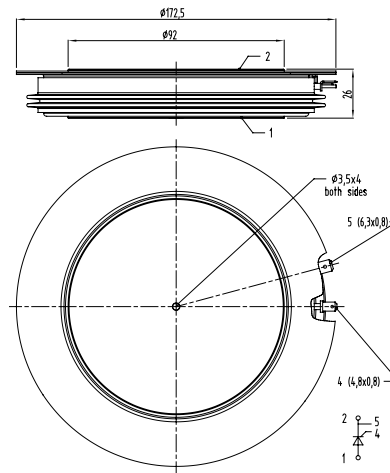
T172.35K



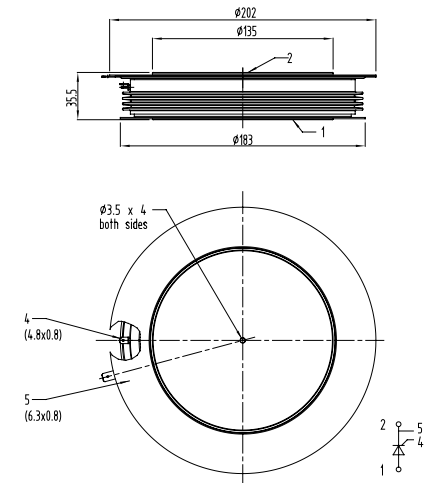
T150.26K



T172.26K

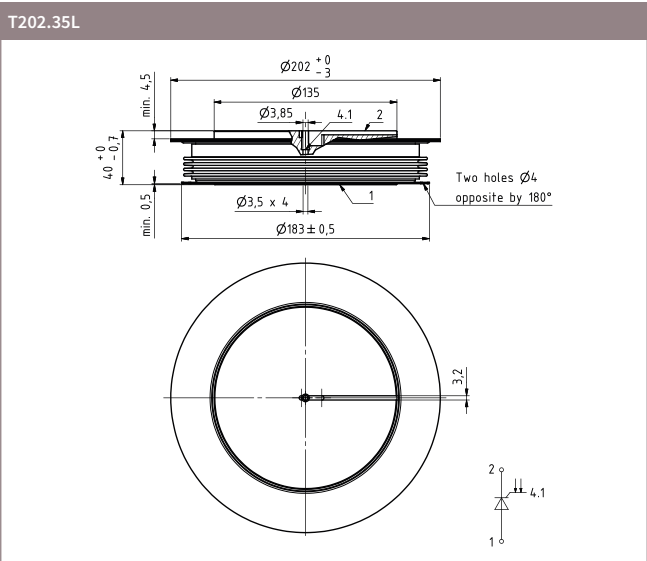
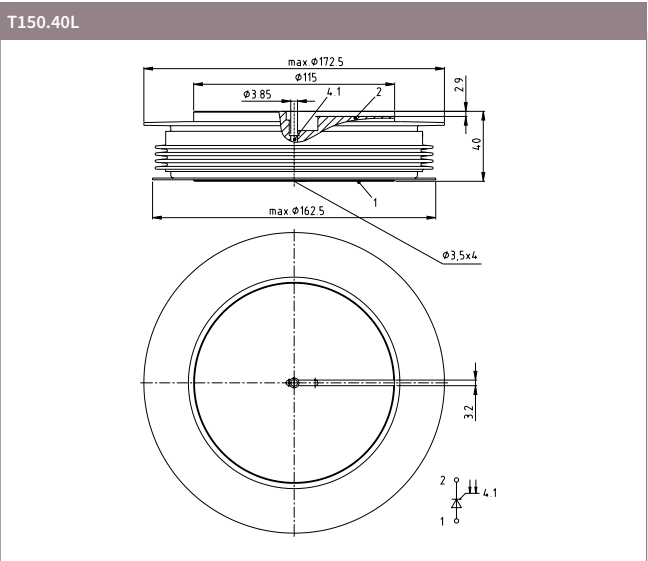
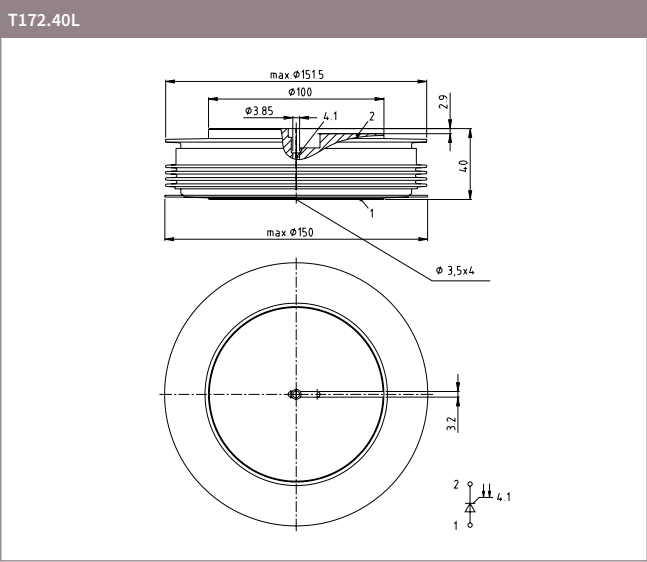
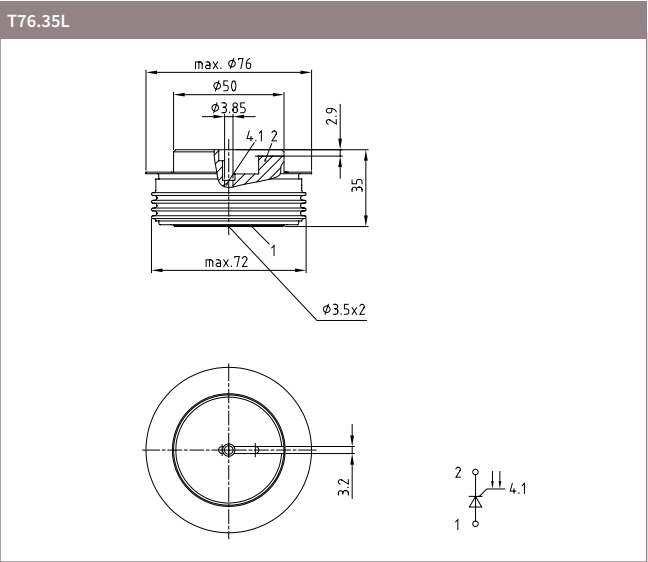


T202.35K



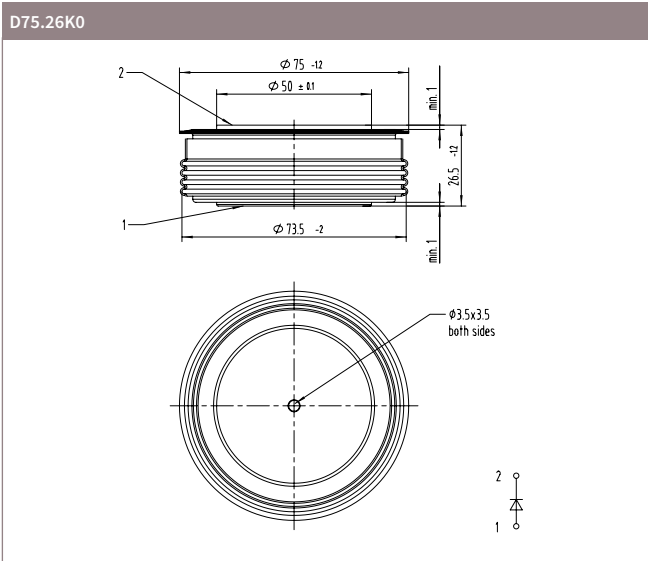
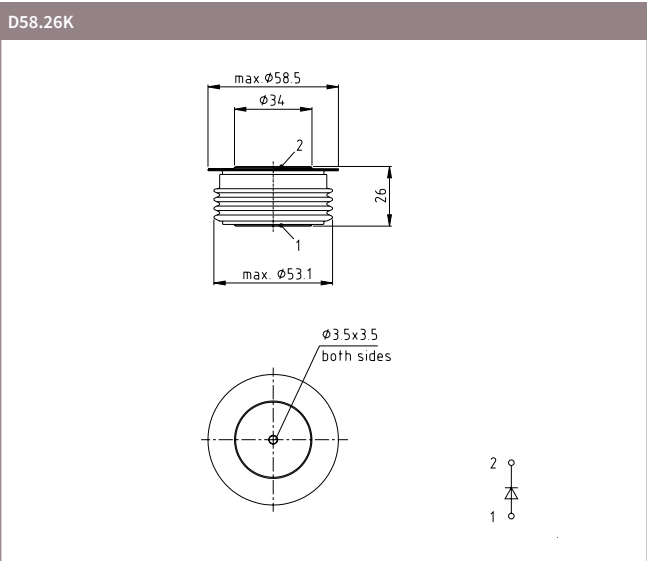
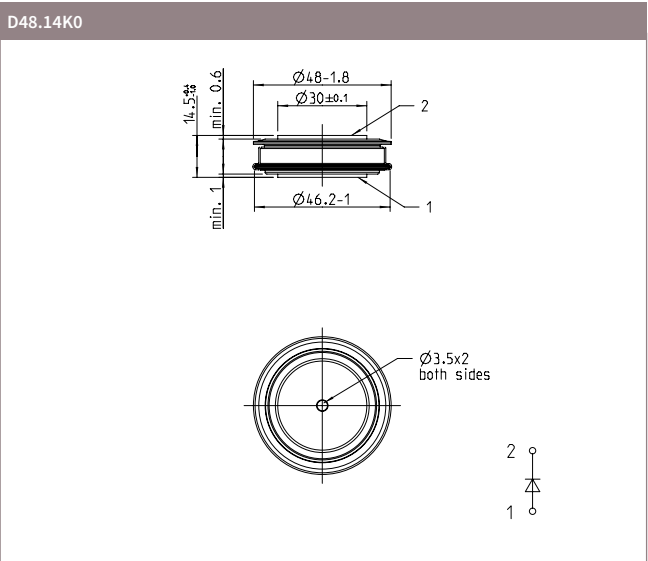
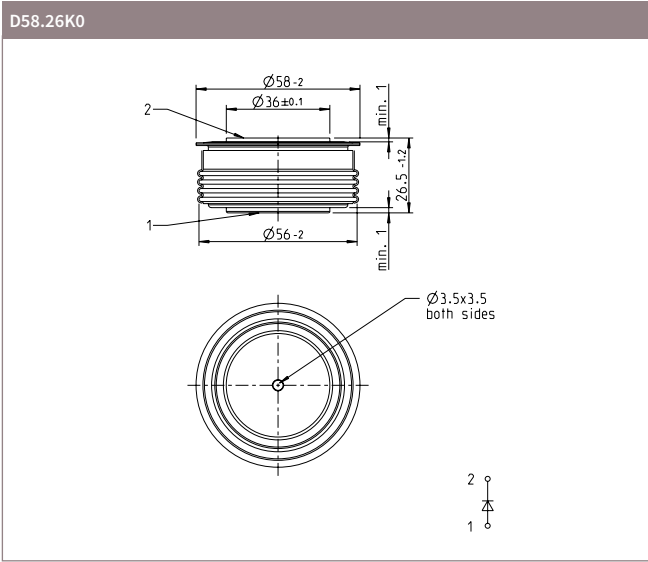
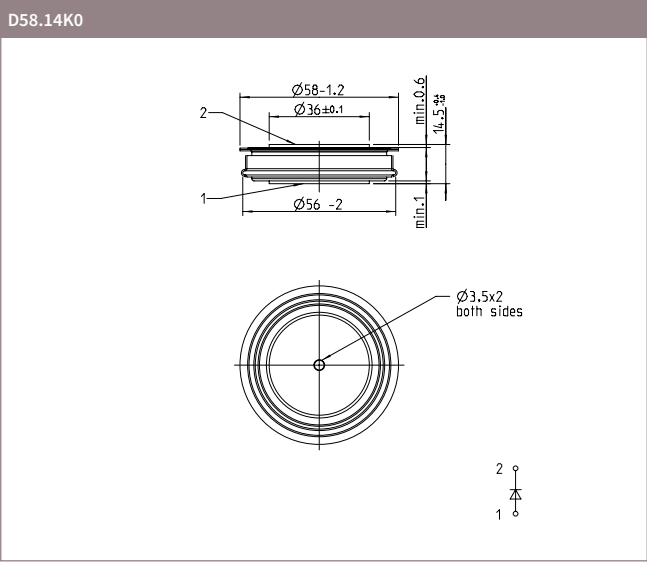
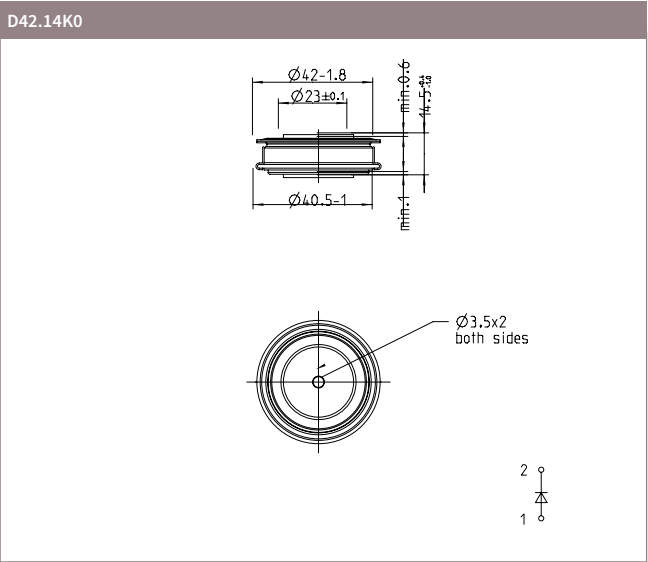
Outlines Light Triggered Thyristors

Package Units

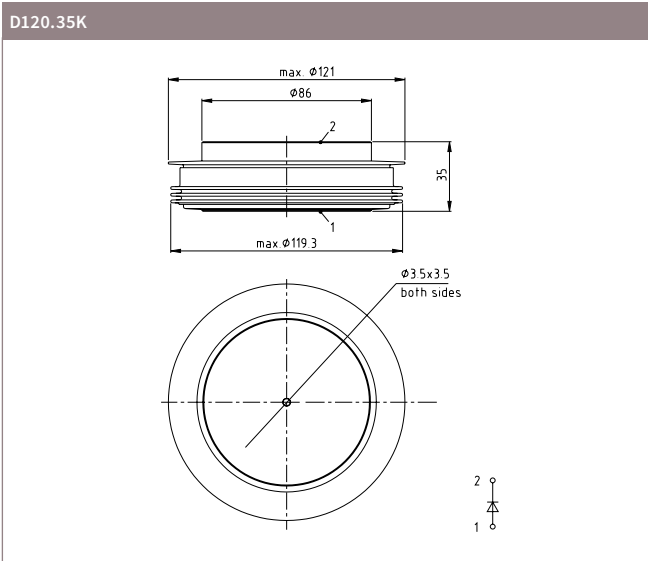
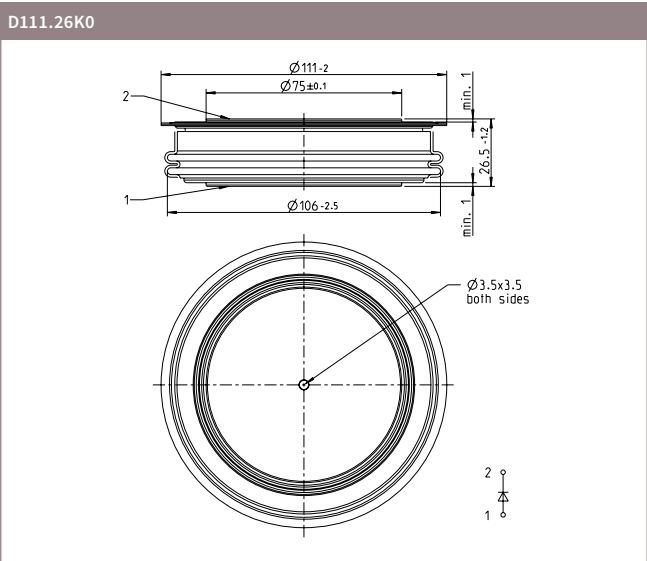
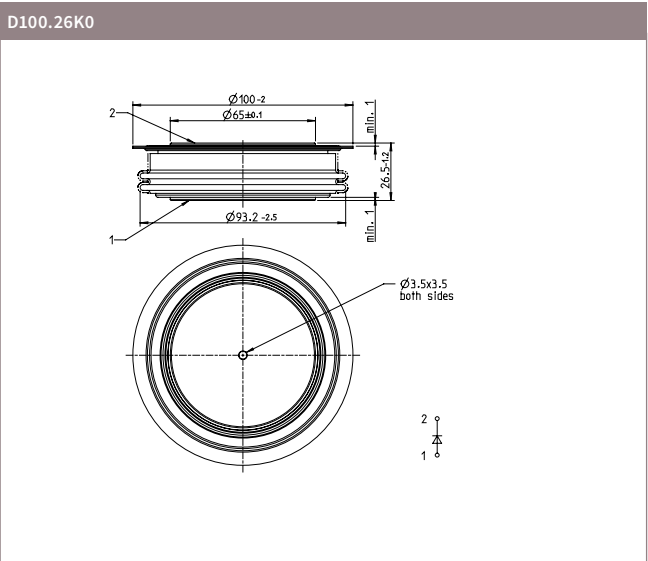
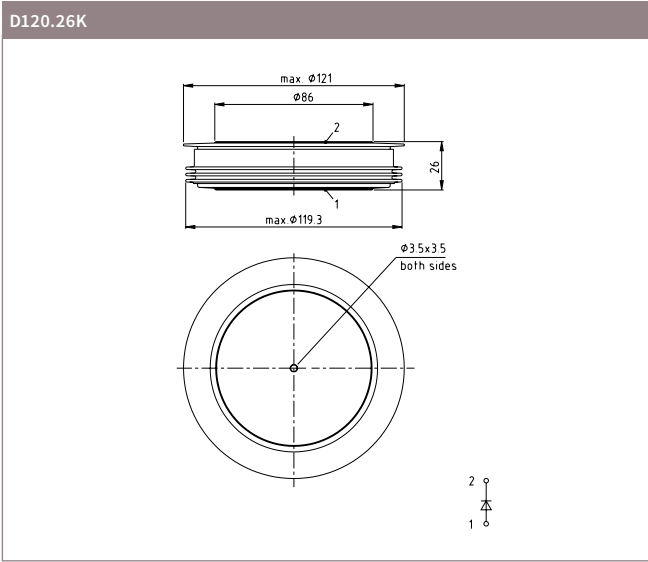
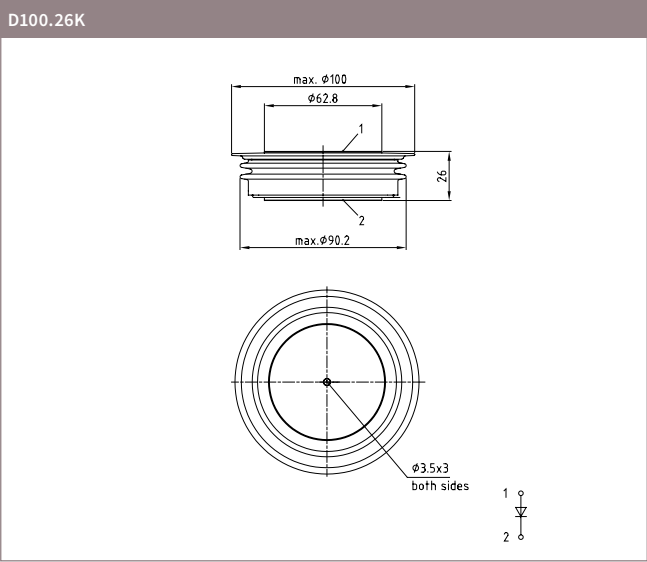
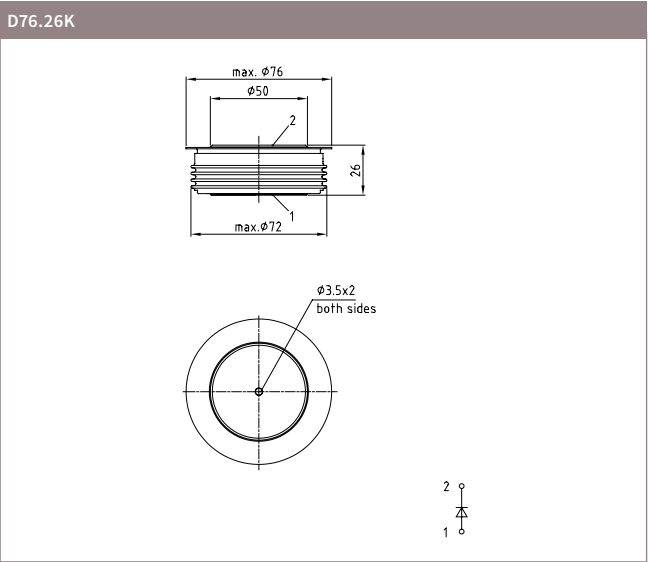


Outline	Packging units
Presspacks	
T42.14K0	18
T48.14K0	12
T58.14K0	9
T58.26K0	6
T75.26K0	4
T76.26K	4
T76.35L	4
T100.26K0	2
T111.26K0	2
T120.26K	2
T120.35K	2
T150.35K	1
T150.40L	1
T172.26K	1
T172.35K	1
T172.40L	1
T202.35K	1

Outlines Diode Discs

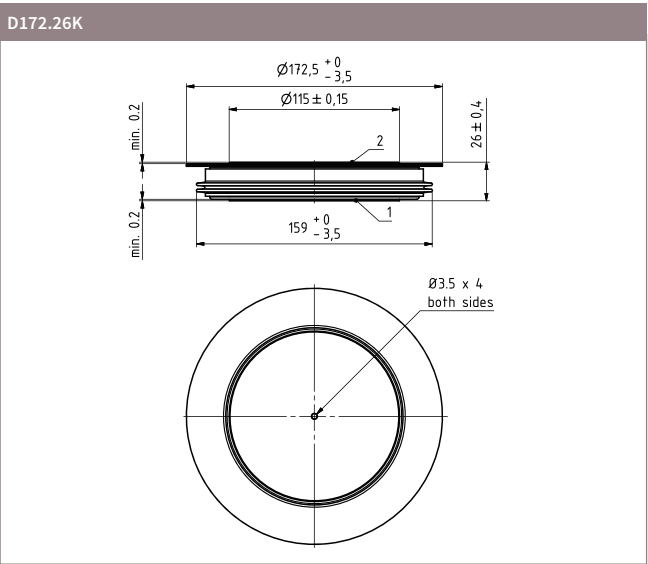
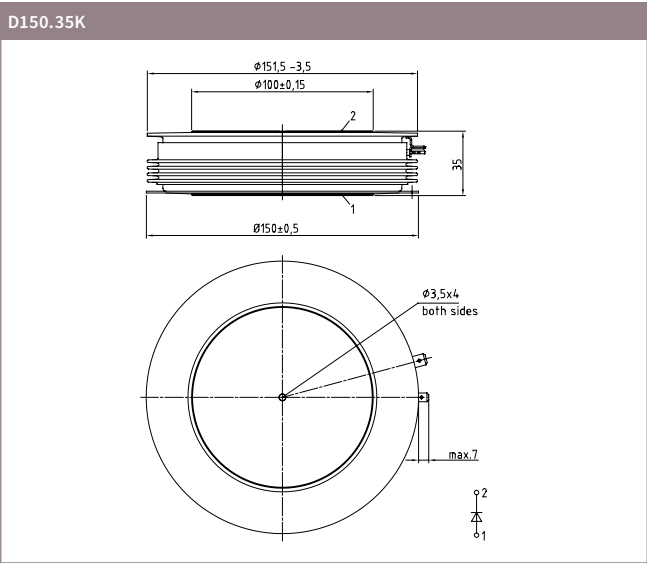
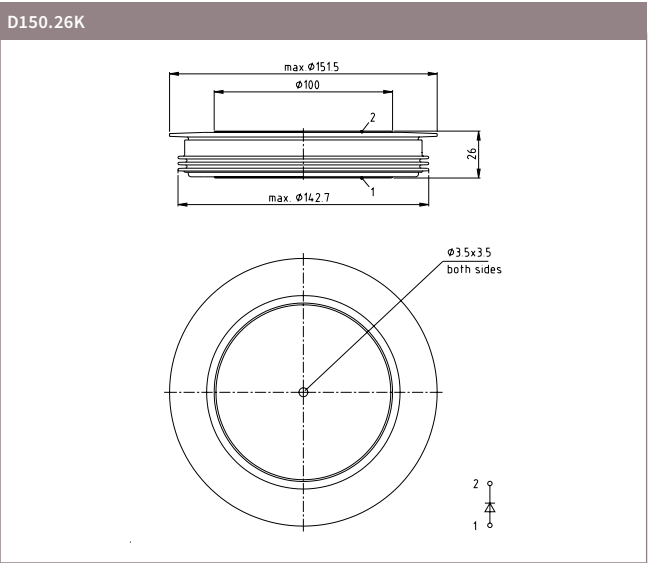


Outlines Diode Discs



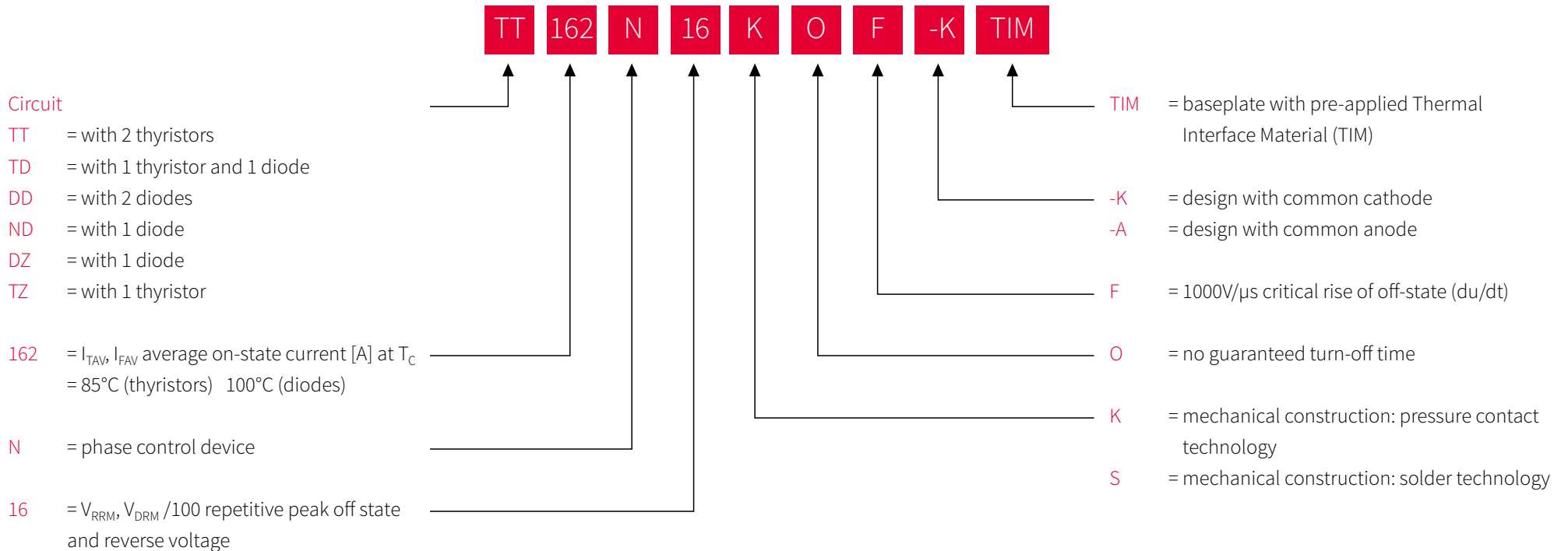
Outlines Diode Discs

Package Units

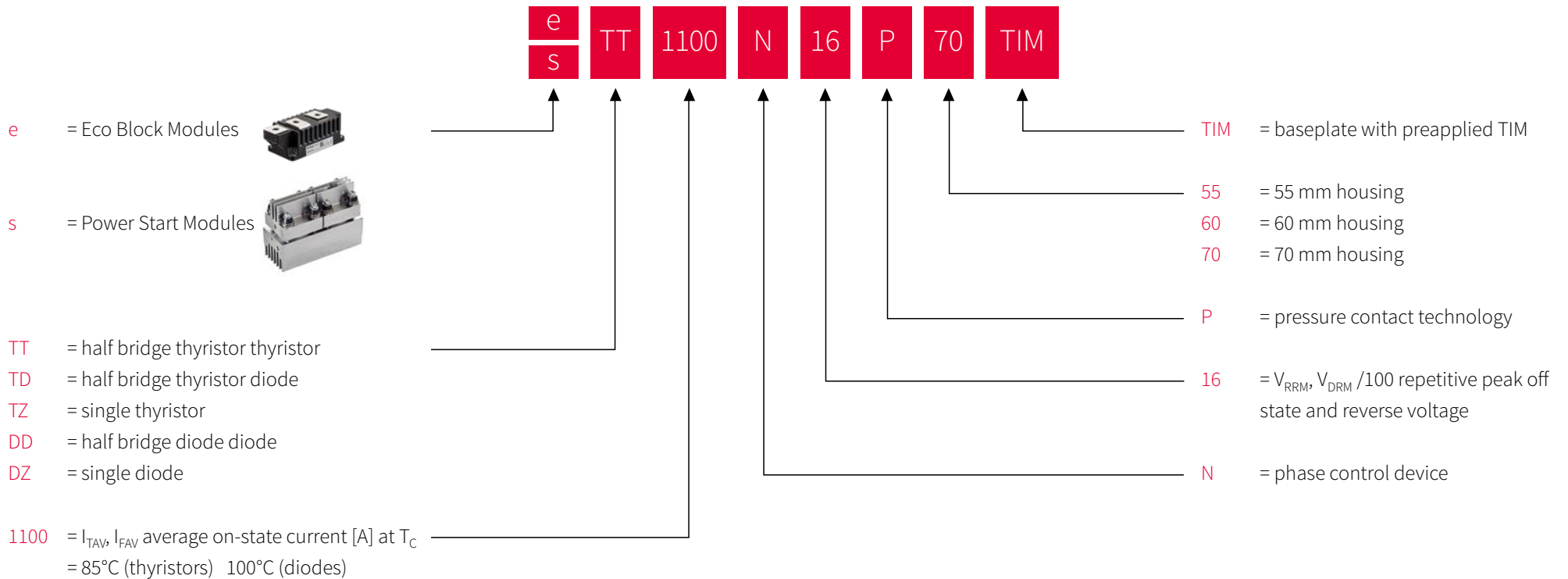


Outline	Packiging units
Diode Discs	
D42.14K0	18
D48.14K0	12
D58.14K0	9
D58.26K0	6
D75.26K0	4
D76.26K	4
D100.26K0	2
D111.26K0	2
D120.26K	2
D120.35K	2
D150.26K	1
D150.35K	1

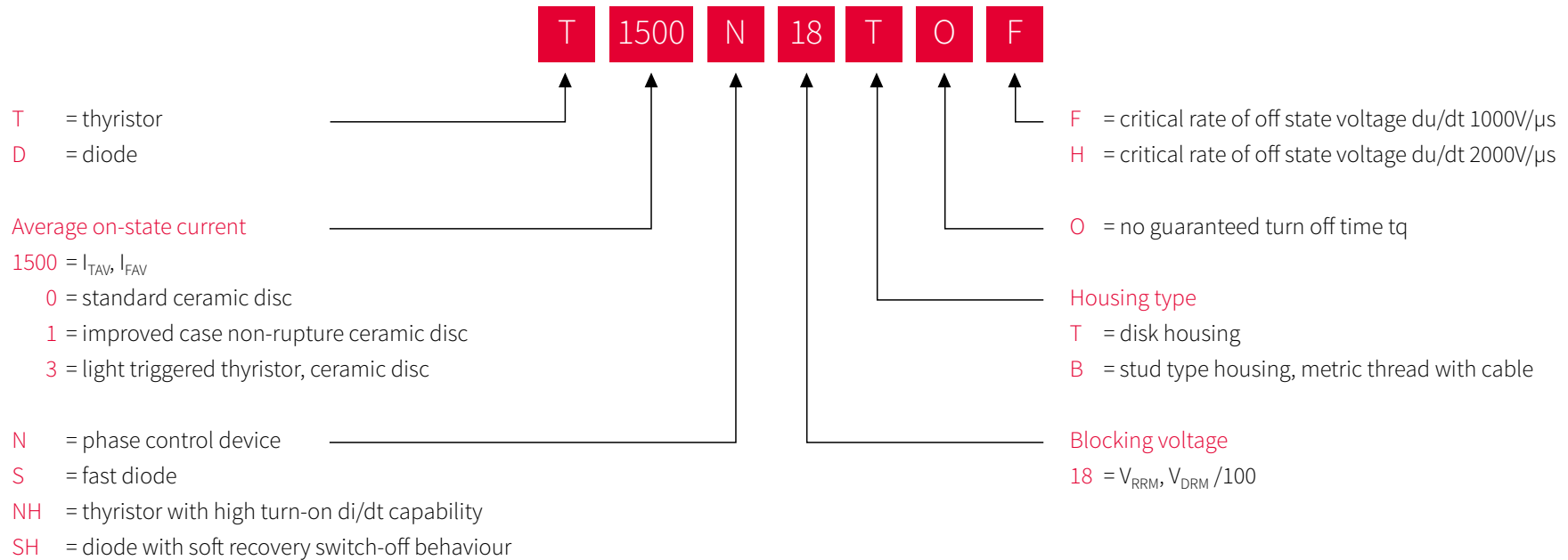
Naming for standard modules



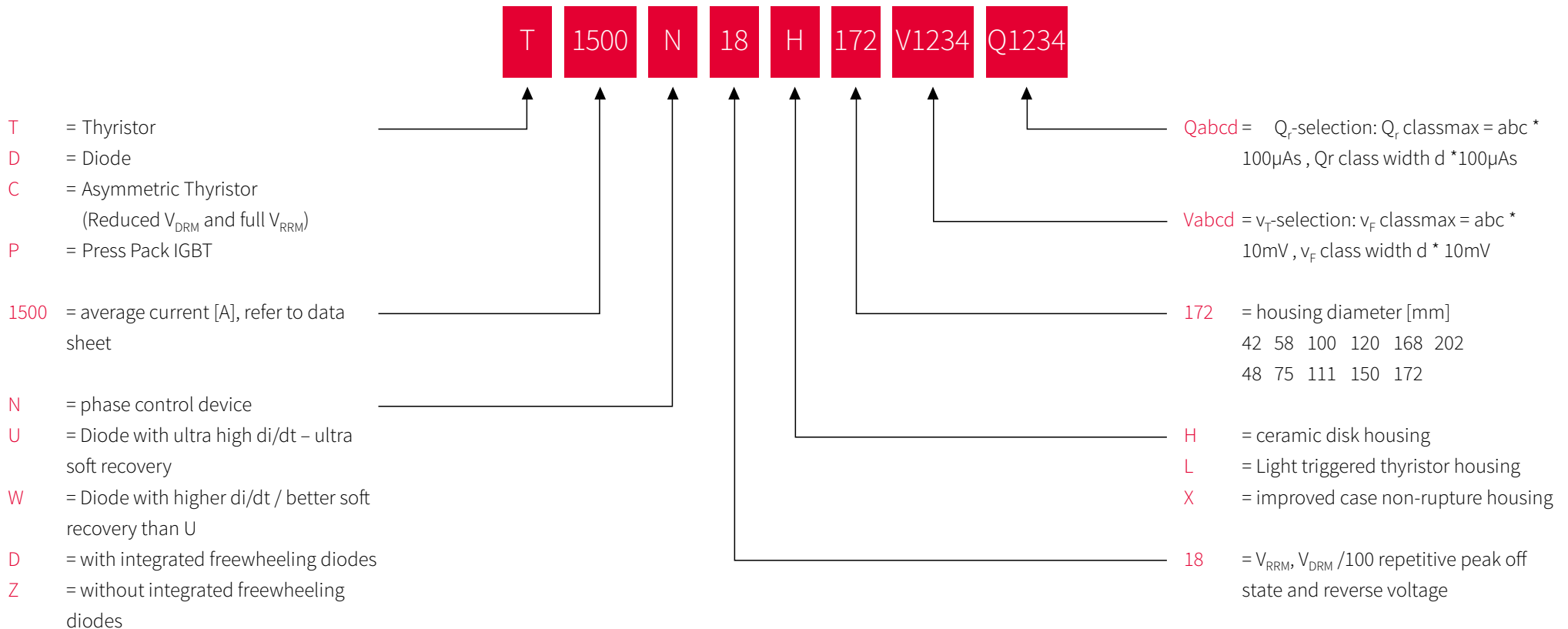
Naming for Ecoline 60/70 mm and Power Start Modules



Naming for thyristor and diode discs



Naming for thyristor/diode discs and Press Pack IGBTs



Explanations

F	clamping force	R_{thJA}	thermal resistance, junction to coolant
G	weight	R_{thJC}	thermal resistance, junction to case
i_D	forward off-state current	t_g	trigger pulse duration
I_{GD}	gate non trigger current	t_q	circuit commutated turn-off time
i_{GM}	peak gate current	T_{vj}	junction temperature
I_H	holding current	T_{vjmax}	maximum permissible junction temperature
I_L	latching current	T_{vjop}	junction operating temperature
i_R	reverse current	T_{stg}	storage temperature
I_{TAV}/I_{FAV}	on-state current (average value)	V_D	forward off-state voltage
I_{TAVM}/I_{FAVM}	maximum average on-state current	V_{DRM}	repetitive peak forward off-state voltage
I_{TM}/I_{FM}	on-state current (peak value)	V_{DSM}	non-repetitive peak forward off-state voltage
I_{TRMSM}/I_{FRMSM}	maximum RMS on-state current	V_{GD}	gate non trigger voltage
I_{TSM}/I_{FSM}	surge non repetitive on-state current	V_{ISOL}	insulation test voltage
I_F	DC forward current	V_R	reverse voltage
$\int i^2 dt$	I^2t value	V_{RRM}	repetitive reverse voltage
di_G/dt	rate of rise of gate current	V_{RSM}	non-repetitive peak reverse voltage
$di_T/dt/di_F/dt$	rate of rise of on-state current	V_T/V_F	on-state voltage
$(di/dt)_{cr}$	critical rate of rise of on-state current	$V_{(TO)}$	threshold voltage
M	mounting torque	$(dv/dt)_{cr}$	critical rate of rise of off-state voltage
r_T	slope resistance	Z_{thJC}	transient thermal impedance, junction to case
R_{thCK}	thermal resistance, case to heatsink		

Notes

Notes

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