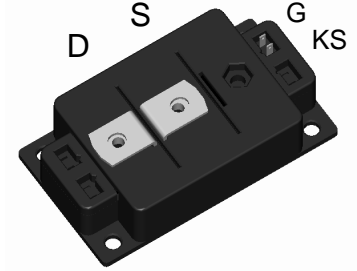
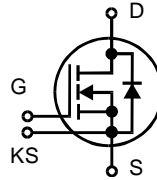


HipPerFET™ Module

VMO 580-02F

$V_{DSS} = 200 \text{ V}$
 $I_{D25} = 580 \text{ A}$
 $R_{DS(on)} = 3.8 \text{ m}\Omega$

N-Channel Enhancement Mode



Preliminary Data

| MOSFET | | | |
|-----------|---|-----------------|---|
| Symbol | Conditions | Maximum Ratings | |
| V_{DSS} | $T_{VJ} = 25^\circ\text{C to } 150^\circ\text{C}$ | 200 | V |
| V_{GS} | | ± 20 | V |
| I_{D25} | $T_C = 25^\circ\text{C}$ | 580 | A |
| I_{D80} | $T_C = 80^\circ\text{C}$ | 430 | A |
| I_{F25} | (diode) $T_C = 25^\circ\text{C}$ | 580 | A |
| I_{F80} | (diode) $T_C = 80^\circ\text{C}$ | 430 | A |

Features

- HiPerFET™ technology
 - low $R_{DS(on)}$
 - dv/dt ruggedness
 - fast intrinsic reverse diode
- package
 - low inductive current path
 - screw connection to high current main terminals
 - use of non interchangeable connectors for auxiliary terminals possible
 - Kelvin source terminals for easy drive
 - isolated ceramic base plate

| Symbol | Conditions | Characteristic Values ($T_{VJ} = 25^\circ\text{C}$, unless otherwise specified) | | |
|---|---|--|------|-----------------|
| | | min. | typ. | max. |
| $R_{DS(on)}$ | $V_{GS} = 10 \text{ V}; I_D = I_{D80}$ | | 3.2 | 3.8 m Ω |
| $V_{GS(th)}$ | $V_{DS} = 20 \text{ V}; I_D = 50 \text{ mA}$ | 2 | | 4 V |
| I_{DSS} | $V_{DS} = 0.8 \cdot V_{DSS}; V_{GS} = 0 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$ | | 3 | 2.6 mA mA |
| I_{GSS} | $V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$ | | | 1 μA |
| Q_g Q_{gs} Q_{gd} | } $V_{GS} = 10 \text{ V}; V_{DS} = 0.5 \cdot V_{DSS}; I_D = I_{D80}$ | | 2750 | nC |
| | | | 500 | nC |
| | | | 1350 | nC |
| $t_{d(on)}$ t_r $t_{d(off)}$ t_f | } $V_{GS} = 10 \text{ V}; V_{DS} = 0.5 \cdot V_{DSS};$ $I_D = I_{D80}; R_G = 1 \Omega$ | | 210 | ns |
| | | | 500 | ns |
| | | | 900 | ns |
| | | | 350 | ns |
| V_F | (diode) $I_F = 300 \text{ A}; V_{GS} = 0 \text{ V}$ | | 0.9 | 1.1 V |
| t_{rr} | (diode) $I_F = 300 \text{ A}; -di/dt = 500 \text{ A}/\mu\text{s}; V_{DS} = \frac{1}{2} V_{DSS}$ | | 300 | ns |
| R_{thJC} R_{thJS} | with heat transfer paste | | 0.07 | 0.05 K/W K/W |

Applications

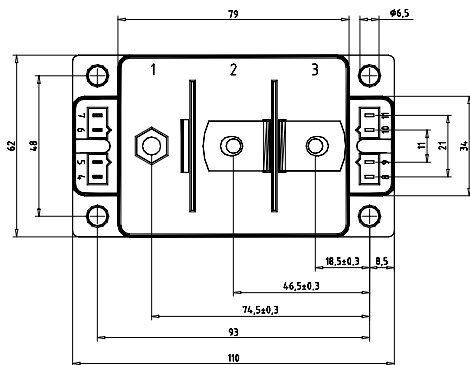
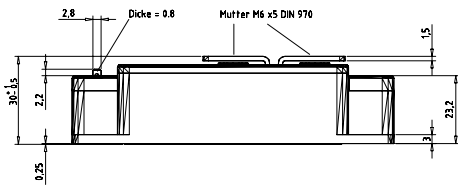
- converters with high power density for
 - main and auxiliary AC drives of electric vehicles
 - DC drives
 - power supplies

Module

| Symbol | Conditions | Maximum Ratings | |
|------------|--|-----------------|----|
| T_{VJ} | | -40...+150 | °C |
| T_{stg} | | -40...+125 | °C |
| V_{ISOL} | $I_{ISOL} \leq 1 \text{ mA}; 50/60 \text{ Hz}$ | 3600 | V~ |
| M_d | Mounting torque (M6) | 2.25 - 2.75 | Nm |
| | Terminal connection torque (M6) | 4.5 - 5.5 | Nm |

| Symbol | Conditions | Characteristic Values | | |
|--------|------------|-----------------------|------|------|
| | | min. | typ. | max. |
| Weight | | 250 | | g |

Dimensions in mm (1 mm = 0.0394")



Optional accessories for modules

keyed twin plugs
(UL758, style 1385, CSA class 5851, guide 460-1-1)

- Type ZY180L with wire length 350mm
 - for pins 4 (yellow wire) and 5 (red wire)
 - for pins 11 (yellow wire) and 10 (red wire)
- Type ZY180R with wire length 350mm
 - for pins 7 (yellow wire) and 6 (red wire)
 - for pins 8 (yellow wire) and 9 (red wire)