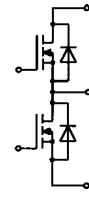
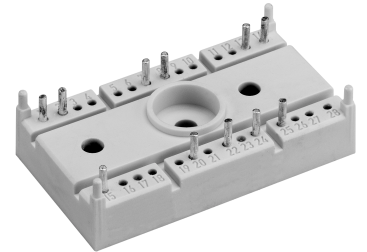


SEMITOP® 3 MOSFET Module

SK 300 MB 075



MB

Absolute Maximum Ratings		Values	Units
Symbol	Conditions ¹⁾		
V _{DSS}		75	V
V _{GSS}		± 20	V
I _D	T _h = 25/80 °C	180 / 180 ³⁾	A
I _{DM}	t _p < 1 ms; T _h = 25/80 °C	360 / 360 ³⁾	A
Inverse Diode			
I _F = -I _D	T _h = 25/80 °C	180 / 180 ³⁾	A
I _{FM} = -I _{DM}	t _p < 1 ms; T _h = 25/80 °C	360 / 360 ³⁾	A
T _{vj}		- 40 ... + 150	°C
T _{stg}		- 40 ... + 125	°C
T _{sol}	10 s	260	°C
V _{isol}	a.c. 50 Hz, RMS, 1 min	2500	V~

Characteristics		min.	typ.	max.	Units
Symbol	Conditions ¹⁾				
MOSFET					
V _{(BR)DSS}	V _{GS} = 0, I _D = 5,6 mA	≥ V _{DSS}	-	-	V
V _{GE(th)}	V _{GS} = V _{DS} , I _D = 0,75 mA	2,5	3,3	-	V
I _{DSS}	V _{GS} = 0 V } T _j = 25 °C V _{DS} = V _{DSS} } T _j = 125 °C	-	-	100	μA
		-	-	500	μA
I _{GSS}	V _{GS} = 20 V, V _{DS} = 0 V	-	-	100	nA
R _{DS(on)}	I _D = 200 A } T _j = 25 °C V _{GS} = 10 V } T _j = 125 °C	-	-	1,6	mΩ
		-	2,3	3	mΩ
C _{CHC}	per MOSFET	-	-	-	pF
C _{iss}	V _{GS} = 0 V } V _{DS} = 25 V } f = 1 MHz	-	18,9	-	nF
C _{oss}		-	3,6	-	nF
C _{rss}		-	1,1	-	nF
L _{DS}		-	2,2	-	nH
t _{d(on)}	V _{DD} = 40 V } V _{GS} = 10 V } I _D = 300 A } R _G = 25 Ω } per MOSFET	-	350	-	ns
t _r		-	620	-	ns
t _{d(off)}		-	1250	-	ns
t _f		-	400	-	ns
R _{thjh} ²⁾		-	-	0,45	-
Inverse Diode					
V _{SD}	I _F = 300 A V _{GS} = 0 V; I _F = 300 A	-	0,8	-	V
I _{RRM}		-	TBD	-	A
Q _{rr}		-	TBD	-	μC
t _{rr}		-	TBD	-	ns
Mechanical Data					
M1	mounting torque	-	-	2,5	Nm
w		-	30	-	g
Case			T 24		

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

¹⁾ T_h = 25 °C, unless otherwise specified

²⁾ Thermal resistance junction to heatsink

³⁾ Current limited by number of pins

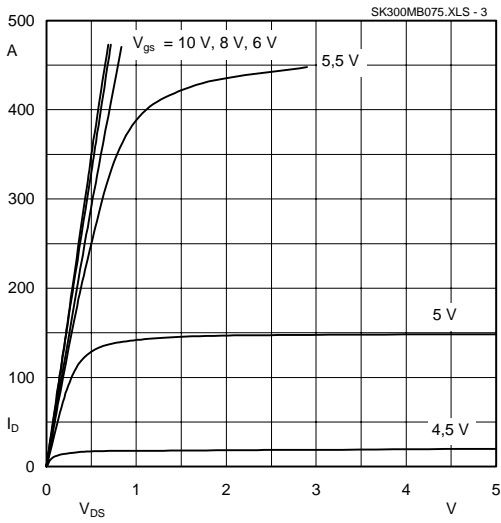


Fig. 3 Output characteristic, $t_p = 80 \mu s$, $T_j = 25^\circ C$

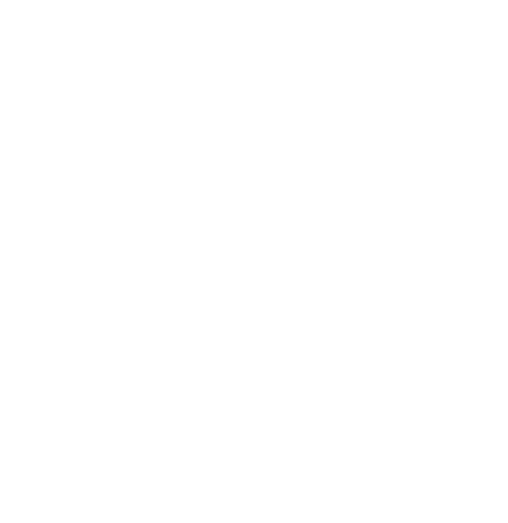


Fig. 4 Maximum safe operating area, single pulse

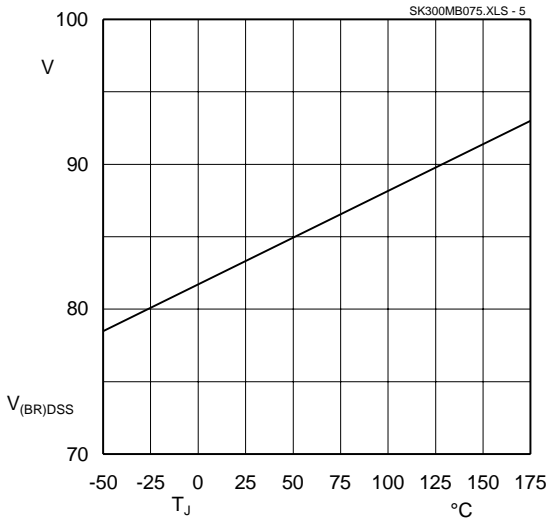


Fig. 5 Breakdown voltage vs. temperature

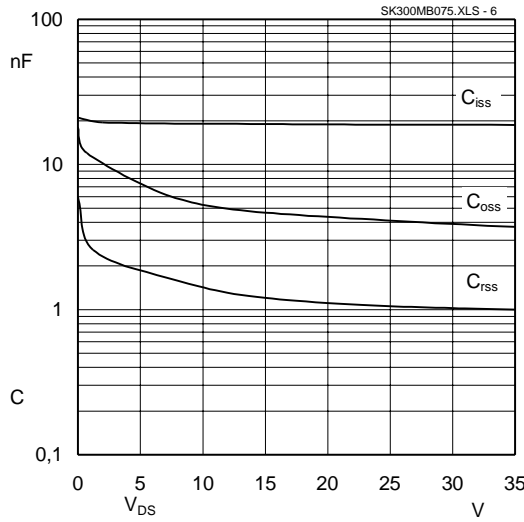


Fig. 6 Typ. capacitances vs. drain-source voltage

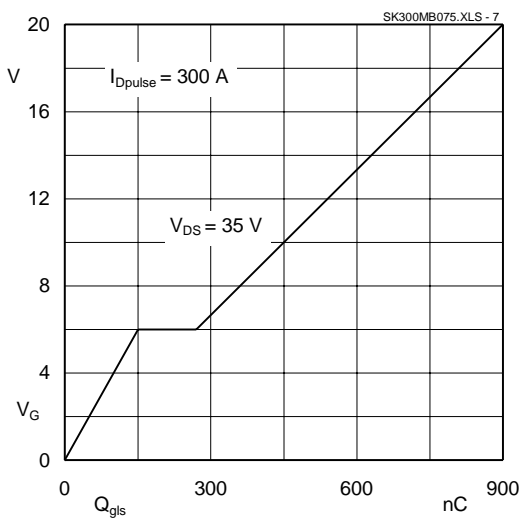


Fig. 7 Gate charge characteristic, $I_{Dp} = 300$ A

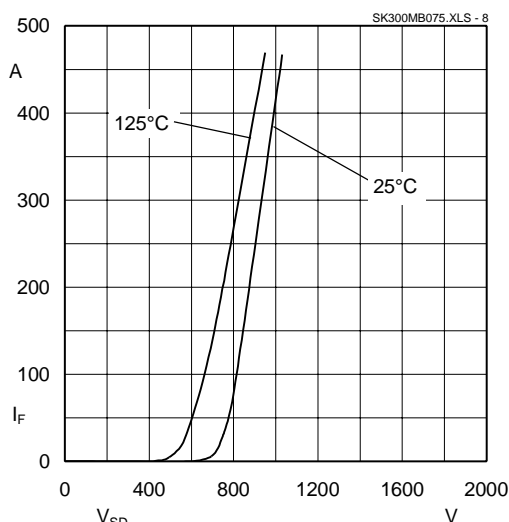
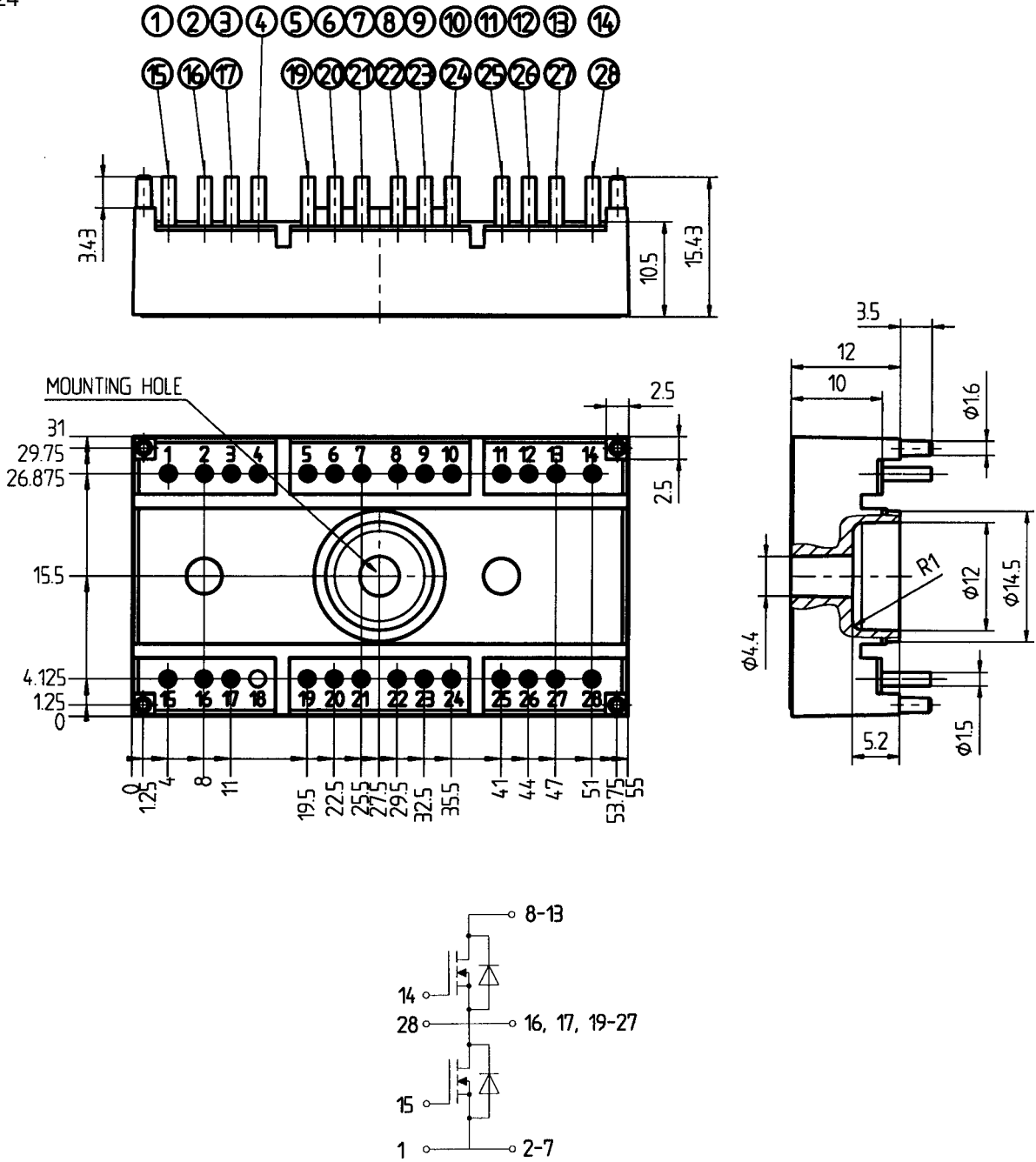


Fig. 8 Diode forward characteristic, $t_p = 80 \mu s$

SEMITOP® 3
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Case T 24



Dimensions in mm

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