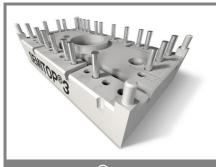
SK 80 MBBB 055



SEMITOP® 3

MOSFET Module

SK80MBBB055

Publish Data

Features

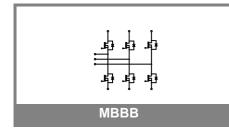
- Compact design
- · One screw mounting
- · Heat transfer and isolation through direct copper bonding aluminium oxide ceramic (DBC)
- Trench-gate technologyShort internal connections and low inductance case

Typical Applications*

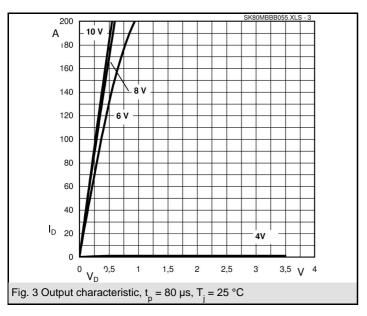
- Low power SMPS
- EV vehicles
- 1) Maximum PCB temperature, at pins contact, = 85°C
- 2) R_{ds(on)} = chip level value

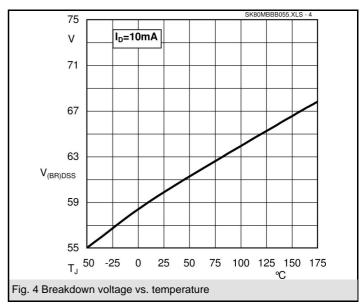
Absolute	Maximum Ratings	T _s = 25 °C, unless otherwise specified					
Symbol	Conditions	Values	Units				
MOSFET							
V_{DSS}		55	V				
V_{GSS}		± 20	V				
I _D	$T_s = 25 (80) ^{\circ}C; 1)$	117 (87)	Α				
I _{DM}	$t_p < 1 \text{ ms}; T_s = 25 (80) ^{\circ}C;$	234 (174)	Α				
T _j		- 40 + 150	°C				
Inverse diode							
I _F = - I _D	T _s = 25 (80) °C;	117 (87)	Α				
$I_{FM} = -I_{DM}$	$t_p < 1 \text{ ms; } T_s = 25 (80) \text{ °C;}$	234 (174)	Α				
T _j		- 40 + 150	°C				
Freewheeling CAL diode							
$I_F = -I_D$	$T_s = ^{\circ}C$		Α				
T _j			°C				
T _{stg}		- 40 + 125	°C				
T _{sol}	Terminals, 10 s	260	°C				
V _{isol}	AC, 1 min (1s)	2500 / 3000	V				

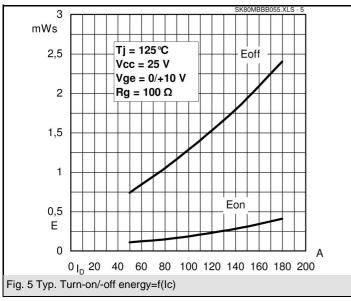
Characte	ristics	$T_s = 25 ^{\circ}C$,	r _s = 25 °C, unless otherwise specified					
Symbol	Conditions	min.	typ.	max.	Units			
MOSFET								
V _{(BR)DSS}	$V_{GS} = 0 \text{ V}, I_{D} = 0.25 \text{ mA}$	55			V			
V _{GS(th)}	$V_{GS} = V_{DS}$; $I_D = 0.25 \text{ mA}$	2,5	3,2	4,5	V			
I _{DSS}	$V_{GS} = 0 \text{ V}; V_{DS} = V_{DSS}; T_j = 25 \text{ °C}$			1	μA			
I _{GSS}	$V_{GS} = \pm 20V ; V_{DS} = 0 V$		2.2	100	nA mO			
R _{DS(on)}	$I_D = 20 \text{ A}; V_{GS} = 10 \text{ V}; T_j = 25 ^{\circ}\text{C}$		2,2	2,9	mΩ			
R _{DS(on)}	$I_D = 20 \text{ A}; V_{GS} = 10 \text{ V}; T_j = 125 \text{ °C}$		3,4	4,5	mΩ			
C _{CHC}	per MOSFET				pF			
C _{iss}	under following conditions:		10,6		nF			
C _{oss}	$V_{GS} = 0 \text{ V}; V_{DS} = 25 \text{ V}; f = 1 \text{ MHz}$		1,65		nF			
C _{rss}			0,8		nF			
L _{DS}					nΗ			
t _{d(on)}	under following conditions:		438		ns			
t _r `´	$V_{DD} = 25 \text{ V}; V_{GS} = 15 \text{ V};$ $I_{D} = 90 \text{ A}$		398		ns			
$t_{d(off)}$	$R_G = 100 \Omega$		1444		ns			
t _f			349		ns			
R _{th(j-s)}	per MOSFET (per module)			1,1	K/W			
Inverse diode								
V_{SD}	$I_F = 50 \text{ A}; V_{GS} = 0 \text{ V}; T_j = 25 \text{ °C}$		0,9		V			
I _{RRM}	under following conditions:				Α			
Q_{rr}	$I_F = A; T_{vj} = ^{\circ}C; R_G = \Omega$				μC			
t _{rr}	$V_R = A$; di/dt = A/ μ s				ns			
Free-whe	eling diode							
V_{F}	$I_F = A; V_{GS} = V$				V			
I _{RRM}	under following conditions:				Α			
Q _{rr}	$I_F = A; T_{vi} = ^{\circ}C$				μC			
t _{rr}	$V_r = A$; di/dt = A/ μ s				ns			
Mechanical data								
M1	mounting torque	2,25		2,5	Nm			
w			30		g			
Case	SEMITOP® 3		T 47					

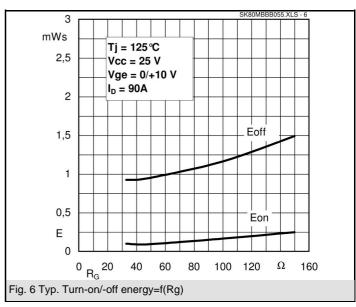


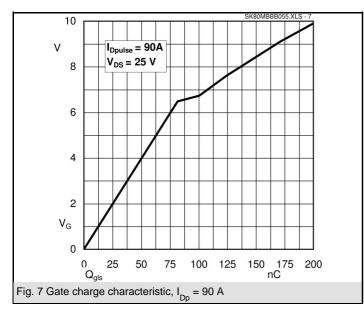
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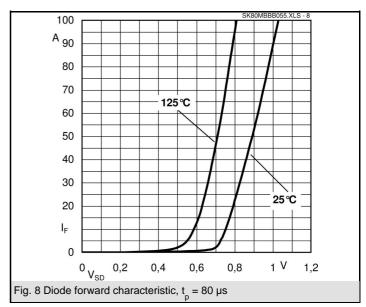




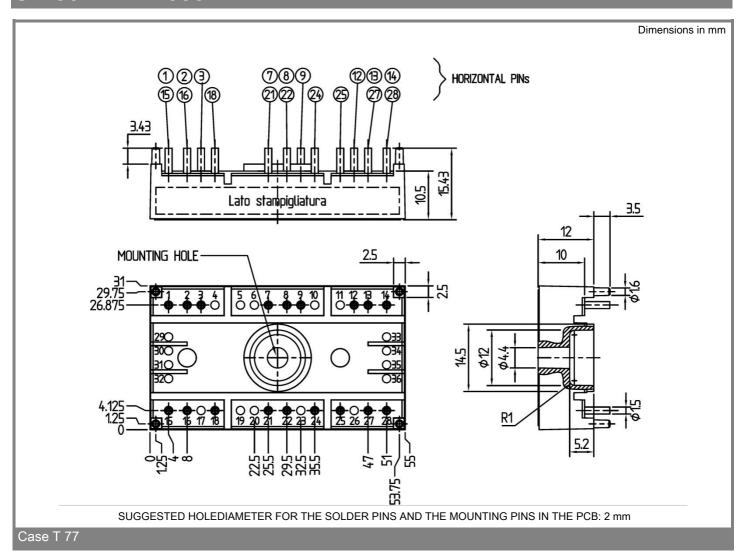


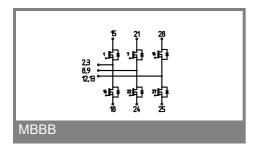






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This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* 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.