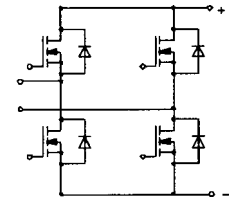
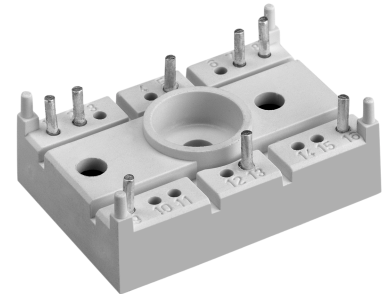


### SEMITOP® 2 MOSFET Module

#### SK 85 MH 10



MH

Absolute Maximum Ratings		Values	Units
Symbol	Conditions <sup>1)</sup>		
V <sub>DSS</sub>		100	V
V <sub>GSS</sub>		± 20	V
I <sub>D</sub>	T <sub>h</sub> = 25/80 °C	30 / 30 <sup>3)</sup>	A
I <sub>DM</sub>	t <sub>p</sub> < 1 ms; T <sub>h</sub> = 25/80 °C	30 / 30 <sup>3)</sup>	A
Inverse Diode			
I <sub>F</sub> = -I <sub>D</sub>	T <sub>h</sub> = 25/80 °C	30 / 30 <sup>3)</sup>	A
I <sub>FM</sub> = -I <sub>DM</sub>	t <sub>p</sub> < 1 ms; T <sub>h</sub> = 25/80 °C	30 / 30 <sup>3)</sup>	A
T <sub>vj</sub>		- 40 ... + 150	°C
T <sub>stg</sub>		- 40 ... + 125	°C
T <sub>sol</sub>	10 s	260	°C
V <sub>isol</sub>	a.c. 50 Hz, RMS, 1 min	2500	V~

Characteristics		min.	typ.	max.	Units
Symbol	Conditions <sup>1)</sup>				
MOSFET					
V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0, I <sub>D</sub> = 5,6 mA	≥ V <sub>DSS</sub>	-	-	V
V <sub>GE(th)</sub>	V <sub>GS</sub> = V <sub>DS</sub> , I <sub>D</sub> = 0,75 mA	2,5	3,3	-	V
I <sub>DSS</sub>	V <sub>GS</sub> = 0 V } T <sub>j</sub> = 25 °C V <sub>DS</sub> = V <sub>DSS</sub> } T <sub>j</sub> = 125 °C	-	-	100	μA
		-	-	500	μA
I <sub>GSS</sub>	V <sub>GS</sub> = 20 V, V <sub>DS</sub> = 0 V	-	-	100	nA
R <sub>DS(on)</sub>	I <sub>D</sub> = 80 A } T <sub>j</sub> = 25 °C V <sub>GS</sub> = 10 V } T <sub>j</sub> = 125 °C	-	-	7,5	mΩ
		-	-	13,5	mΩ
C <sub>CHC</sub>	per MOSFET	-	-	-	pF
C <sub>iss</sub>	V <sub>GS</sub> = 0 V V <sub>DS</sub> = 25 V f = 1 MHz	-	9,1	-	nF
C <sub>oss</sub>		-	1,8	-	nF
C <sub>rss</sub>		-	1,6	-	nF
L <sub>DS</sub>		-	2,2	-	nH
t <sub>d(on)</sub>	V <sub>DD</sub> = 50 V V <sub>GS</sub> = 10 V I <sub>D</sub> = 50 A R <sub>G</sub> = 10 Ω per MOSFET	-	120	-	ns
t <sub>r</sub>		-	90	-	ns
t <sub>d(off)</sub>		-	570	-	ns
t <sub>f</sub>		-	110	-	ns
R <sub>thjh</sub> <sup>2)</sup>		-	-	1,1	K/W
Inverse Diode					
V <sub>SD</sub>	I <sub>F</sub> = 50 A V <sub>GS</sub> = 0 V; I <sub>F</sub> = 50 A	-	0,85	-	V
I <sub>RRM</sub>		-	37,6	-	A
Q <sub>rr</sub>		-	1,2	-	μC
t <sub>rr</sub>		-	TBD	-	ns
Mechanical Data					
M1	mounting torque	-	-	2,0	Nm
w		-	20	-	g
Case			T 34		

#### Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench-technology
- Short internal connections and low inductance case
- UL recognized, file no. E 63 532

#### Typical Applications

- Low switched mode power supplies
- DC servo drives
- UPS

<sup>1)</sup> T<sub>h</sub> = 25 °C, unless otherwise specified

<sup>2)</sup> Thermal resistance junction to heatsink

<sup>3)</sup> Current limited by number of pins

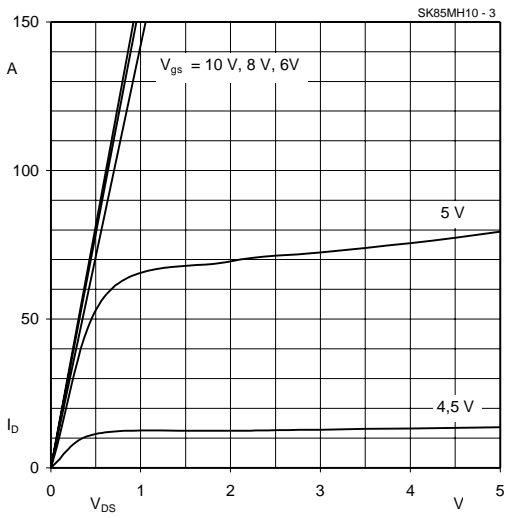


Fig. 3 Output characteristic,  $t_p = 80\ \mu\text{s}$ ,  $T_j = 25\ ^\circ\text{C}$

Fig. 4 Maximum safe operating area, single pulse

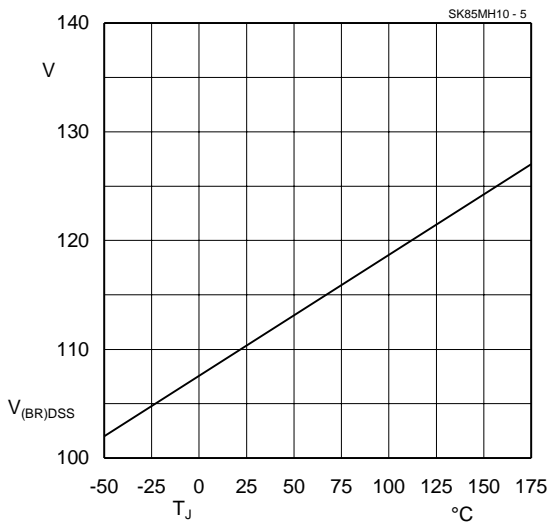


Fig. 5 Breakdown voltage vs. temperature

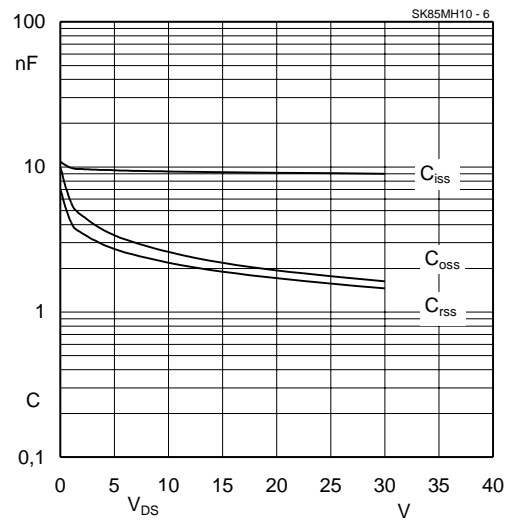


Fig. 6 Typ. capacitances vs. drain-source voltage

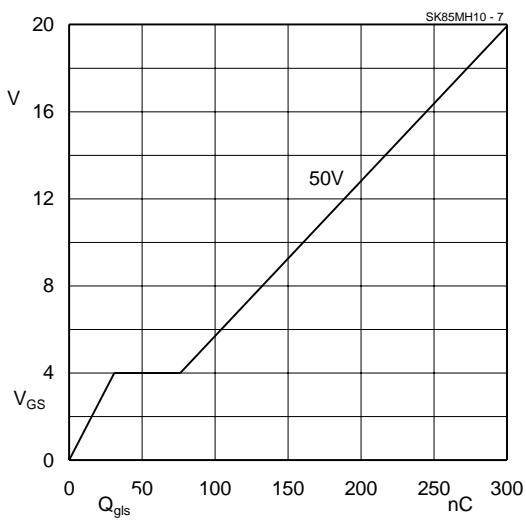


Fig. 7 Gate charge characteristic,  $I_{Dp} = 80\ \text{A}$

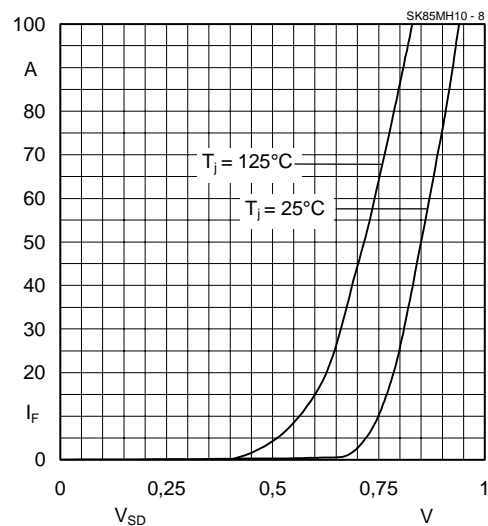
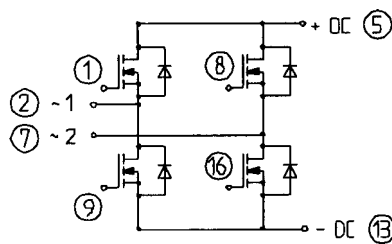
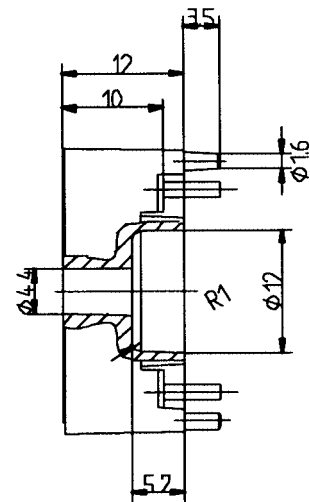
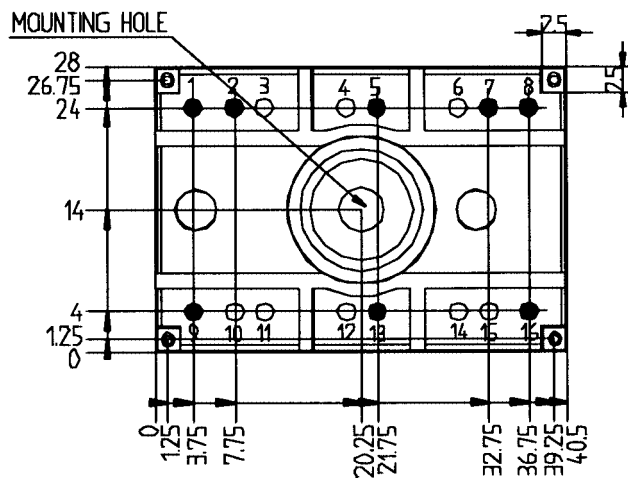
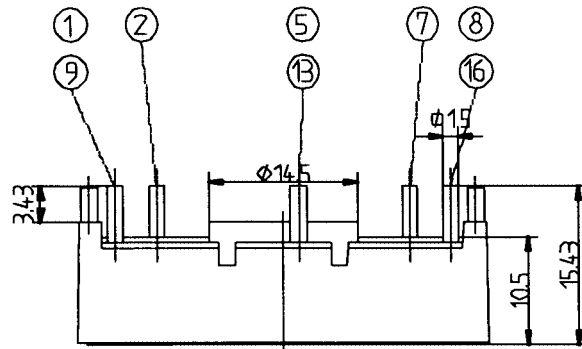


Fig. 8 Diode forward characteristic,  $t_p = 80\ \mu\text{s}$

**SEMITOP® 2**  
**SK 85 MH 10**

Case T 34



Dimensions in mm

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.