

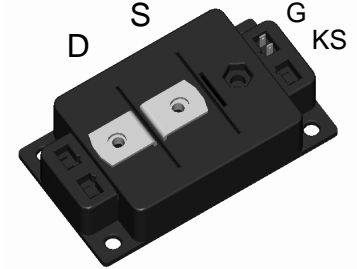
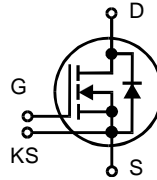


HipPerFET™ Module

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

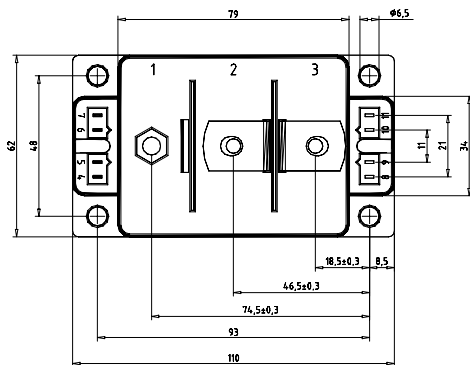
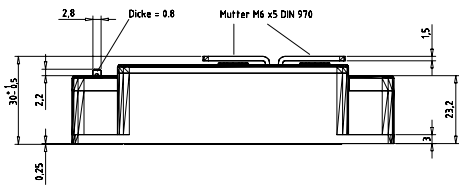
- converters with high power density for
 - main and auxiliary AC drives of electric vehicles
 - DC drives
 - power supplies

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)