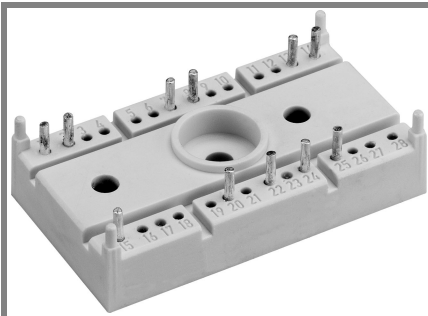


SK 300MB075



SEMITOP® 3

Mosfet Module

SK 300MB075

Preliminary Data

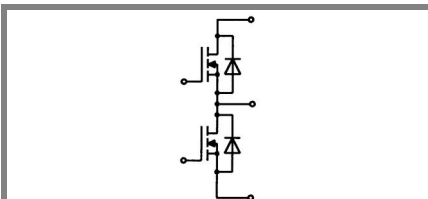
Features

- 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

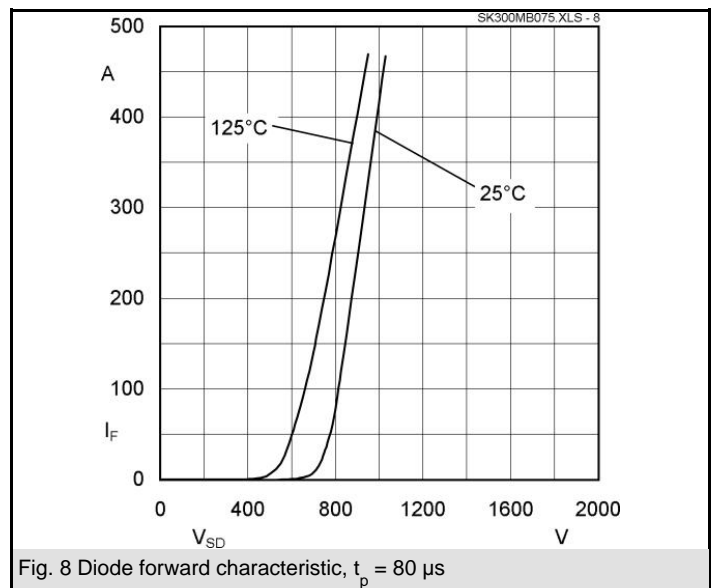
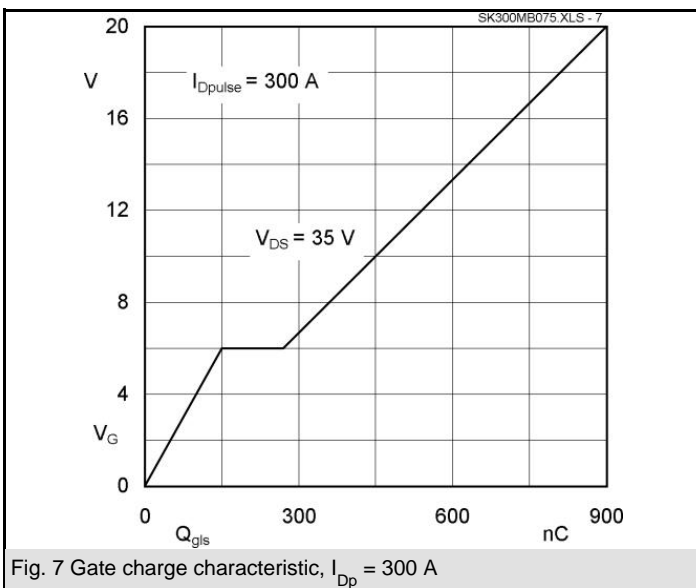
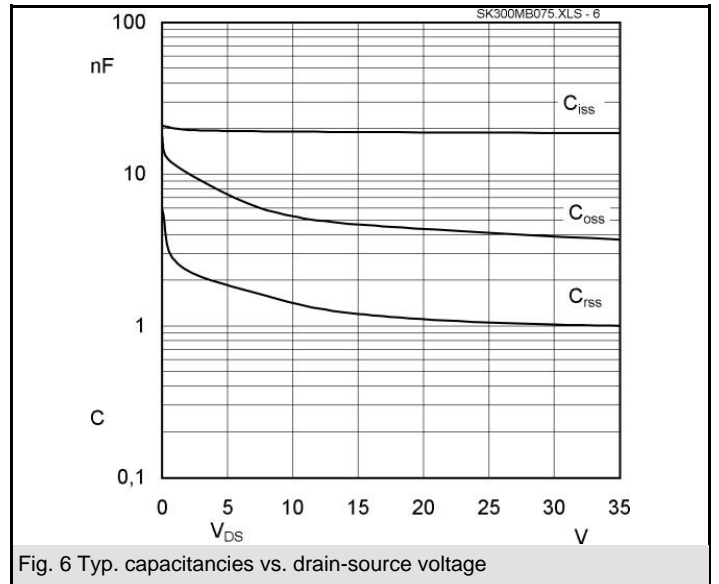
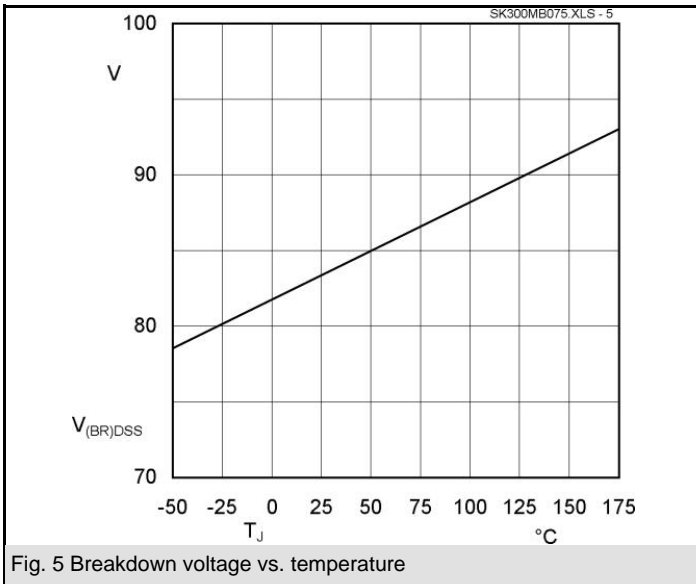
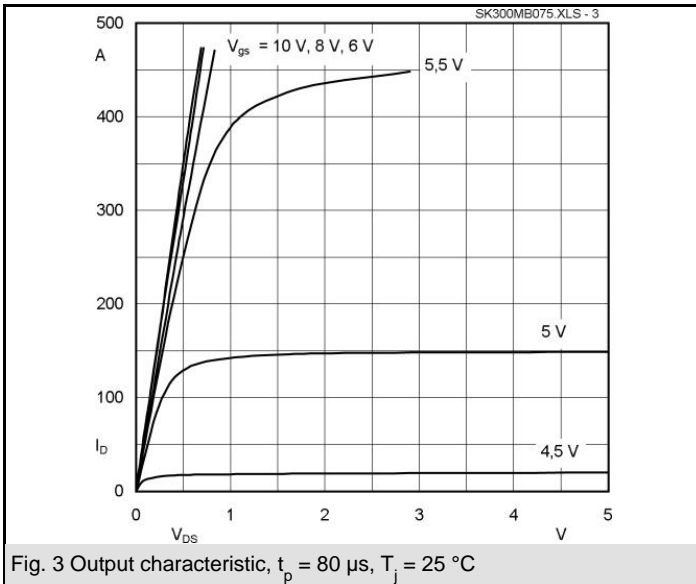
1) Maximum PCB temperature, at pins/PCB contact, = 85°C

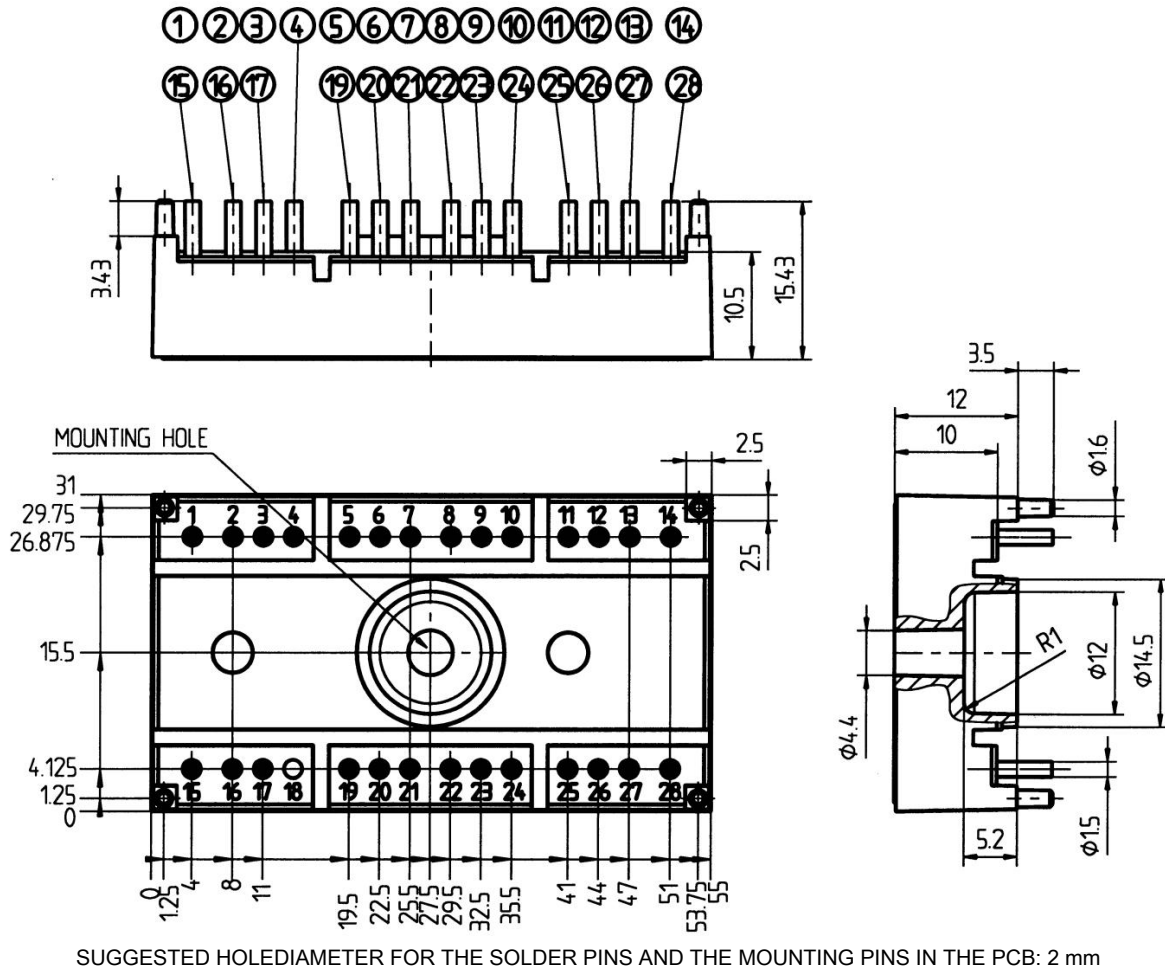


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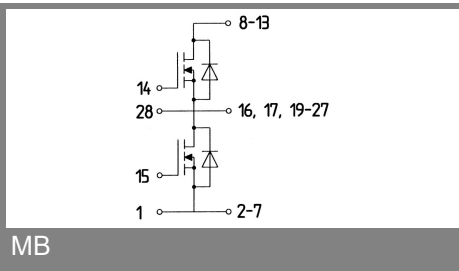
Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
MOSFET			
V_{DSS}		75	V
V_{GSS}		± 20	V
I_D	$T_s = 25\text{ (80) °C}$; ¹⁾	290 (210)	A
I_{DM}	$t_p < 1\text{ ms}$; $T_s = 25\text{ (80) °C}$; ¹⁾	580 (420)	A
T_j		-40...+150	°C
Inverse diode			
$I_F = -I_D$	$T_s = 25\text{ (80) °C}$;	290 (210)	A
$I_{FM} = -I_{DM}$	$t_p < 1\text{ ms}$; $T_s = 25\text{ (80) °C}$;	580 (210)	A
T_j		-40...+150	°C
Freewheeling CAL diode			
$I_F = -I_D$	$T_s = \text{°C}$		A
T_j			°C
T_{stg}		-40 ... +125	°C
T_{sol}	Terminals, 10 s	260	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 min (1s)	2500 / 3000	V

Characteristics		$T_s = 25\text{ °C}$, 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}	$V_{GS} = 0\text{ V}$; $V_{DS} = V_{DSS}$; $T_j = 25\text{ (125) °C}$			100 (500)	μA
I_{GSS}	$V_{GS} = 20\text{ V}$; $V_{DS} = 0\text{ V}$			100	nA
$R_{DS(on)}$	$I_D = 200\text{ A}$; $V_{GS} = 10\text{ V}$; $T_j = 25\text{ °C}$			1,6	m Ω
$R_{DS(on)}$	$I_D = 200\text{ A}$; $V_{GS} = 10\text{ V}$; $T_j = 125\text{ °C}$		2,3	3	m Ω
C_{CHC}	per MOSFET				pF
C_{iss}	under following conditions:		18,9		nF
C_{oss}	$V_{GS} = 0\text{ V}$; $V_{DS} = 25\text{ V}$; $f = 1\text{ MHz}$		3,6		nF
C_{rss}			1,1		nF
L_{DS}			2,2		nH
$t_{d(on)}$	under following conditions:		350		ns
t_r	$V_{DD} = 40\text{ V}$; $V_{GS} = 10\text{ V}$; $I_D = 300\text{ A}$		620		ns
$t_{d(off)}$	$R_G = 25\text{ }\Omega$		1250		ns
t_f			400		ns
$R_{th(j-s)}$	per MOSFET (per module)			0,45	K/W
Inverse diode					
V_{SD}	$I_F = 300\text{ A}$; $V_{GS} = 0\text{ V}$; $T_j = 25\text{ °C}$		0,8		V
I_{RRM}	under following conditions:				A
Q_{rr}	$I_F = \text{A}$; $T_{vj} = \text{°C}$; $R_G = \Omega$				μC
t_{rr}	$V_R = \text{A}$; $di/dt = \text{A}/\mu\text{s}$				ns
Free-wheeling diode					
V_F	$I_F = \text{A}$; $V_{GS} = \text{V}$				V
I_{RRM}	under following conditions:				A
Q_{rr}	$I_F = \text{A}$; $T_{vj} = \text{°C}$				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.

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