



SEMISTOP® 2

MOSFET Module

SK 115 MAA 10

Preliminary Data

Features

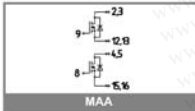
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonding aluminium oxide ceramic (DBC)
- Trench-gate technology
- Short internal connections and low inductance case

Typical Applications

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

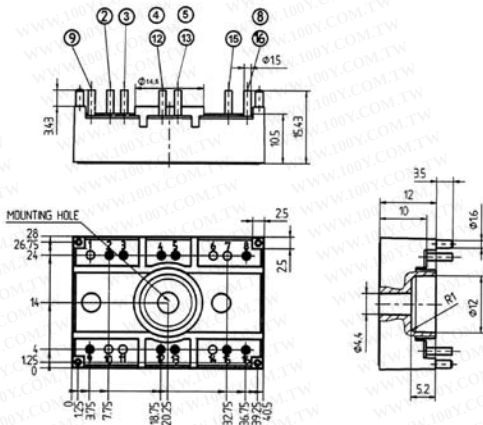
- 1) Maximum PCB temperature, at pins contact, = 85 °C

勝特力材料 886-3-3753170
勝特力電子(上海) 86-21-54151736
勝特力電子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



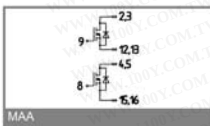
Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT			
V_{DS}		100	V
V_{GS}		± 20	V
I_D	$T_s = 25 (80)^\circ\text{C}; 1)$	95 (75)	A
I_{DM}	$t_p < 1 \text{ ms}; T_s = 25^\circ\text{C};$		A
T_j		-40 ... +150	$^\circ\text{C}$
Inverse diode			
$I_F = -I_D$	$T_s = 25 (80)^\circ\text{C};$	95 (75)	A
$I_{FM} = -I_{DM}$	$t_p < 1 \text{ ms}; T_s = 25 (80)^\circ\text{C};$		A
T_j		-40 ... +150	$^\circ\text{C}$
Freewheeling CAL diode			
$I_F = -I_D$	$T_s = 25^\circ\text{C}$		A
T_j			$^\circ\text{C}$
T_{slg}		-40 ... +125	$^\circ\text{C}$
T_{sd}	Terminals, 10 s	260	$^\circ\text{C}$
V_{RRM}	AC, 1 min (1s)	2500 / 3000	V

Characteristics		$T_s = 25^\circ\text{C}$, unless otherwise specified		
Symbol	Conditions	min.	typ.	max. Units
MOSFET				
$V_{DS(on)}$	$V_{GS} = 0 \text{ V}; I_D = 5.6 \text{ mA}$	100		V
$V_{GS(on)}$	$V_{DS} = V_{GS}; I_D = 5.6 \text{ mA}$	2.5	3.3	V
I_{DSS}	$V_{GS} = 0 \text{ V}; V_{DS} = V_{DSS}; T_j = 25^\circ\text{C}$			100 μA
I_{DSS}	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$			200 nA
$R_{DS(on)}$	$I_D = 80 \text{ A}; V_{GS} = 10 \text{ V}; T_j = 25^\circ\text{C}$			4.5 m Ω
$R_{C(on)}$	$I_D = \text{A}; V_{GS} = \text{V}; T_j = 25^\circ\text{C}$			m Ω
C_{CHC}	per MOSFET			pF
C_{res}	under following conditions:		17.5	nF
C_{oss}	$V_{GS} = 0 \text{ V}; V_{DS} = 25 \text{ V}; f = 1 \text{ MHz}$		2	nF
C_{iss}				nF
L_{DS}				nH
$t_{d(on)}$	under following conditions:		300	ns
t_f	$V_{DS} = 50 \text{ V}; V_{GS} = 10 \text{ V};$ $I_D = 50 \text{ A}$		130	ns
$t_{d(off)}$	$R_G = 56 \Omega$		1550	ns
t_f			150	ns
$R_{\theta(j-a)}$	per MOSFET (per module)			0.7 K/W
Inverse diode				
V_{SD}	$I_F = 50 \text{ A}; V_{GS} = 0 \text{ V}; T_j = 25^\circ\text{C}$		0.9	V
I_{FSM}	under following conditions:		24	A
Q_{rr}	$I_F = 50 \text{ A}; T_j = 25^\circ\text{C}; R_G = 56 \Omega$		0.9	μC
t_{rr}	$V_{GS} = 65 \text{ A}; di/dt = 100 \text{ A}/\mu\text{s}$		70	ns
Free-wheeling diode				
V_F	$I_F = \text{A}; V_{GS} = \text{V}$			V
I_{FSM}	under following conditions:			A
Q_{rr}	$I_F = \text{A}; T_j = 25^\circ\text{C}$			μC
t_{rr}	$V_F = \text{A}; di/dt = \text{A}/\mu\text{s}$			ns
Mechanical data				
M1	mounting torque		2	Nm
w			20	g
Case	SEMISTOP® 2		T 48	



SUGGESTED HOLEDIAMETER FOR THE SOLDER PINS AND THE MOUNTING PINS IN THE PCB: 2 mm

Case T 48



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

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