

Type designations

Thyristors

| | | |
|----------|----------------|---|
| T | 930 S 18 T M C | |
| T | | symmetrically blocking thyristor |
| A | | asymmetrically blocking thyristor |
| | 930 | limiting average forward current (A) at $t_c = 85^\circ\text{C}$ |
| 2.Letter | | |
| | | |
| | | |
| S | | fast thyristor, gate-cathode interdigitated |
| F | | fast thyristor, central gate |
| N | | phase control thyristor |
| | 18 | limiting repetitive peak forward and reverse off-state voltage in 100 V, 18 = 1800 V (A: repetitive peak forward off-state voltage) |
| 3.Letter | | mechanical construction |
| | | anode: cathode: |
| B | | metric thread cable |
| C | | metric thread solder pin |
| E | | flat base cable |
| F | | TO 220 case |
| T | | disc |
| 4.Letter | | maximum turn-off time |
| A | | 8 μs |
| B | | 10 μs |
| C | | 12 μs |
| D | | 15 μs |
| S | | 18 μs |
| E | | 20 μs |
| F | | 25 μs |
| G | | 30 μs |
| K | | 40 μs |
| M | | 50 μs |
| P | | 55 μs |
| N | | 60 μs |
| T | | 80 μs |
| U | | 120 μs |
| O | | no guaranteed max. value |
| 1 | | see data sheet |
| 2 | | see data sheet |
| 5.Letter | | critical rate of rise forward voltage, thyristors for line commutated converters: |
| B | | 50 V/ μs |
| C | | 500 V/ μs |
| F | | 1000 V/ μs |
| G | | 1500 V/ μs |
| H | | 2000 V/ μs |
| | | thyristors for self-commutated converters: |
| | | critical rate of rise of forward voltage |
| | | according to DIN IEC 747-6: |
| | | immediately after turn-off: |
| B | | 50 V/ μs 50 V/ μs |
| C | | 500 V/ μs 500 V/ μs |
| F | | 1000 V/ μs 1000 V/ μs |
| L | | 500 V/ μs 50 V/ μs |
| M | | 1000 V/ μs 500 V/ μs |
| N | | 1000 V/ μs 50 V/ μs |

Rectifier

| | | |
|---|-----------|---|
| D | 1809 N 32 | |
| D | | diode |
| | 1809 | limiting average current (A) as a rule at $t_c = 100^\circ\text{C}$ |
| | | rectifier diode: |
| | N | anode on case or press-pack |
| | K | cathode on case |
| | S | fast rectifier diode: anode on case or press-pack |
| | U | cathode on case |
| | 32 | limiting repetitive peak reverse voltage in 100 V |
| | | mechanical construction: |
| | A | metric thread wire |
| | B | metric thread cable |
| | C | stud solder pin |
| | E | flat-base cable |
| | T | press-pack |

Half-controlled thyristor modules

| | | |
|-------|-------------------|---|
| TD | 121 N 18 K O F -A | |
| TD,DT | | with 1 symmetric thyristor and 1 diode |
| AD | | with 1 asymmetric thyristor and 1 diode (for circuit see outline) |
| | 121 | limiting average on-state current (A), $t_c = 85^\circ\text{C}$ |
| | | phase control thyristor and rectifier diode |
| | N | fast thyristor and fast diode |
| | F | fast thyristor with interdigitated gate and fast diode |
| | S | repetitive peak-off-state voltage in 100 V |
| | 18 | mech. constr.: pressure contact |
| | K | turn-off time (see thyristors) |
| | O | critical rate of rise of off-state voltage |
| | F | -A special design with common anode |
| | | -K special design with common cathode |

IGBT: IHM & IHV modules

| | | |
|----|--------------|---|
| FF | 200 R 12 K F | |
| FF | | dual version |
| FZ | | single version |
| FS | | six pulse bridge |
| F4 | | one phase bridge |
| FD | | chopper config. |
| DF | | chopper config. (for circuit see outline) |
| | 200 | max. DC-collector current (A) |
| | | reverse conducting |
| | R | |
| | 12 | collector-emitter-voltage in 100 V |
| | | mechanical construction: module |
| | K | fast switching type |
| | F | type with low V_{CEsat} |
| | L | single inline |
| | S | internal reference number |
| | 1 | advanced |
| | 2 | 2nd generation |
| | 3 | advanced |
| | 4 | 3rd generation |
| | | 2nd NPT generation |

IGBT: BSM modules

| | | |
|-----|-------------------|-----------------------------------|
| BSM | 100 GB 120 D N2 K | |
| B | | Silicon |
| S | | Type: S=Switch, Y = Diode |
| M | | Module |
| | 100 | current rating I_C |
| | | technology: G = IGBT-technology |
| | G | Configuration: |
| | B | A = single switch / diode |
| | | B = Halfbridge |
| | | D = 3-phase full bridge |
| | | T = Tripack |
| | | P = Power Integrated Module |
| | | AL=Chopper |
| | 120 | Voltage rating: $V_{CE} [V] / 10$ |
| | | with fast internal diode |
| | D | N=low inductance module design |
| | N | 2nd generation silicon |
| | 2 | K optional package variation |
| | | S collector sense |
| | | E xxxx special type with codo-no. |

Type designations

Fully controlled Thyristor modules

| | | | | | | | | |
|----|-----|---|----|---|---|---|----|---|
| TT | 121 | N | 18 | K | O | F | -A | |
| TT | | | | | | | | with 2 symmetric thyristors |
| TZ | | | | | | | | with 1 symmetric thyristor |
| | 121 | | | | | | | limiting average on-state current (A), $t_c = 85^\circ\text{C}$ |
| | | N | | | | | | phase control thyristor |
| | | F | | | | | | fast thyristor with central gate |
| | | | 18 | | | | | repetitive peak off-state voltage in 100 V |
| | | | | L | | | | mech. constr.: module-DCB |
| | | | | K | | | | mech. constr.: module |
| | | | | | O | | | turn-off time (see thyristors) |
| | | | | | | F | | critical rate of rise of off-state voltage |
| | | | | | | | -A | special design with common anode |
| | | | | | | | -K | special design with common cathode |

Diode modules

| | | | | | | | | |
|-----------|-----|-----|----|---|----|--|----|---|
| DD | 151 | N | 18 | K | -A | | | |
| DD | | | | | | | | dual version with 1 diode (for circuit see outline) |
| D, ND, DZ | | | | | | | | limiting average forward current (A), $t_c = 100^\circ\text{C}$ |
| | 151 | | | | | | | rectifier diode |
| | | N | | | | | | fast rectifier diode |
| | | F,S | | | | | | repetitive peak off-state voltage in 100 V |
| | | | 18 | | | | | mech. constr.: module-DCB |
| | | | | L | | | | mech. constr.: module |
| | | | | K | | | | special design with common anode |
| | | | | | | | -A | special design with common cathode |
| | | | | | | | -K | |

ISOPACK modules ECONOPACK modules

| | | | | | | | | |
|----|----|----|-----|---|----|-----|---|--|
| TD | B6 | HK | 105 | N | 16 | KOF | | |
| DD | | | | | | | | diode module |
| TT | | | | | | | | thyristor module |
| TD | | | | | | | | thyristor/diode |
| | B6 | | | | | | | three phase bridge |
| | W3 | | | | | | | three phase AC-switch |
| | | C | | | | | | fully controlled |
| | | H | | | | | | half controlled |
| | | U | | | | | | uncontrolled |
| | | K | | | | | | common cathode of thyristors |
| | | | 105 | | | | | output current (A) (W3C: RMS-current) |
| | | | | N | | | | phase control thyristor/diode |
| | | | | | 16 | | | repetitive peak off-state voltage in 100V |
| | | | | | | L | | mech. constr.: module |
| | | | | | | R | | outline: ECONOPACK |
| | | | | | | RR | | outline: ECONOPACK with integr. brake chopper IGBT |
| | | | | | | | O | no guaranteed turn-off time |
| | | | | | | | F | critical rate of rise of off-state voltage |

Typenbezeichnungen

vollgesteuerte Thyristor-Module

| | | | | | | | | |
|----|-----|---|----|---|---|---|----|--|
| TT | 121 | N | 18 | K | O | F | -A | |
| TT | | | | | | | | mit 2 symm. sperrenden Thyristoren |
| TZ | | | | | | | | mit 1 symm. sperrenden Thyristor |
| | 121 | | | | | | | Dauergrenzstrom (A) $t_c = 85^\circ\text{C}$ |
| | | N | | | | | | Netz-Thyristor |
| | | F | | | | | | schneller Thyristor mit Zentralgate |
| | | | 18 | | | | | periodische Spitzenspannung in 100V |
| | | | | L | | | | mech. Ausführung: Modul-DCB |
| | | | | K | | | | mech. Ausführung: Modul |
| | | | | | O | | | Freiwerdzeit (siehe Thyristoren) |
| | | | | | | F | | kritische Spannungssteilheit |
| | | | | | | | -A | Sonderausführung mit gemeinsamer Anode |
| | | | | | | | -K | Sonderausführung mit gemeinsamer Kathode |

Dioden-Module

| | | | | | | | | |
|----------|-----|---|----|---|----|--|----|---|
| DD | 151 | N | 18 | K | -A | | | |
| DD | | | | | | | | mit 2 Dioden |
| DN,ND,DZ | | | | | | | | mit 1 Diode (Schaltung siehe Maßbild) |
| | 151 | | | | | | | Dauergrenzstrom (A) $t_c = 100^\circ\text{C}$ |
| | | N | | | | | | Netz-Gleichrichterdiode |
| | | S | | | | | | schnelle Gleichrichterdiode |
| | | | 18 | | | | | periodische Spitzenspannung in 100 V |
| | | | | L | | | | mech. Ausführung: Modul-DCB |
| | | | | K | | | | mech. Ausführung: Modul |
| | | | | | | | -A | Sonderausführung mit gemeinsamer Anode |
| | | | | | | | -K | Sonderausführung mit gemeinsamer Kathode |

ISOPACK-Module ECONOPACK-Module

| | | | | | | | | |
|----|----|----|-----|---|----|-----|---|---|
| TD | B6 | HK | 135 | N | 16 | KOF | | |
| DD | | | | | | | | Dioden-Modul |
| TT | | | | | | | | Thyristor-Modul |
| TD | | | | | | | | Thyristor/Dioden-Modul |
| | B6 | | | | | | | Sechspuls-Brücke |
| | W3 | | | | | | | Dreiphasen-Wechselweg |
| | | C | | | | | | vollgesteuert |
| | | H | | | | | | halbgesteuert |
| | | U | | | | | | ungesteuert |
| | | K | | | | | | gemeins. Kathode der Thyristoren |
| | | | 135 | | | | | Ausgangsstrom (A) (W3C: Effektivstrom) |
| | | | | N | | | | Netzthyristor/Diode |
| | | | | | 16 | | | periodische Spitzenspannung in 100V |
| | | | | | | L | | mech. Ausführung: Module |
| | | | | | | R | | Ausführung: ECONOPACK |
| | | | | | | RR | | Ausführung: ECONOPACK mit integr. Bremschopper IGBT |
| | | | | | | | O | keine garantierte Freiwerdzeit |
| | | | | | | | F | kritische Spannungssteilheit |