# 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

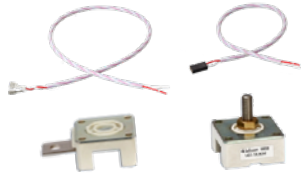
specific, complete, versatile

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

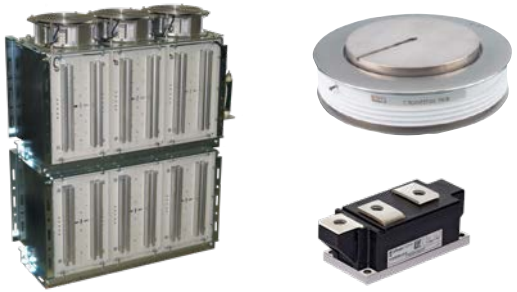
www.infineon.com/ups-bypass

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:

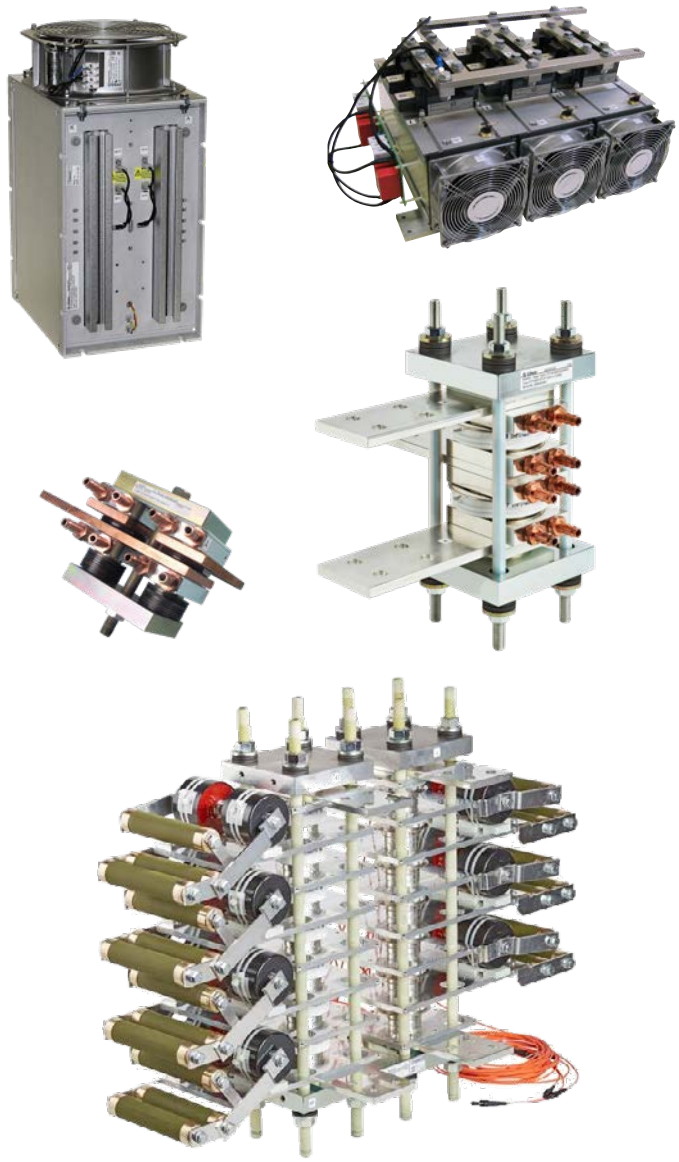
1. Find a module or disc which support your application needs
2. Choose one of the building blocks for basic circuits
3. Define the stack from blocks according the applications needs
4. Add accessories according the applications needs

## Your possible choice

| | |
|---|---|
| 22 heatsink designs | 75 block designs |
| over 8,600 block variants | over 25,700 stack designs |

**Applications**

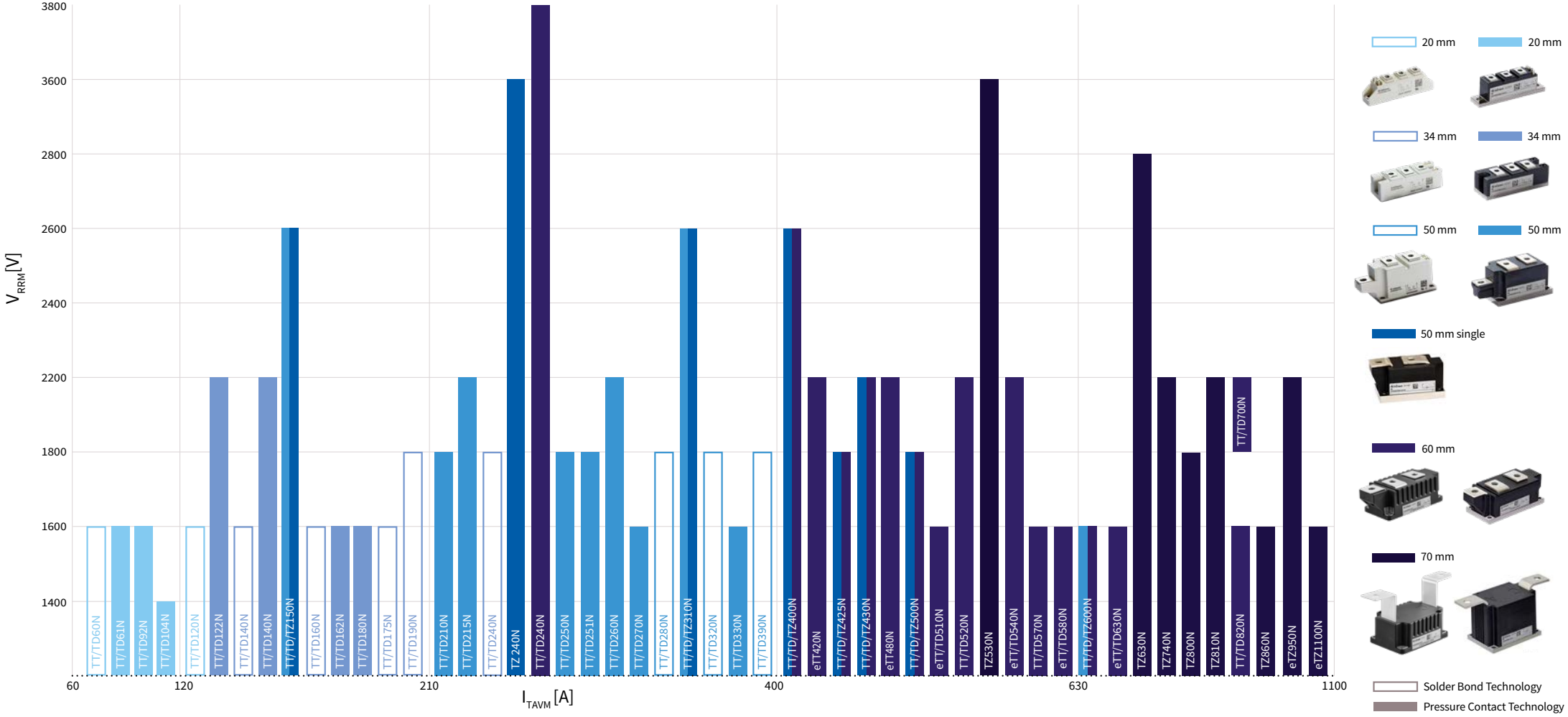
- Industrial AC and DC drives
- Soft starters, STATS
- Rectifiers and static by-passes in UPS
- Wind energy systems
- Welding, plating
- Electrolysis
- Electric heat
- High voltage direct current (HVDC) transmisson systems
- Flexible AC transmission systems (FACTS)
- TAP changers for transformers
- Controllable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



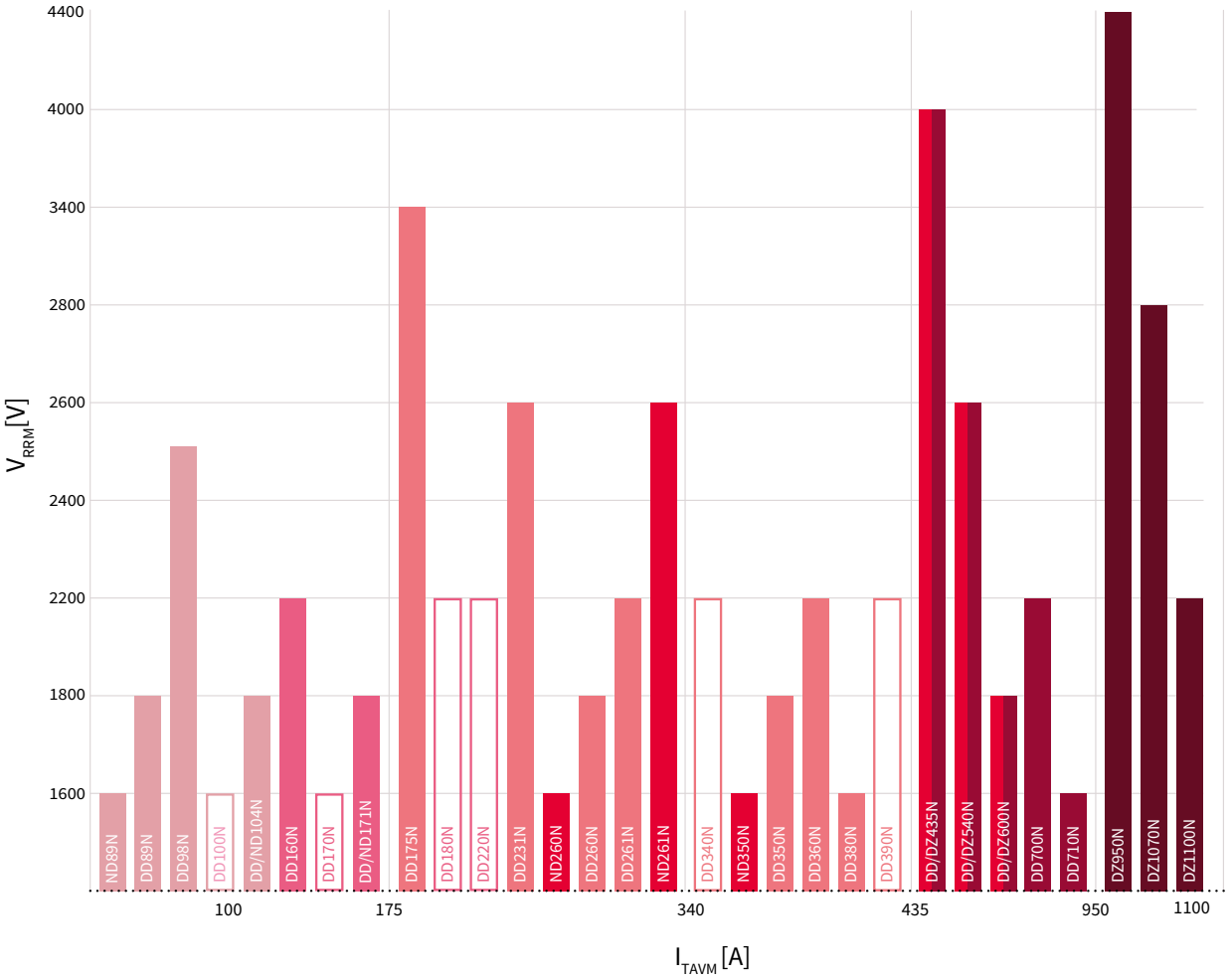
Personal service and support:
support@infineon-bip.com | Phone: +49 2902 9899-1766

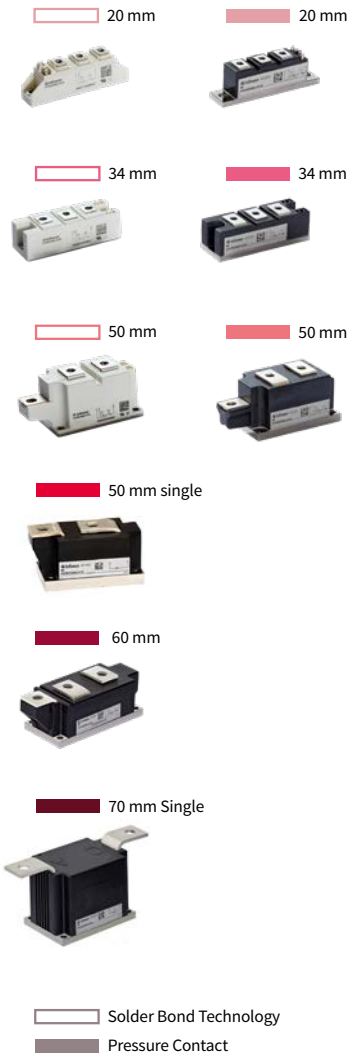
www.ifbip-shop.com

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

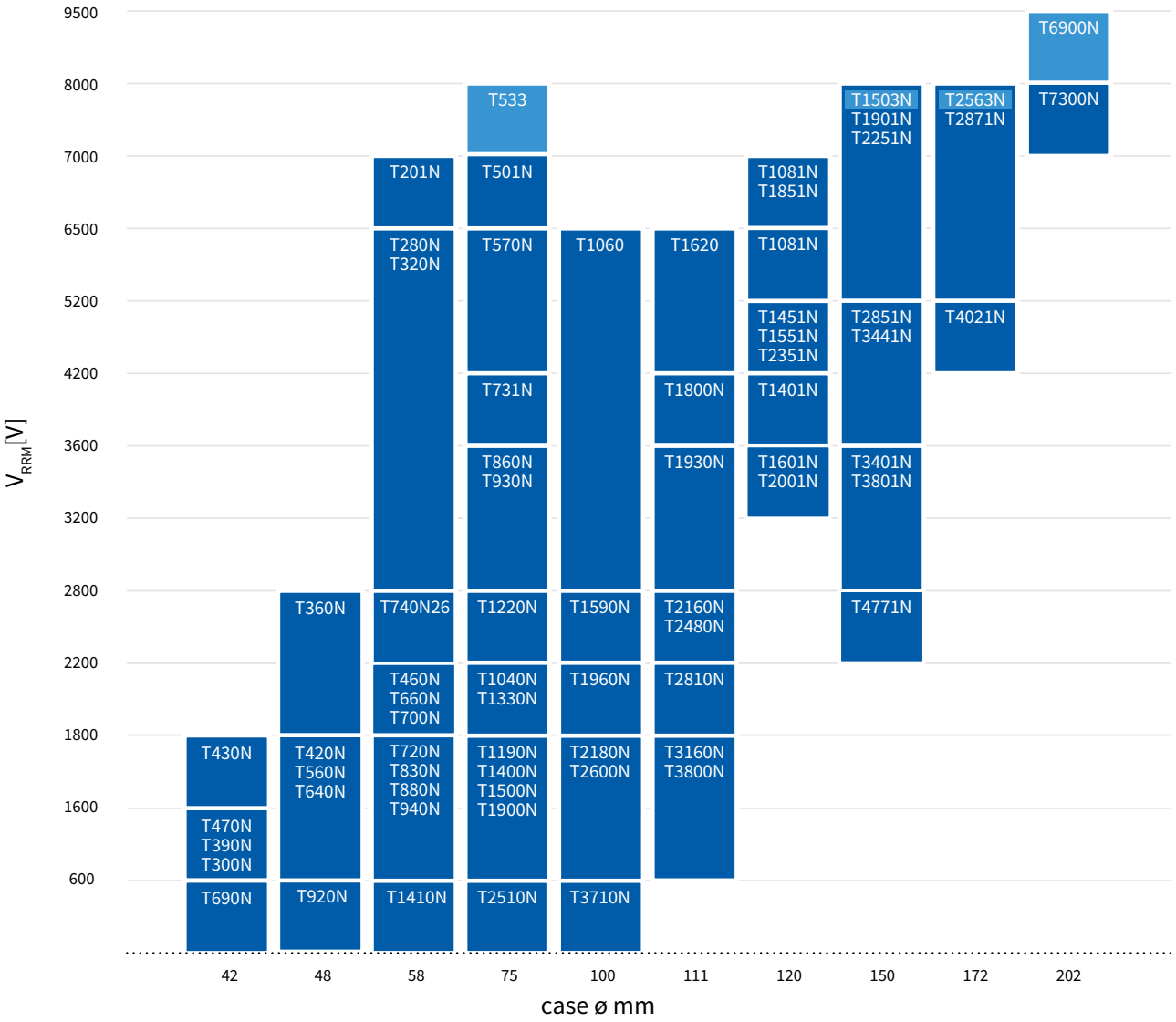


# Overview diode modules



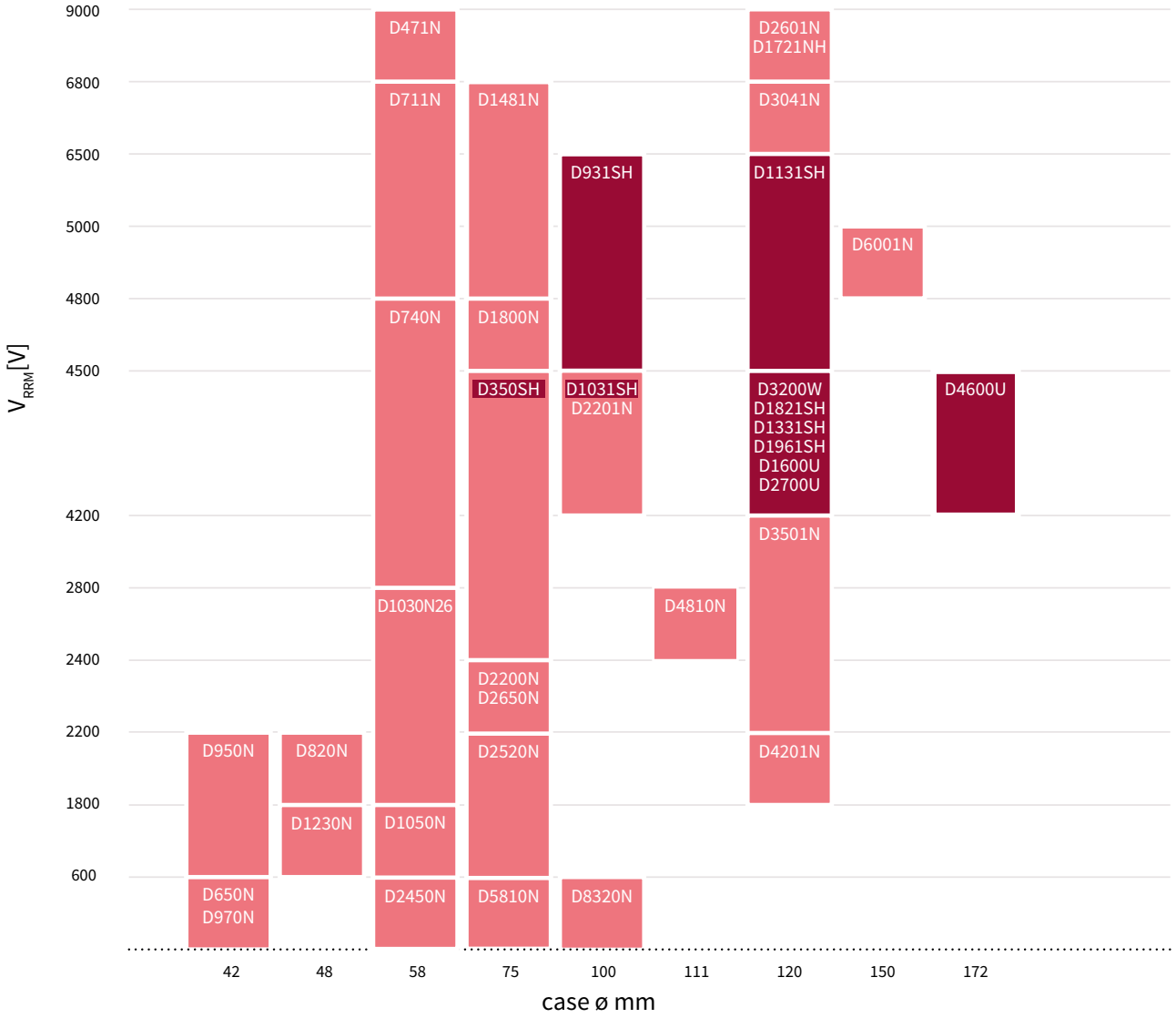



# Overview thyristors in disc housings





# Overview diodes in disc housings






# Thyristor / Thyristor Modules

CAV Drives Traction UPS Welding Wind

| 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| 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


CAV Drives Traction UPS Welding Wind

| 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| 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 |
| 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 |

TIM 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| **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 | $V_{DRM}$ / $V_{RRM}$ [V] | also available $V_{DRM}$ $V_{RRM}$ [V] | $I_{FAVM}$/$T_C$ [A/C°] @180° el sin | $I_{TSM}$ [A] @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| 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 |

TIM 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| **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

CAV | Drives | Traction | UPS | Welding | Wind

| 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| **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 |

TIM 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


CAV | Drives | Traction | UPS | Welding | Wind

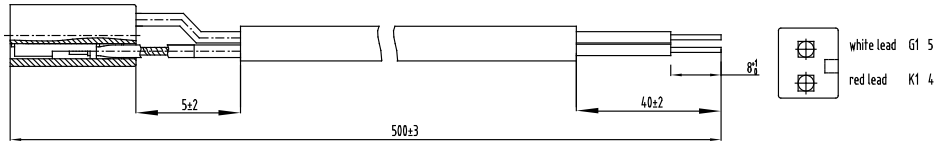
| Product | Max. $V_{DRM}$ $V_{RRM}$ [V] | also available $V_{DRM}$ $V_{RRM}$ [V] | $I_{TAVM}/T_C$ [A/C°] @180° el sin | $I_{TSM}$ [A] @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @10ms, $T_{vj\ max}$ | $V_{(T0)}$ [V] @$T_{vj\ max}$ | $r_T$ [mΩ] @$T_{vj\ max}$ | $R_{thJC}$ [K/kW] @180° el sin | $T_{vj}$ [°C] max | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| **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 |

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

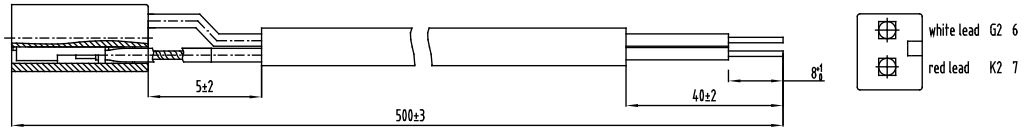
# Accessories – Gateleads for Modules with Baseplate 20 mm

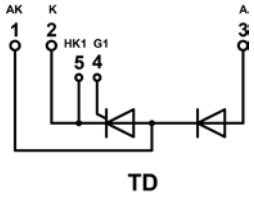
| Product | Connection to | Connection to | Color | Length [mm] | Ordering Code |
|---|---|---|---|---|---|
| Module with baseplate 20 mm | | | | | |
| GATELEAD L=500 PB20 G1K1 | 5 / 4 | G1/K1 | G yellow / HK red | 500 | SP000983478 |
| GATELEAD L=500 PB20 G2K2 | 6 / 7 | G2/K2 | G yellow / HK red | 500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

Outline G1/K1

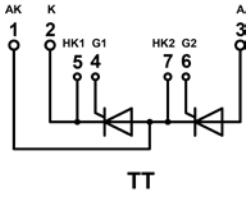



Outline G2/K2




TD



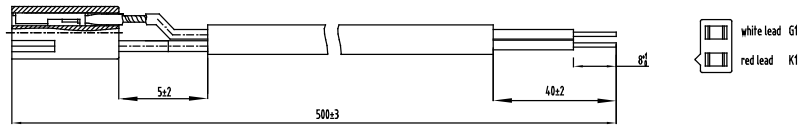

TT

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

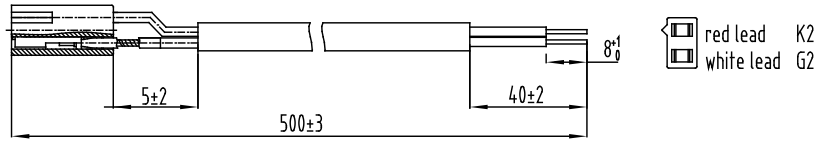
# Accessories – Gateleads for Modules with Baseplates 34-70 mm

| 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 |

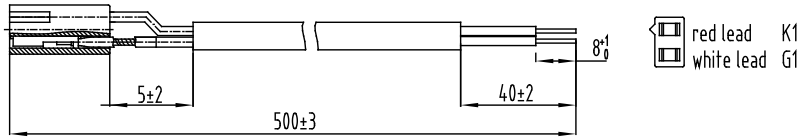
A

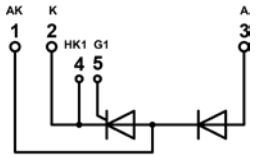



B

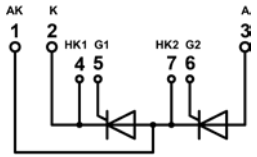



C

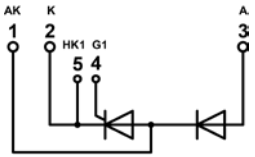


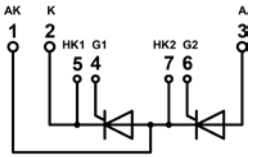

**TD**
**34 mm**



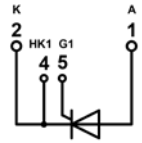

**TT**
**34 mm**




**TD**
**50, 60 mm**




**TT**
**50, 60 mm**




**TZ**
**50 mm single, 70 mm**

# Diode / Diode Modules

CAV Drives Traction UPS Welding Wind

| Product  | $V_{DRM}$ / $V_{RRM}$ [V] | also available $V_{DRM}$ $V_{RRM}$ [V] | $I_{FAVM}$/$T_C$ [A/C°] @180° el sin | $I_{TSM}$ [A] @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| 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 |
| 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

CAV Drives Traction UPS Wind

| Product | $V_{DRM}$ / $V_{RRM}$ [V] | also available $V_{DRM}$ $V_{RRM}$ [V] | $I_{FAVM}/T_C$ [A/C°] @180° el sin | $I_{TSM}$ [A] @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| **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 |

TIM 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 | $V_{DRM}$ / $V_{RRM}$ [V] | also available $V_{DRM}$ $V_{RRM}$ [V] | $I_{FAVM}$/$T_C$ [A/C°] @180° el sin | $I_{TSM}$ [A] @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| 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 |
| 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

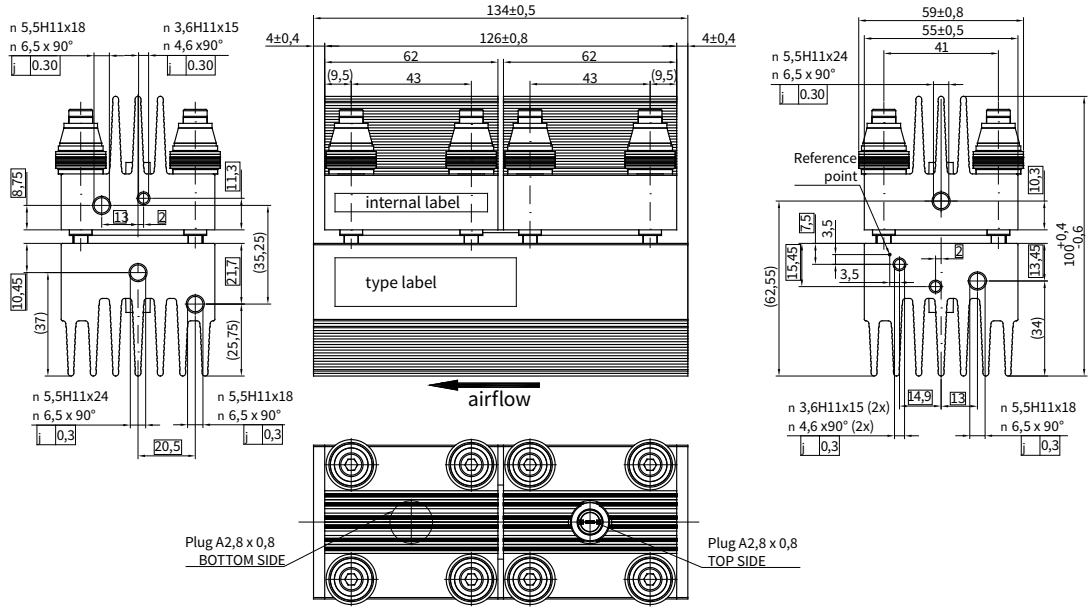
| Product | $V_{DRM}$ / $V_{RRM}$ [V] | also available $V_{DRM}$ $V_{RRM}$ [V] | $I_{FAVM}$/$T_C$ [A/C°] @180° el sin | $I_{FSM}$ [A] @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @10ms, $T_{vj\ max}$ | $V_{(T0)}$ [V] @$T_{vj\ max}$ | $r_T$ [mΩ] @$T_{vj\ max}$ | $R_{thJC}$ [K/kW] @180° el sin | $T_{vj}$ [°C] max | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|
| 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 |

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

# Thyristor Soft Starter Modules

| Product | $V_{DRM}$ / $V_{RRM}$ [V] | also available $V_{DRM}$ / $V_{RRM}$ [V] | $I_{overload\ (21s)}$ [A] | $I_{TSM}$ [A] @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @10ms, $T_{vj\ max}$ | $V_{(T0)}$ [V] @$T_{vj\ max}$ | $r_T$ [mΩ] @$T_{vj\ max}$ | $R_{thJA\ (21s)}$ [K/W] | $T_{vj}$ [°C] max | Outline |
|---|---|---|---|---|---|---|---|---|---|---|
| Power Line – thyristor soft starter modules - baseplate 55 mm - pressur contact | | | | | | | | | | |
| STT800N18P55 | 1800 | 1600 | 800 | 5400 | 146 | 0.90 | 0.83 | 0.203 | 155 | P55 |
| STT1400N18P55 | 1800 | 1600 | 1300 | 9000 | 405 | 0.90 | 0.49 | 0.123 | 155 | P55 |
| STT1900N18P55 | 1800 | 1600 | 1900 | 14000 | 980 | 0.90 | 0.28 | 0.087 | 155 | P55 |
| STT2200N18P55 | 1800 | 1600 | 2180 | 17500 | 1531 | 0.90 | 0.24 | 0.084 | 155 | P55 |

**P55**



# 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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

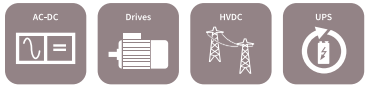
PR = Delivered with measurement protocol

# 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 avaible $V_{DRM}$ $V_{RRM}$ [V] | $I_{TAVM}/T_C$ [A/C°] @180° el sin | $I_{TSM}$ [A] @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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

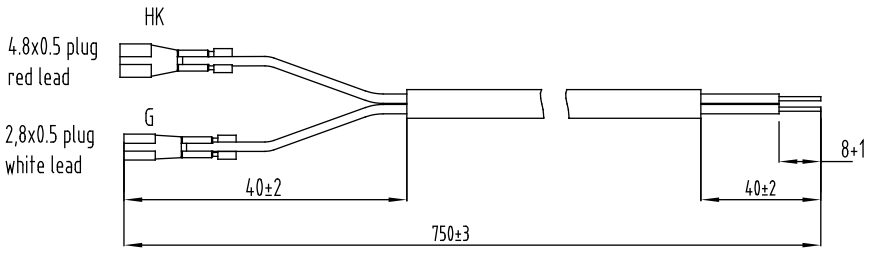
| Product | For Light Guide | Ordering Code |
|---|---|---|
| Laser Diode with ST connector (female) | | |
| LASER DIODE SPL-PL90 A | For Light Guides with ST connector for disc housings T76.35L, T150.40L, T172.40L | SP000091118 |

# Accessories – Light Guides for Light Triggered Thyristors

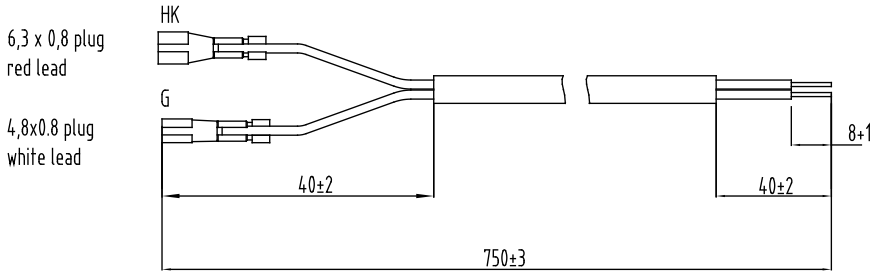
| Product | For disc housing | Length [mm] | Ordering Code |
|---|---|---|---|
| Light Guide with ST connector (male) | | | |
| LIGHT FIBER LWL R10-LR50-L3000 A | T76.35L | 3000 | SP000091119 |
| LIGHT FIBER LWL R10-LR87-L3000 | T150.40L, T172.40L | 3000 | SP000091117 |
| Other lengths on request | T76.35L,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




GATELEAD
L=750/0.5 MP




GATELEAD
L=750/0.8 HP

# 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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

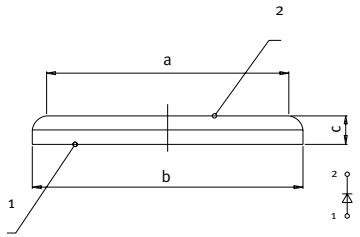
| Product | $V_{RRM}$ [V] | also available $V_{DRM}$ $V_{RRM}$ [V] | $I_{FAVM}/T_C$ [A/°C] @180° el sin | $I_{FSM}$ @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @10ms, $T_{vj\ max}$ | $V_{(T0)}$ [V] @$T_{vj\ max}$ | $r_T$ [mΩ] @$T_{vj\ max}$ | $R_{thJC}$ [K/kW] @180° el sin | $T_{vj}$ [°C] max | Clamping force [kN] | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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] |
|---|---|---|---|---|---|---|---|---|---|
| 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

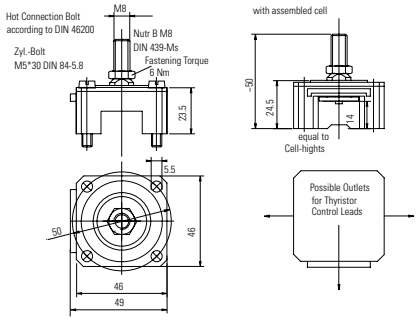
| Product  | $V_{RRM}$ [V] | $I_{FAVM/TC}$ | $I_{FSM}$ @10ms, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @10ms, $T_{vj\ max}$ | $V_{(T0)}$ [V] @$T_{vj\ max}$ | $r_T$ [mΩ] @$T_{vj\ max}$ | $R_{thJC}$ [K/kW] @180° el sin | $T_{vj}$ [°C] max | $Q_R$ [mAs] @di/dt = 1000 A/µs $I_{FM}$ = 2.5 kA, $T_{vj\ max}$ | $I_{RM}$ [A] @di/dt = 1000 A/µs $I_{FM}$ = 2.5 kA, $T_{vj\ max}$ | Clamping force [kN] | Outline / page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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, $T_{vj\ max}$ | $\int I^2dt$ [$A^2S \cdot 10^3$] @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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 |

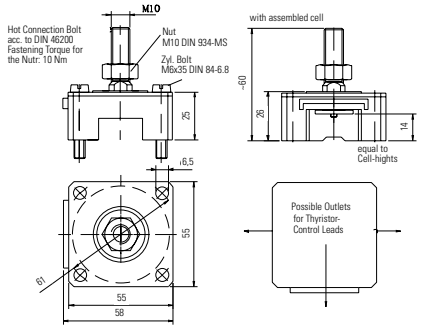
# Clamping Units for Discs

| 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 |

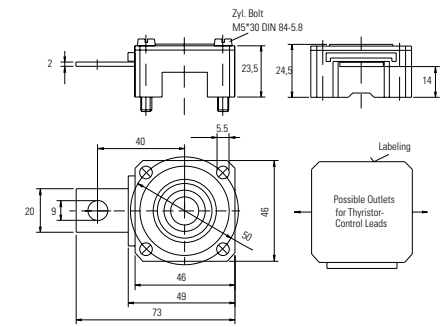
**V50..M**



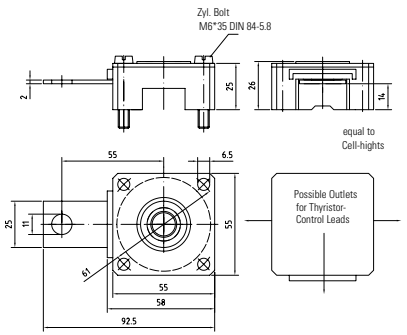

**V61..M**




**V50..N**



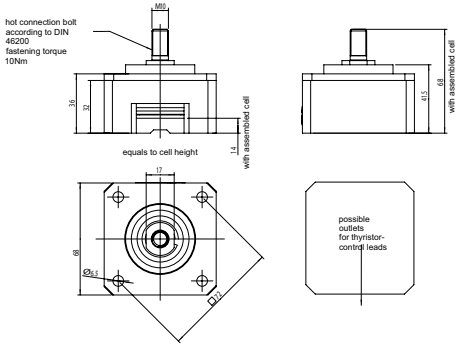

**V61..N**



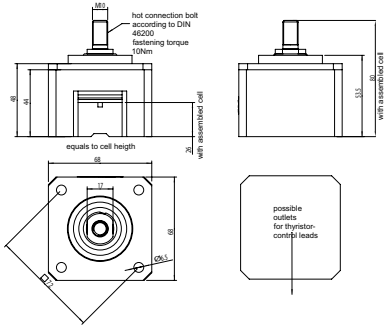
# Clamping Units for Discs

| 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 |

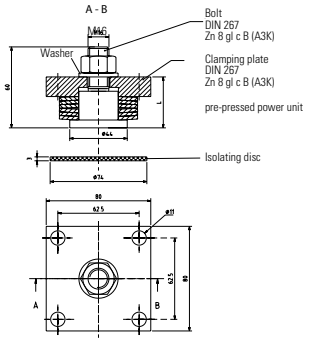
## V72-14..M



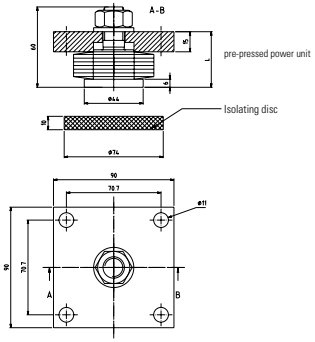

## V72-26..M




## V 89

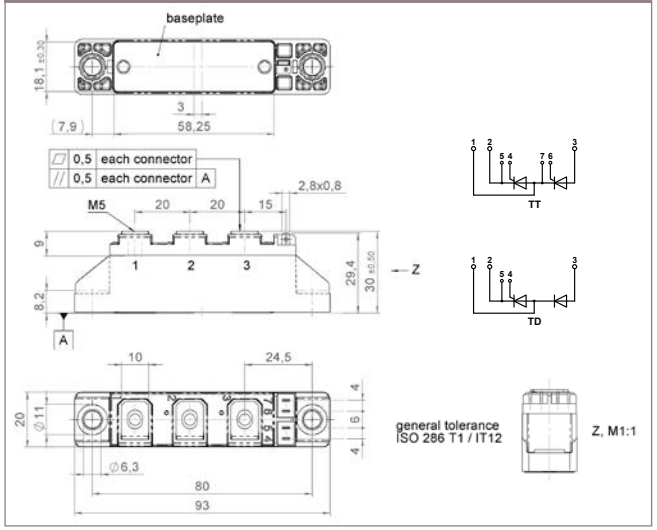



## V 100

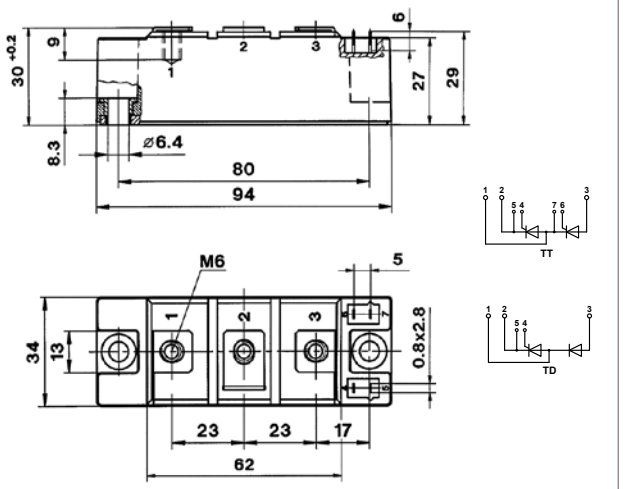


# Outlines Thyristor Modules

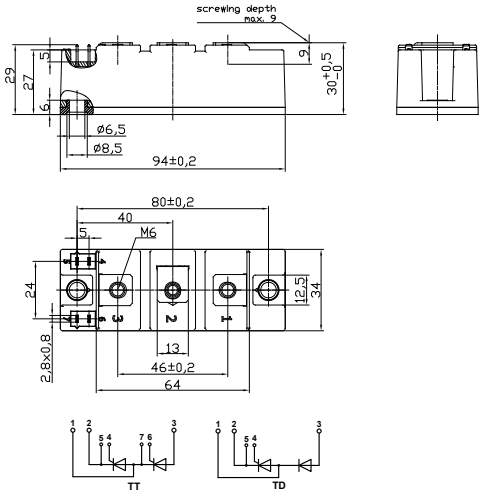
## 20 mm - TS20



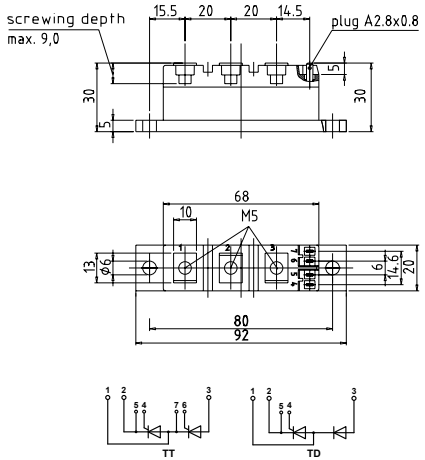

## 34 mm - TS34



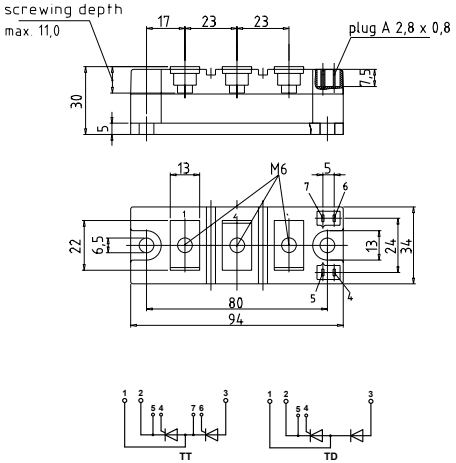

## TS34 2nd Gen




## 20 mm - TP20

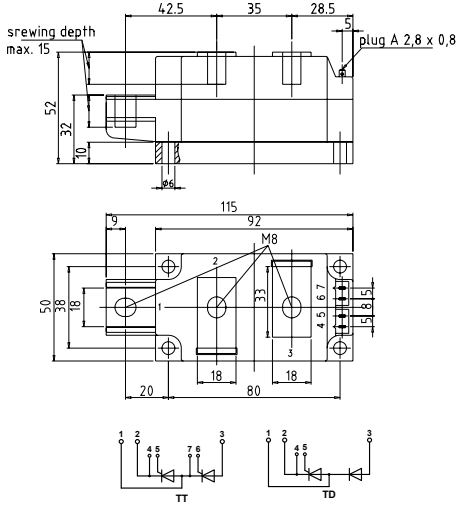



## 34 mm - TP34

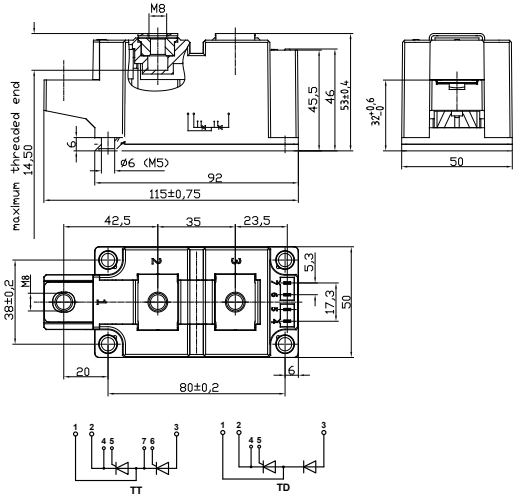


# Outlines Thyristor Modules

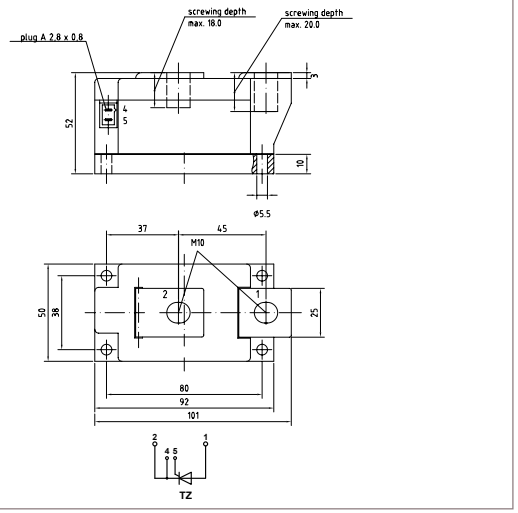
## 50 mm - TP50



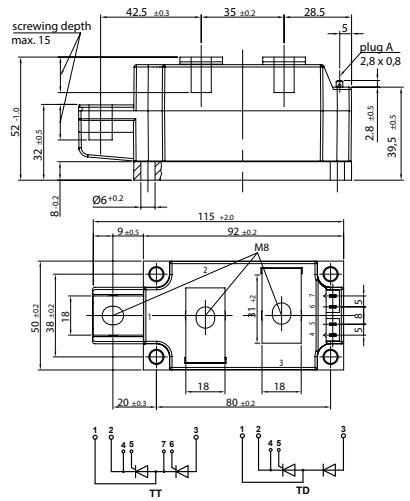

## 50 mm - TS50




## 50 mm - TP50.1

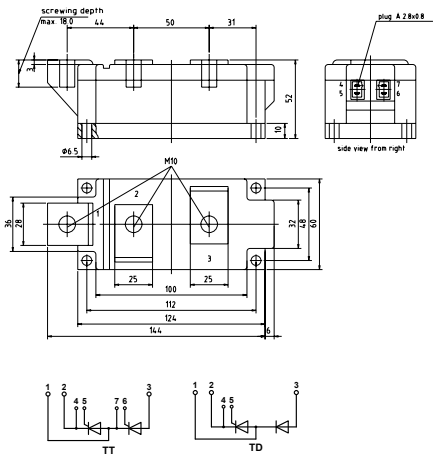



## 50 mm - TP50A

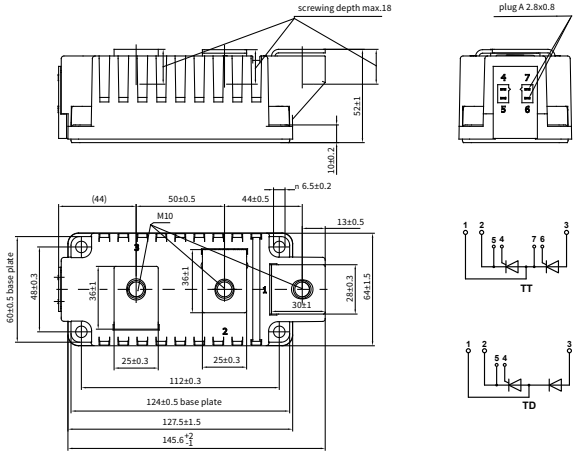


# Outlines Thyristor Modules

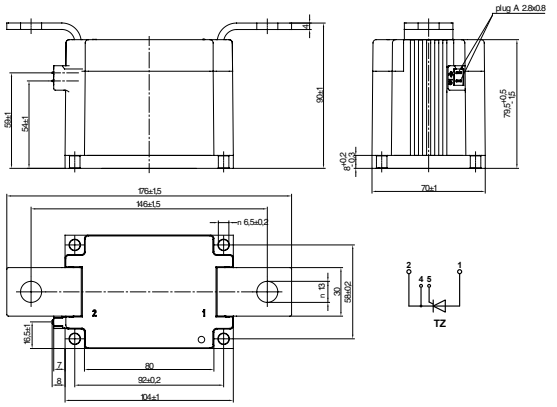
## 60 mm - TP60



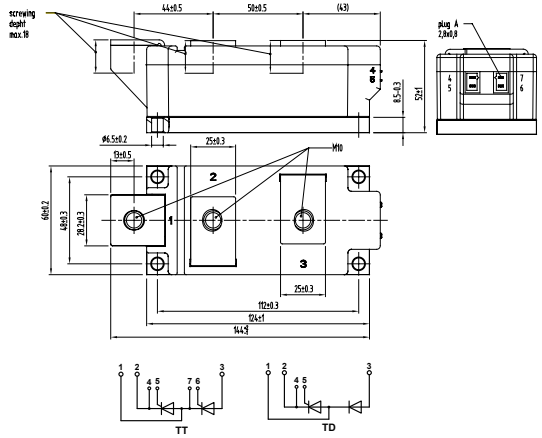

## 60 mm - TE60



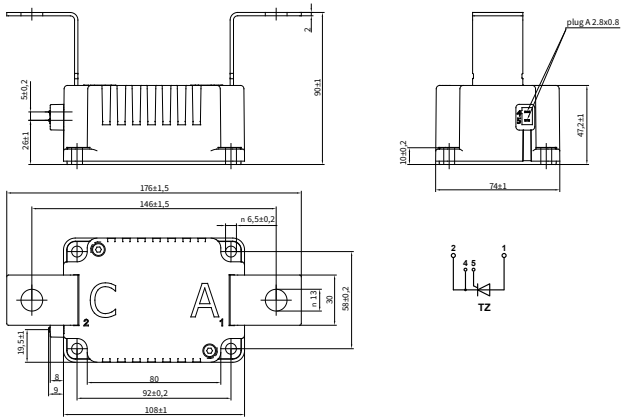

## 70 mm - TP70A



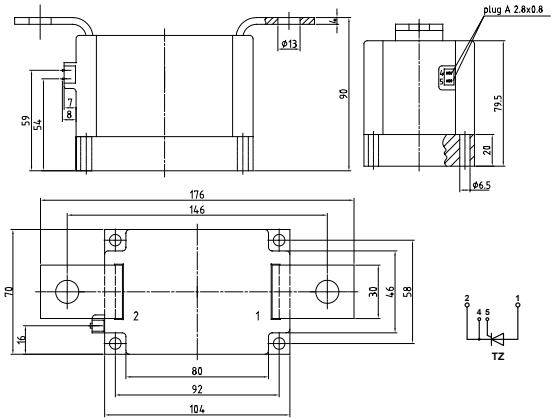

## 60 mm - TP60A




## 70 mm - TE70

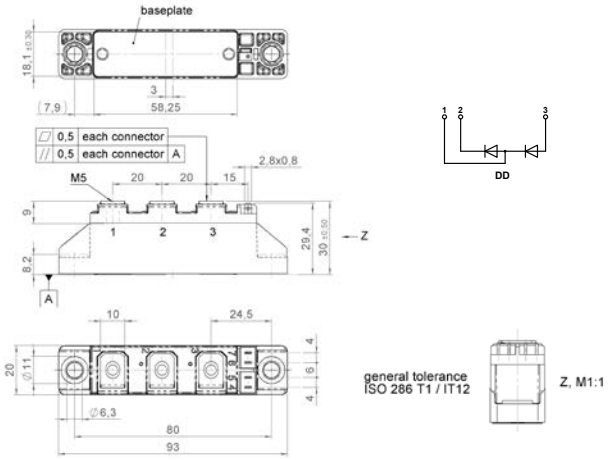



## 70 mm - TP70

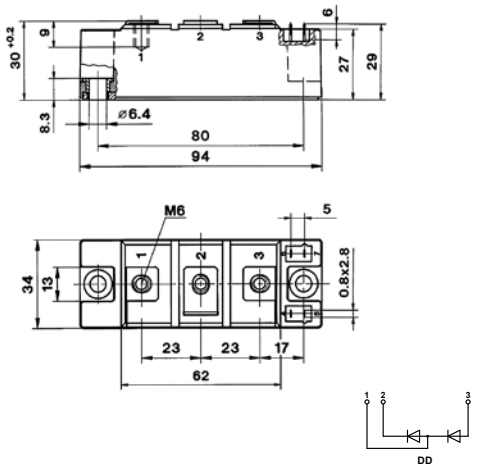


# Outlines Diode Modules

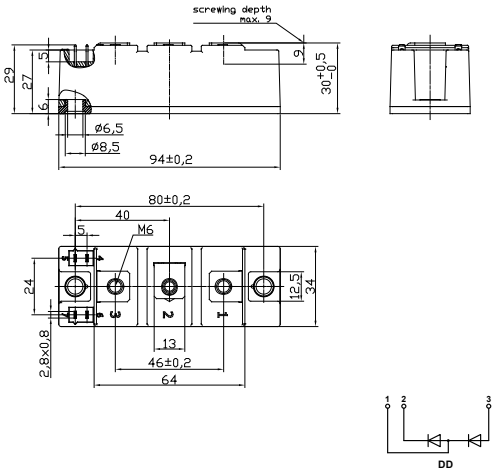
## 20 mm - DS20



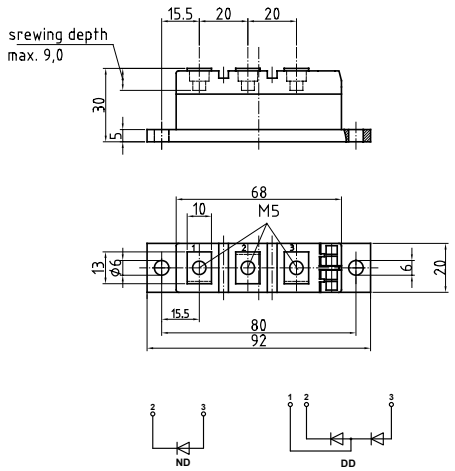

## 34 mm - DS34



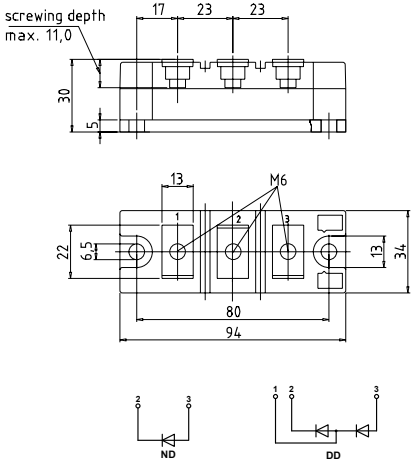

## 34 mm - DS34 2nd Gen




## 20 mm - DP20

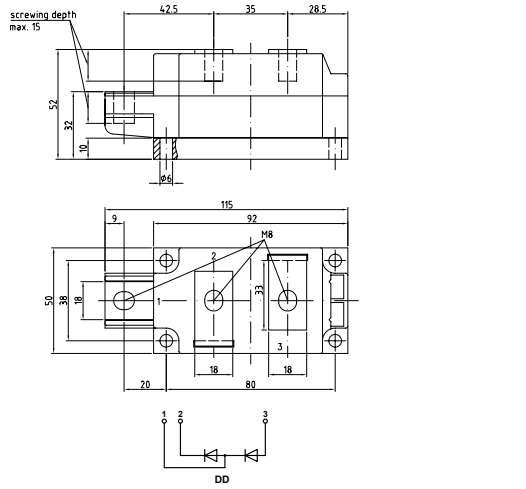



## 34 mm - DP34

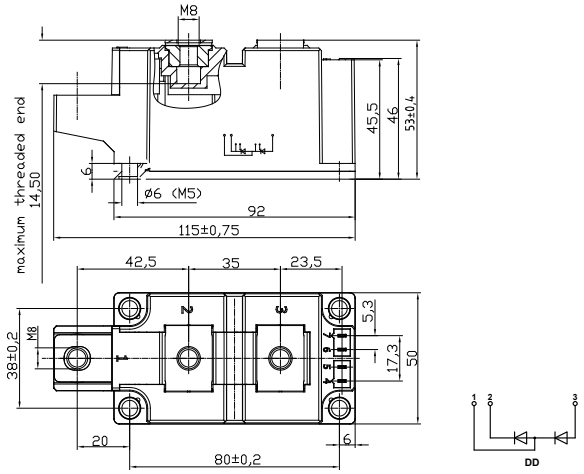


# Outlines Diode Modules

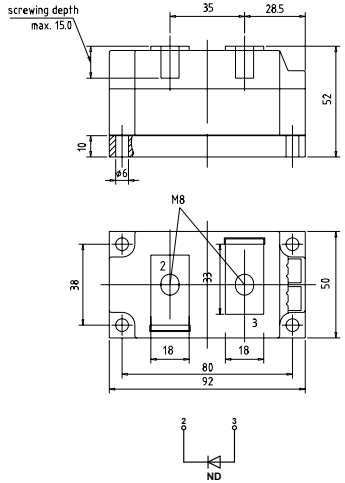
## 50 mm - DP50



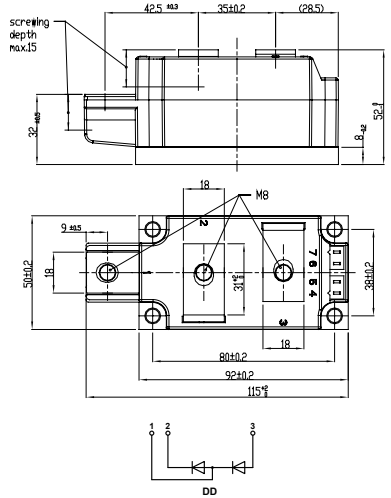

## 50 mm - DS50



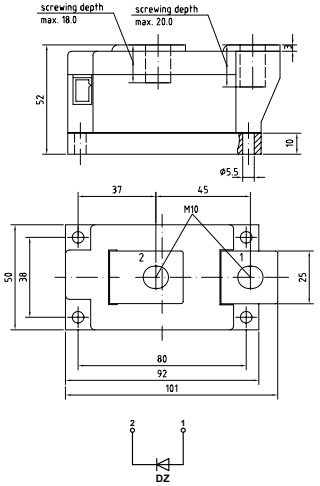

## 50 mm - DP50ND




## 50 mm - DP50A

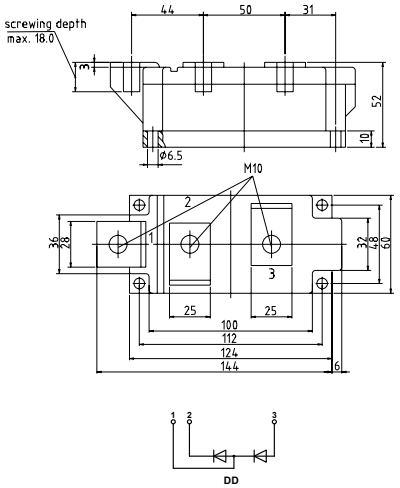



## 50 mm - DP50.1

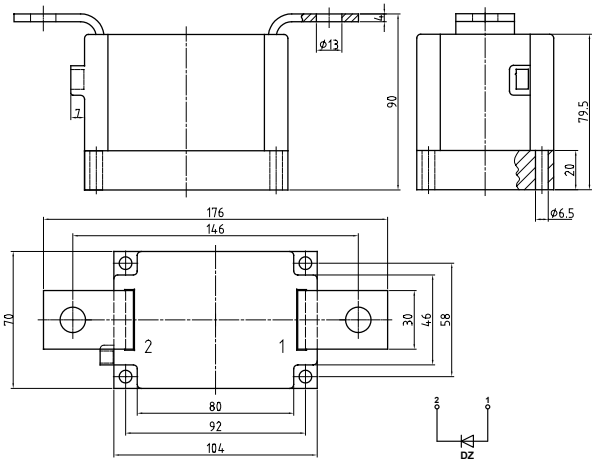


# Outlines Diode Modules

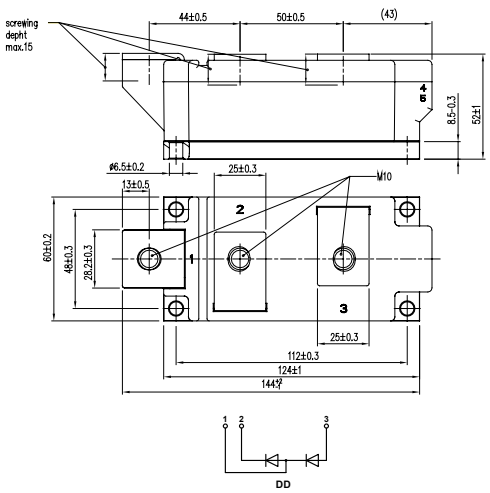
## 60 mm - DP60



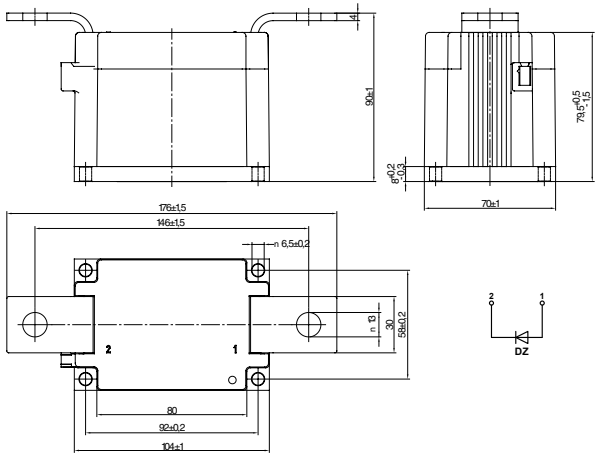

## 70 mm - DP70




## 60 mm - DP60A




## 70 mm - DP70A

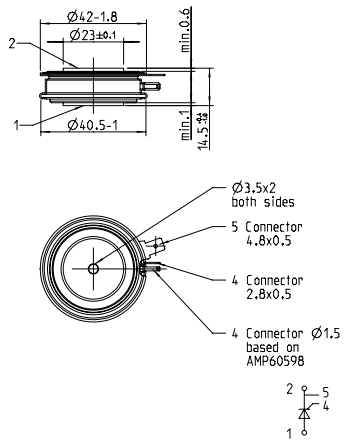



# Package Units

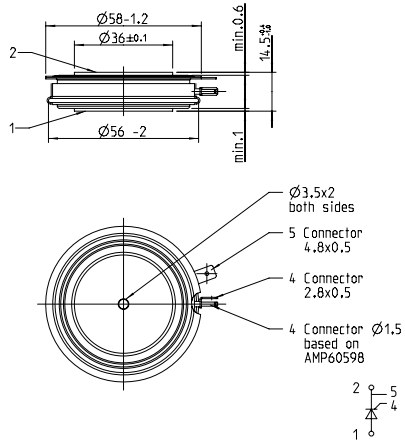
| Outline | Packaging units |
|---|---|
| Power block modules | |
| DP20 | 15 |
| DS20 | 12 |
| DP34 | 8 |
| DS34 | 10 |
| DP50 | 3 |
| DP50.1 | 3 |
| DP50A | 3 |
| DP50ND | 3 |
| DP60 | 2 |
| DP60A | 2 |
| DP70 | 1 |
| DP70A | 1 |
| TP20 | 15 |
| TS20 | 12 |
| TP34 | 8 |
| TS34 | 10 |
| TP50 | 3 |
|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

# Outlines Thyristor Discs

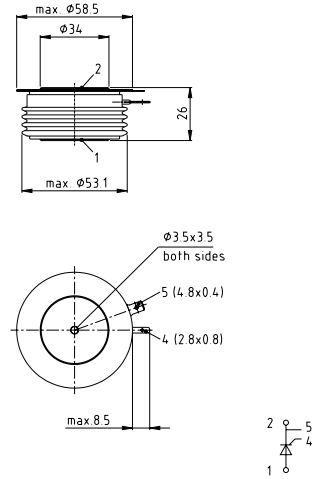
## T42.14K0



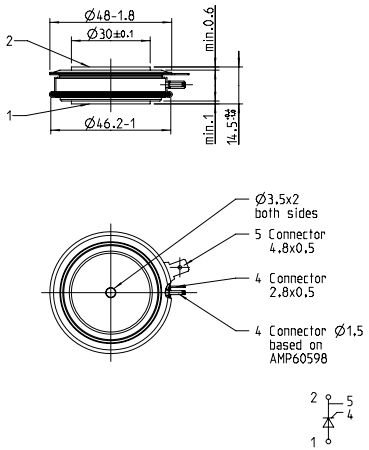

## T58.14K0



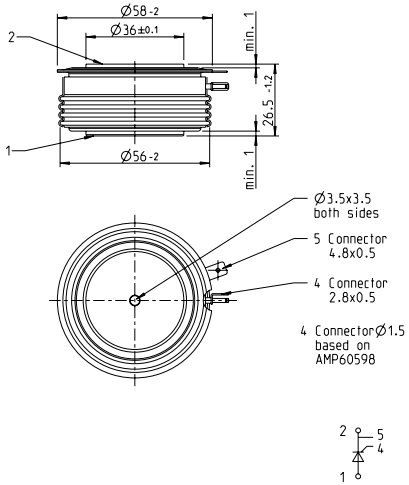

## T58.26K



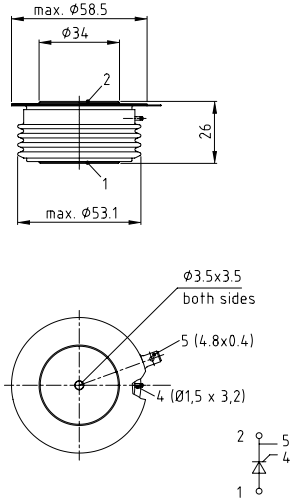

## T48.14K0




## T58.26K0

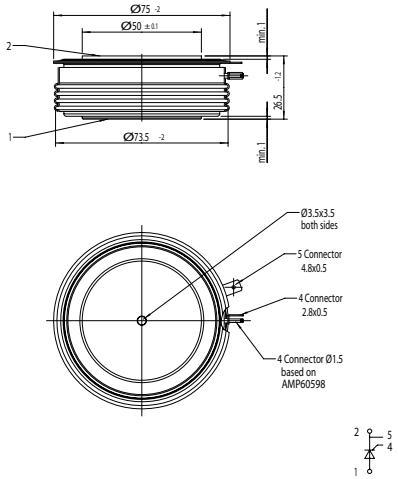



## T58.26K1

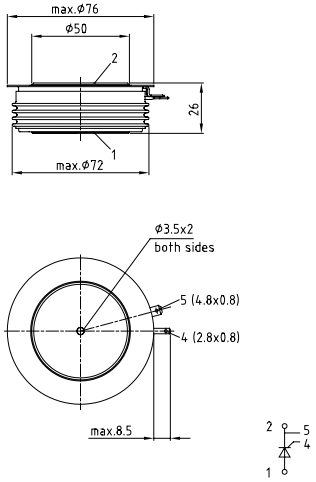


# Outlines Thyristor Discs

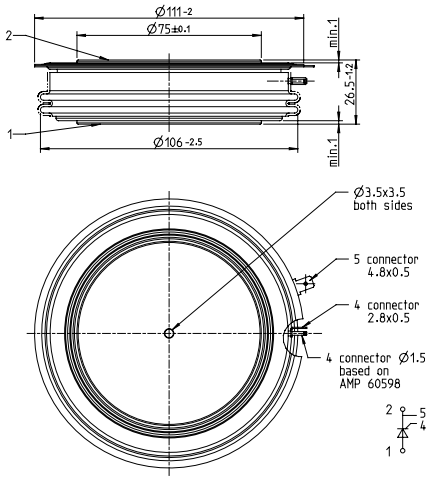
## T75.26K0




## T76.26K




## T111.26K0

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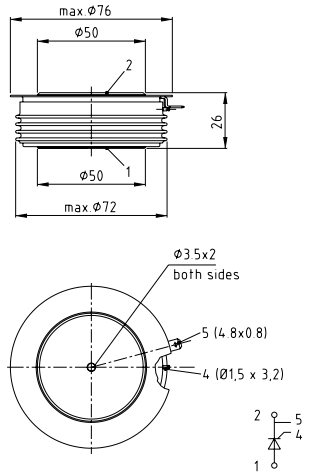
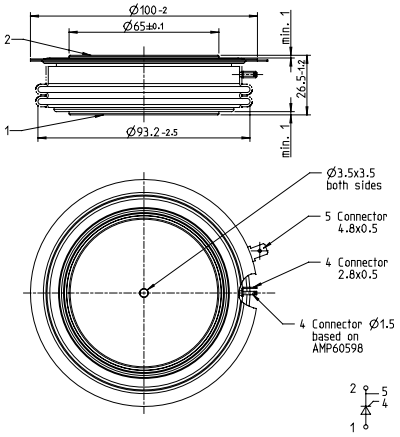
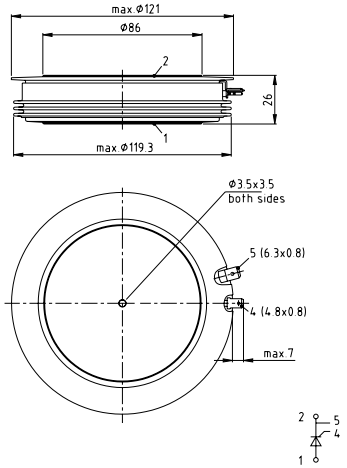



## T100.26K0

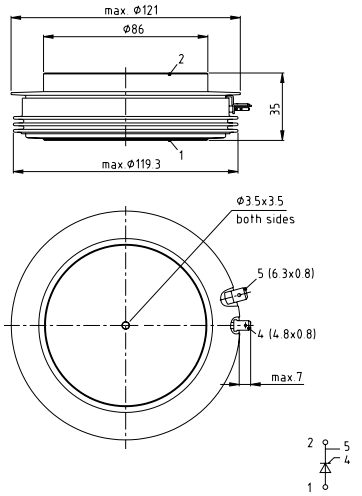



## T120.26K

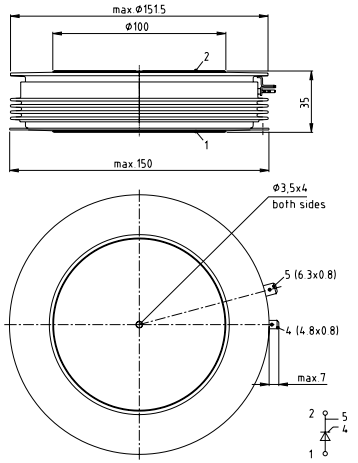


# Outlines Thyristor Discs

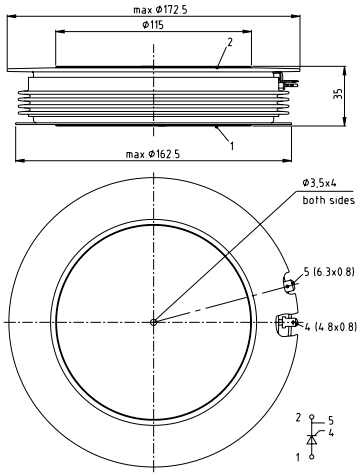
## T120.35K



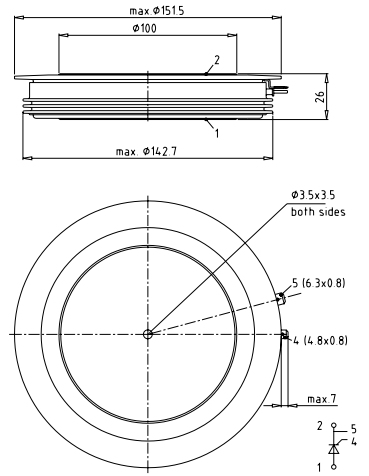

## T150.35K



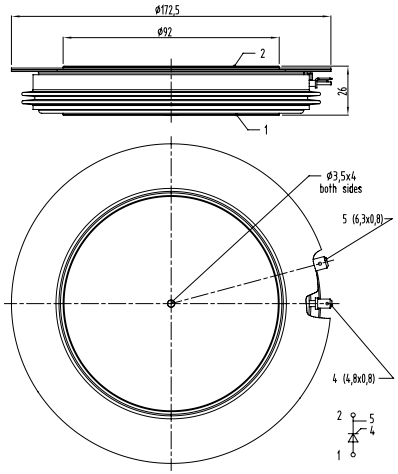

## T172.35K



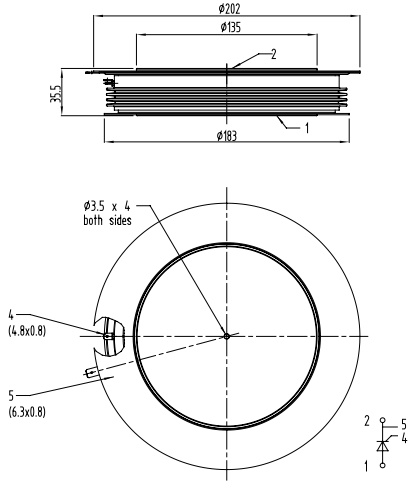

## T150.26K




## T172.26K

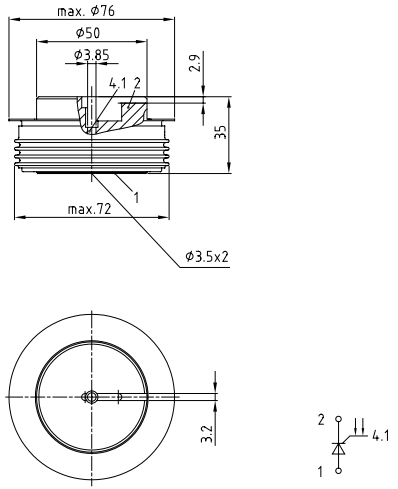



## T202.35K

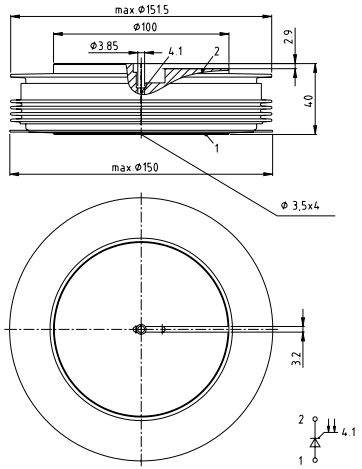


# Outlines Light Triggered Thyristors

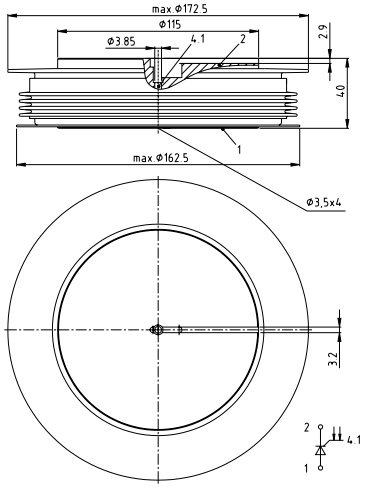
**T76.35L**



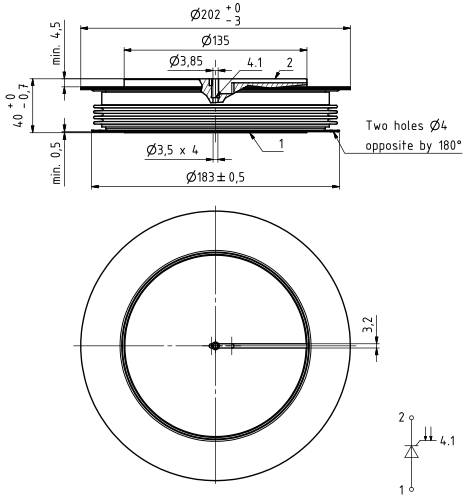

**T172.40L**




**T150.40L**




**T202.35L**

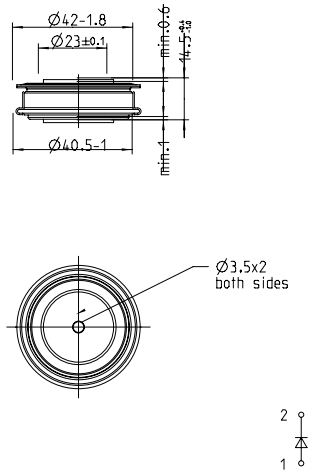



# Package Units

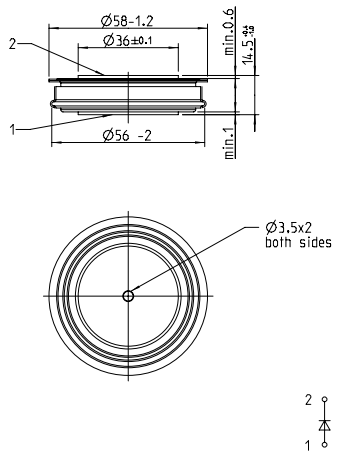
| Outline | Packiging units |
|---|---|
| Presspacks | |
| T42.14K0 | 18 |
| T48.14K0 | 12 |
| T58.14K0 | 9 |
| T58.26K0 | 6 |
| T75.26K0 | 4 |
| T76.26K | 4 |
| T76.35L | 4 |
| T100.26K0 | 2 |
| T111.26K0 | 2 |
| T120.26K | 2 |
| T120.35K | 2 |
| T150.35K | 1 |
| T150.40L | 1 |
| T172.26K | 1 |
| T172.35K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

# Outlines Diode Discs

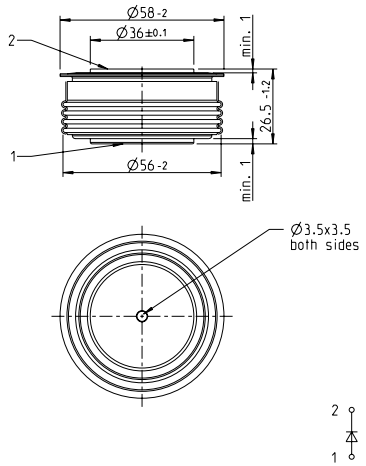
## D42.14K0



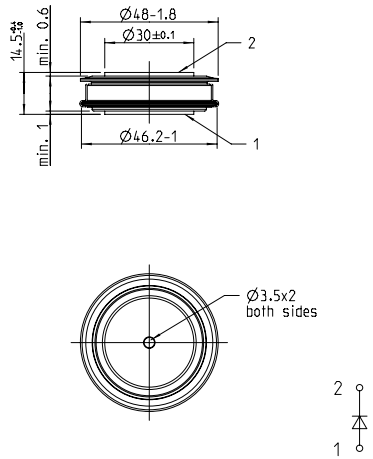

## D58.14K0



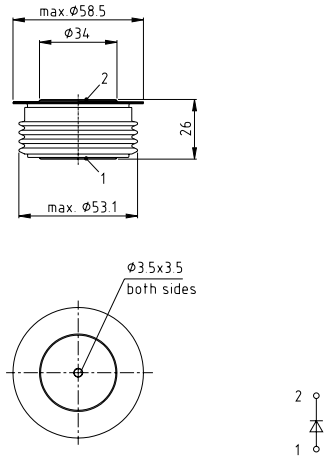

## D58.26K0



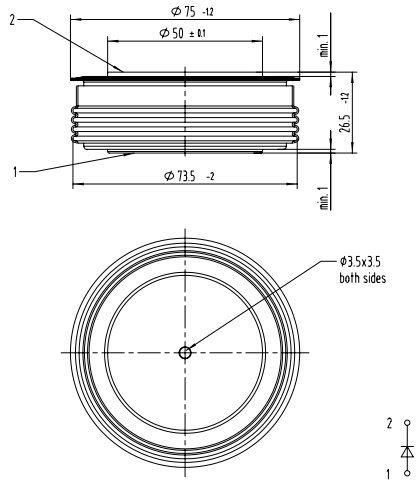

## D48.14K0




## D58.26K

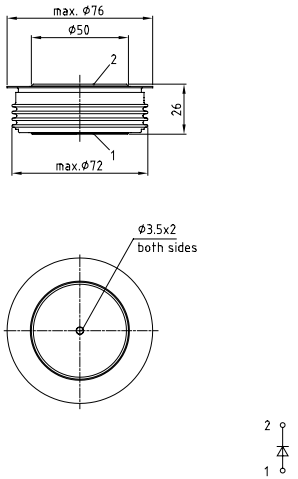



## D75.26K0

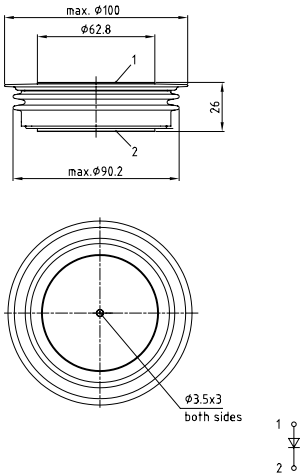


# Outlines Diode Discs

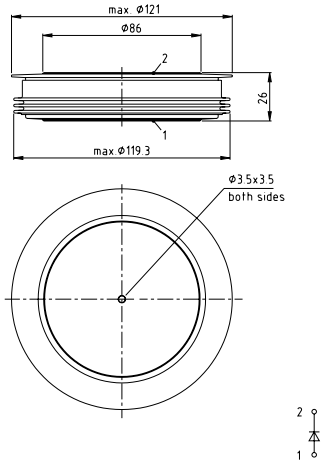
## D76.26K



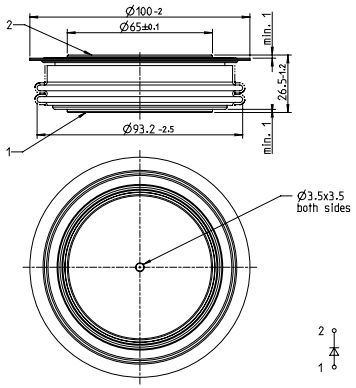

## D100.26K



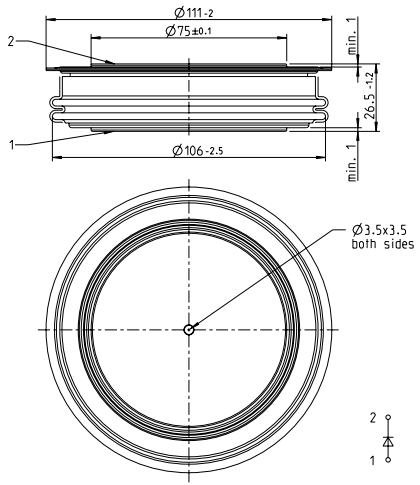

## D120.26K



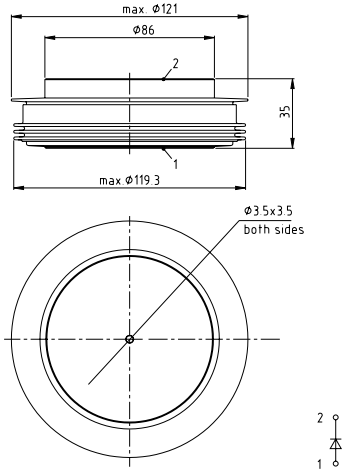

## D100.26K0




## D111.26K0

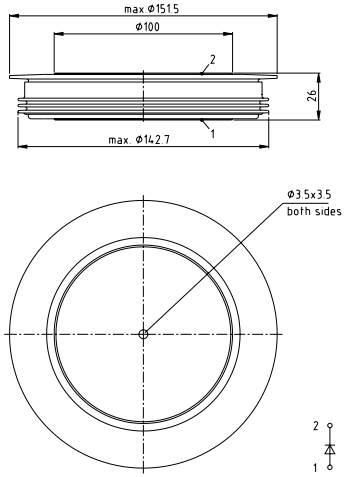



## D120.35K

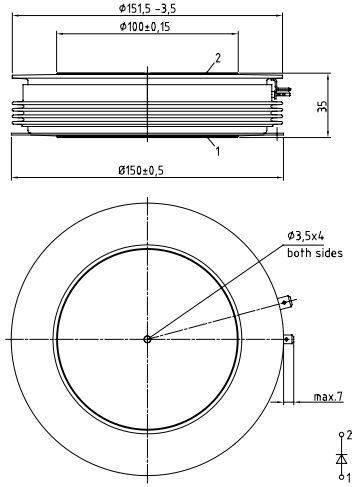


# Outlines Diode Discs

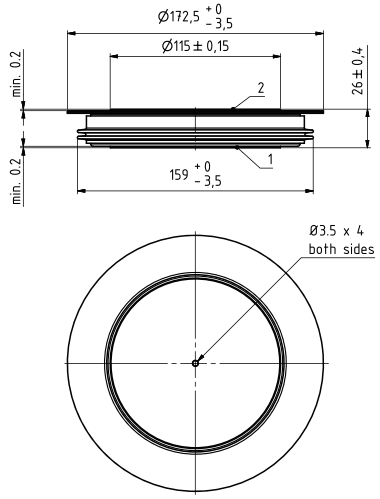
**D150.26K**




**D150.35K**




**D172.26K**




# 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


Circuit

TT = with 2 thyristors
TD = with 1 thyristor and 1 diode
DD = with 2 diodes
ND = with 1 diode
DZ = with 1 diode
TZ = with 1 thyristor

162 = $I_{TAV}$, $I_{FAV}$ average on-state current [A] at $T_C$
= 85°C (thyristors) 100°C (diodes)

N = phase control device

16 = $V_{RRM}$, $V_{DRM}$ /100 repetitive peak off state and reverse voltage

TIM = baseplate with pre-applied Thermal Interface Material (TIM)

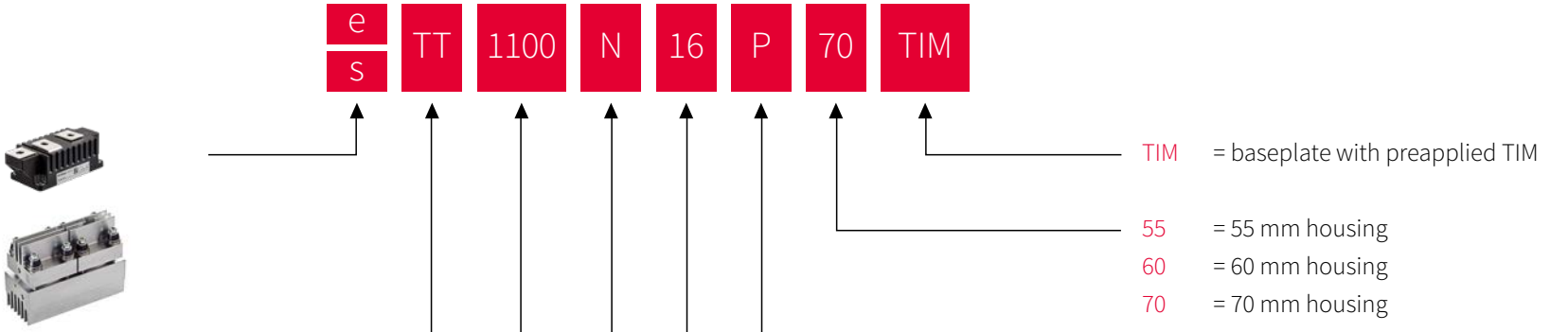
-K = design with common cathode
-A = design with common anode

F = 1000V/µs critical rise of off-state (du/dt)

O = no guaranteed turn-off time

K = mechanical construction: pressure contact technology
S = mechanical construction: solder technology

# Naming for Ecoline 60/70 mm and Power Start Modules




e = Eco Block Modules



s = Power Start Modules



TT = half bridge thyristor thyristor
TD = half bridge thyristor diode
TZ = single thyristor
DD = half bridge diode diode
DZ = single diode

1100 = $I_{TAV}$, $I_{FAV}$ average on-state current [A] at $T_C$
= 85°C (thyristors) 100°C (diodes)

TIM = baseplate with preapplied TIM

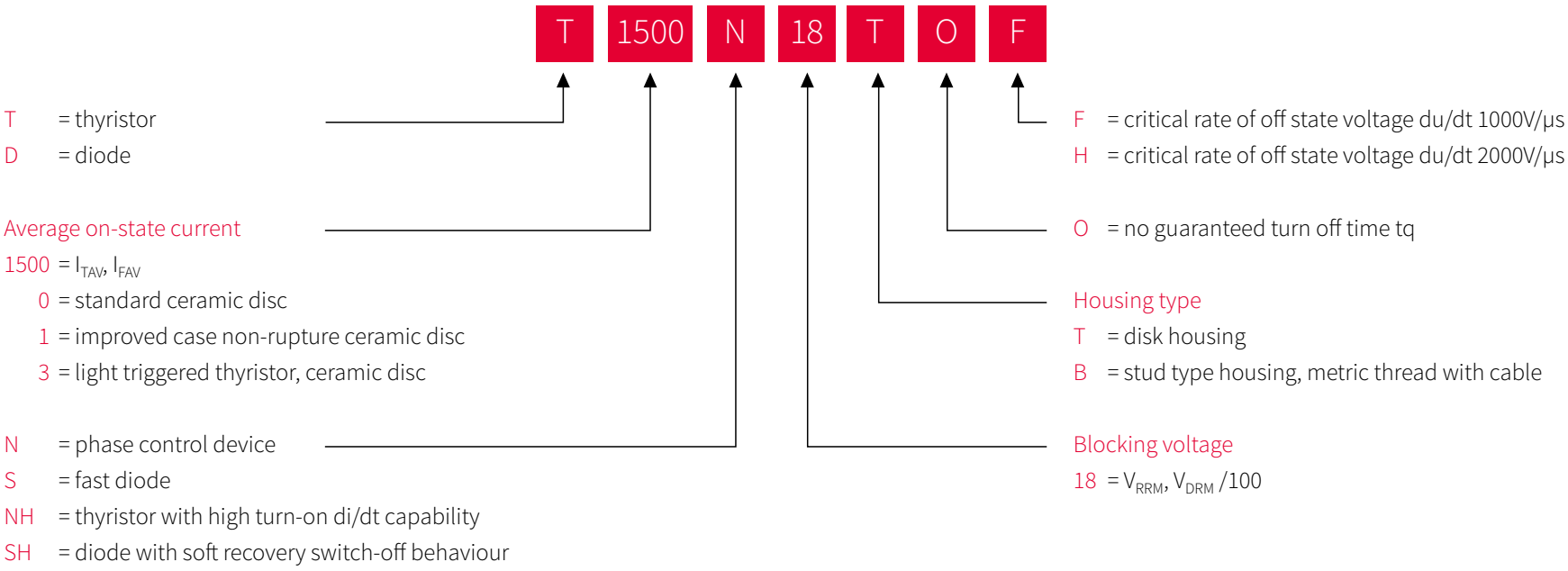
55 = 55 mm housing
60 = 60 mm housing
70 = 70 mm housing

P = pressure contact technology

16 = $V_{RRM}$, $V_{DRM}$ /100 repetitive peak off state and reverse voltage

N = phase control device

# Naming for thyristor and diode discs



# Naming for thyristor/diode discs and Press Pack IGBTs


T = Thyristor
D = Diode
C = Asymmetric Thyristor
(Reduced $V_{DRM}$ and full $V_{RRM}$)
P = Press Pack IGBT

1500 = average current [A], refer to data sheet

N = phase control device
U = Diode with ultra high di/dt – ultra soft recovery
W = Diode with higher di/dt / better soft recovery than U
D = with integrated freewheeling diodes
Z = without integrated freewheeling diodes

Qabcd = $Q_r$-selection: $Q_r$ classmax = abc * 100µAs , Qr class width d *100µAs

Vabcd = $v_T$-selection: $v_F$ classmax = abc * 10mV , $v_F$ class width d * 10mV

172 = housing diameter [mm]
42 58 100 120 168 202
48 75 111 150 172

H = ceramic disk housing
L = Light triggered thyristor housing
X = improved case non-rupture housing

18 = $V_{RRM}$, $V_{DRM}$ /100 repetitive peak off state and reverse voltage

# Explanations

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

# Notes

# Notes

# Where to buy

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