

SEMITOP® 3

Mosfet Module

SK 260MB10

Preliminary Data

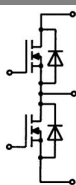
Features

- 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

Typical Applications*

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

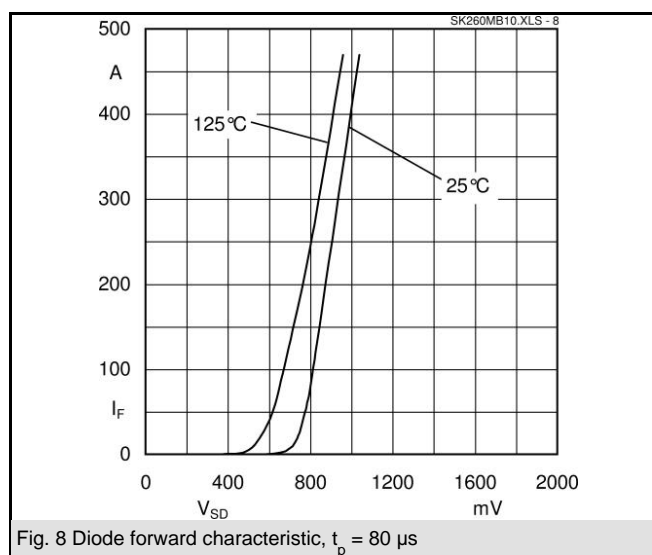
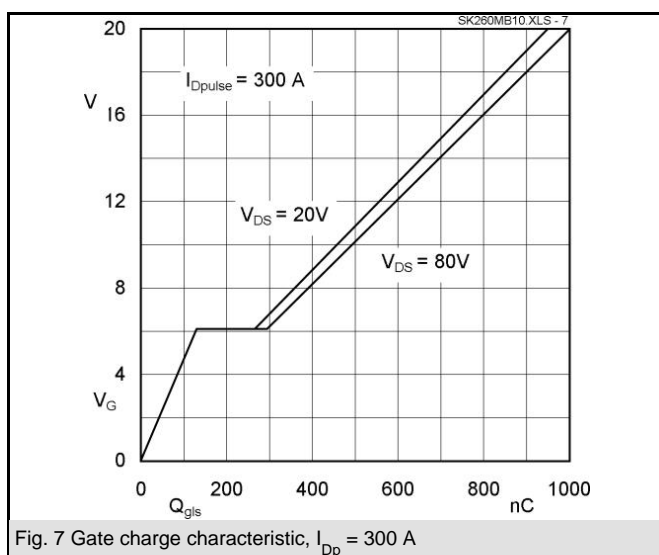
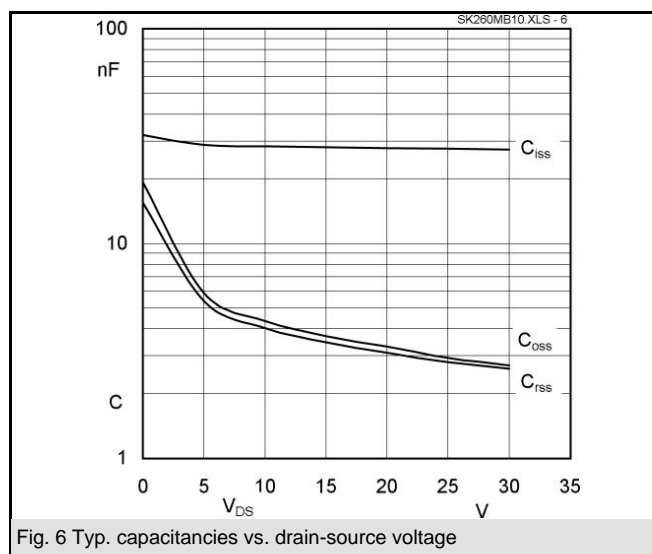
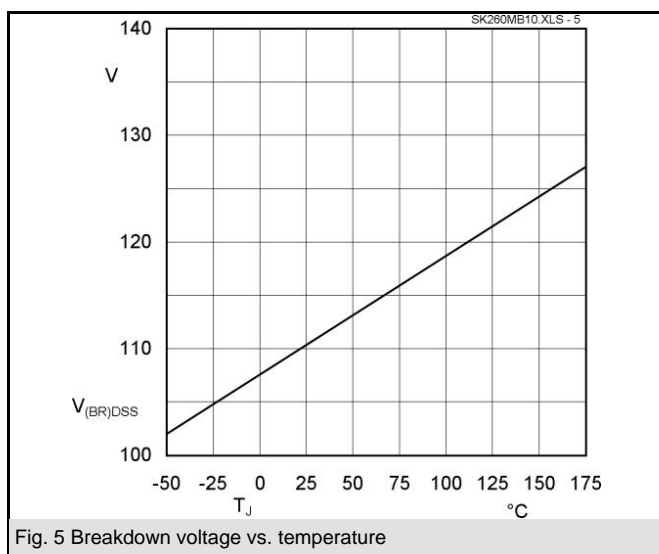
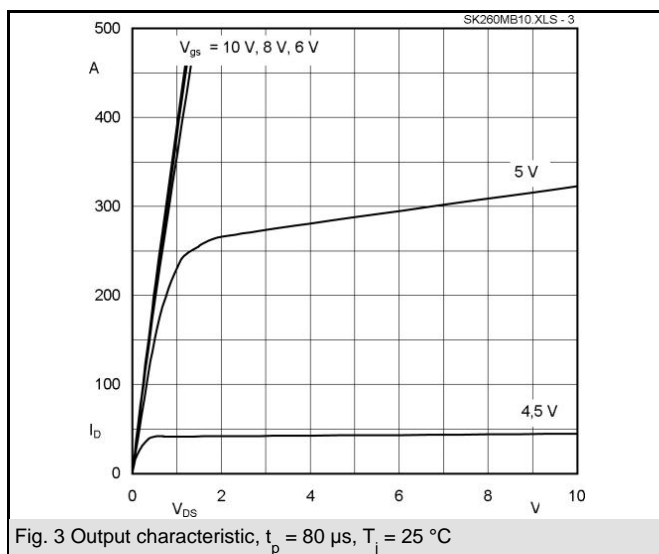
1) Maximum PCB temperature, at pins contact, 85°C

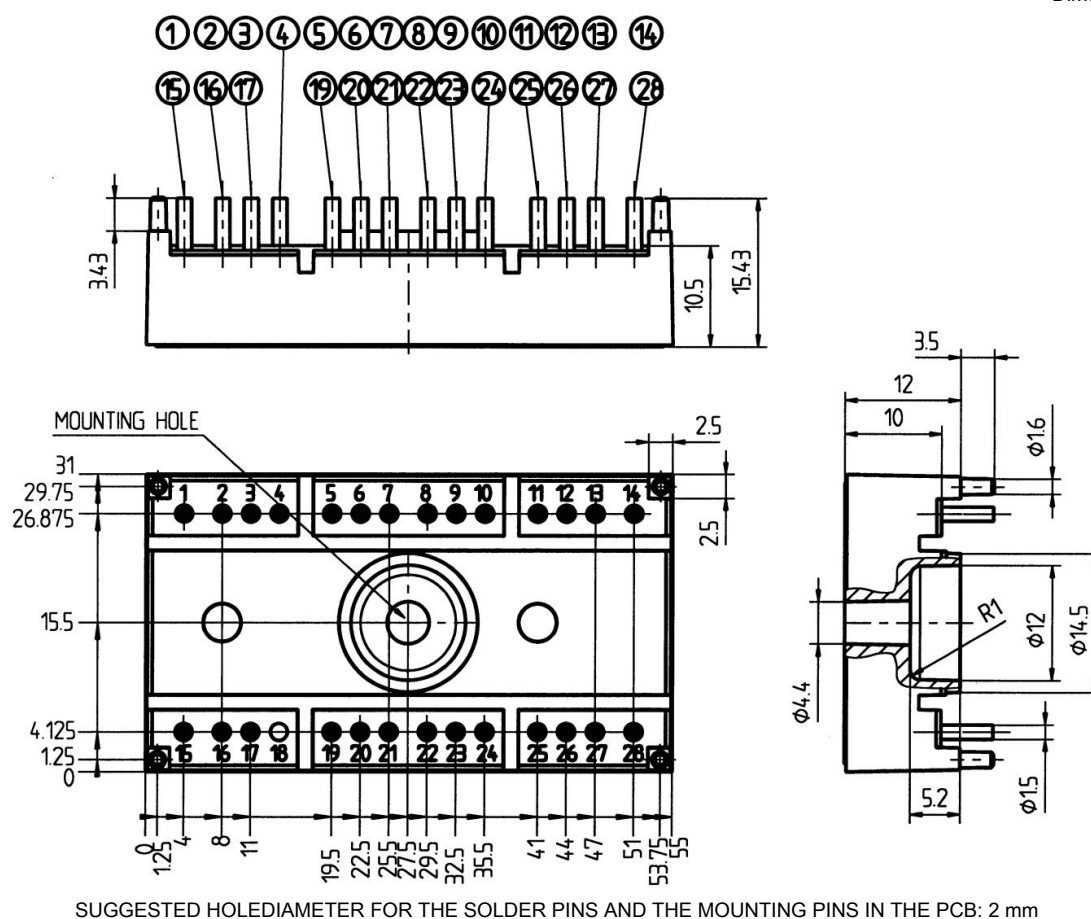


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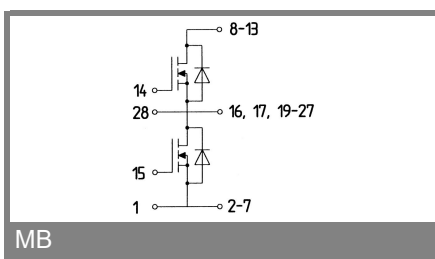
Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
MOSFET			
V_{DSS}		100	V
V_{GSS}		± 20	V
I_D	$T_s = 25 (80)^\circ\text{C}; 1)$	230 (180)	A
I_{DM}	$t_p < 1 \text{ ms}; T_s = 25 (80)^\circ\text{C}; 1)$	460 (360)	A
T_j		-40...+150	$^\circ\text{C}$
Inverse diode			
$I_F = -I_D$	$T_s = 25 (80)^\circ\text{C};$	230 (180)	A
$I_{FM} = -I_{DM}$	$t_p < 1 \text{ ms}; T_s = 25 (80)^\circ\text{C};$	460 (360)	A
T_j		-40...+150	$^\circ\text{C}$
Freewheeling CAL diode			
$I_F = -I_D$	$T_s = ^\circ\text{C}$		A
T_j			$^\circ\text{C}$
T_{stg}		- 40 ... + 125	$^\circ\text{C}$
T_{sol}	Terminals, 10 s	260	$^\circ\text{C}$
V_{isol}	a.c. 50 Hz, RMS, 1 min (1s)	2500 / 3000	V

Characteristics		$T_s = 25^\circ\text{C}$, unless otherwise specified		
Symbol	Conditions	min.	typ.	max. Units
MOSFET				
$V_{(BR)DSS}$	$V_{GS} = 0 \text{ V}; I_D = 5,6 \text{ mA}$	$\geq V_{DSS}$		V
$V_{GS(th)}$	$V_{GS} = V_{DS}; I_D = 5,6 \text{ mA}$	2,5	3,3	V
I_{DSS}	$V_{GS} = 0 \text{ V}; V_{DS} = V_{DSS}; T_j = 25 (125)^\circ\text{C}$			100 (500) μA
I_{GSS}	$V_{GS} = 20 \text{ V}; V_{DS} = 0 \text{ V}$			100 nA
$R_{DS(on)}$	$I_D = 300 \text{ A}; V_{GS} = 10 \text{ V}; T_j = 25^\circ\text{C}$			2,5 m Ω
$R_{DS(on)}$	$I_D = 300 \text{ A}; V_{GS} = 10 \text{ V}; T_j = 125^\circ\text{C}$		3,5	4,5 m Ω
C_{CHC}	per MOSFET			pF
C_{iss}	under following conditions:		27,6	nF
C_{oss}	$V_{GS} = 0 \text{ V}; V_{DS} = 25 \text{ V}; f = 1 \text{ MHz}$		2,9	nF
C_{rss}			2,8	nF
L_{DS}			2,2	nH
$t_{d(on)}$	under following conditions:		410	ns
t_r	$V_{DD} = 50 \text{ V}; V_{GS} = 10 \text{ V};$ $I_D = 300 \text{ A}$		450	ns
$t_{d(off)}$	$R_G = 25 \Omega$		1490	ns
t_f			430	ns
$R_{th(j-s)}$	per MOSFET (per module)		0,45 (0,23)	K/W
Inverse diode				
V_{SD}	$I_F = 300 \text{ A}; V_{GS} = 0 \text{ V}; T_j = 25^\circ\text{C}$		0,76	V
I_{RRM}	under following conditions:		32	A
Q_{rr}	$I_F = 300 \text{ A}; T_{vj} = 125^\circ\text{C}; R_G = 8,2 \Omega$		3	μC
t_{rr}	$V_R = 50 \text{ A}; di/dt = 900 \text{ A}/\mu\text{s}$			ns
Free-wheeling diode				
V_F	$I_F = \text{A}; V_{GS} = \text{V}$			V
I_{RRM}	under following conditions:			A
Q_{rr}	$I_F = \text{A}; T_{vj} = ^\circ\text{C}$			μC
t_{rr}	$V_r = \text{A}; di/dt = \text{A}/\mu\text{s}$			ns
Mechanical data				
M1	mounting torque		2,5	Nm
w			30	g
Case	SEMITOP® 3		T 24	





Case T24



This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.