

SK 150 MHK 055 T



SEMITOP® 3

Mosfet Module

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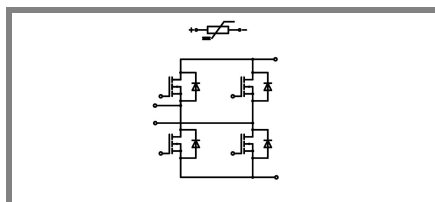
Target Data

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
- Integrated PTC temperature sensor

Typical Applications*

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



MHK

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
MOSFET			
V_{DSS}		55	V
V_{GSS}		± 20	V
I_D	$T_s = 25\text{ (80) °C}$;	240 (150)	A
I_{DM}	$t_p < 1\text{ ms}$; $T_s = 25\text{ (80) °C}$;	340 (250)	A
T_j		-40...+150	°C
Inverse diode			
$I_F = -I_D$	$T_s = 25\text{ (80) °C}$;	240 (150)	A
$I_{FM} = -I_{DM}$	$t_p < 1\text{ ms}$; $T_s = 25\text{ (80) °C}$;	340 (250)	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}	AC, 1 min (1s)	2500 / 3000	V

Characteristics		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
MOSFET					
$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$, $I_D = 0,25\text{ mA}$	55			V
$V_{GS(th)}$	$V_{GS} = V_{DS}$; $I_D = 0,25\text{ mA}$	2,5	3,2	4,5	V
I_{DSS}	$V_{GS} = 0\text{ V}$; $V_{DS} = V_{DSS}$; $T_j = 25\text{ (125) °C}$			1	μA
I_{GSS}	$V_{GS} = \pm 20\text{ V}$; $V_{DS} = 0\text{ V}$			100	nA
$R_{DS(on)}$	$I_D = 5\text{ A}$; $V_{GS} = 10\text{ V}$; $T_j = 25\text{ °C}$		1,1	1,5	m Ω
$R_{DS(on)}$	$I_D = 5\text{ A}$; $V_{GS} = 10\text{ V}$; $T_j = 125\text{ °C}$		1,9	2,6	m Ω
C_{CHC}	per MOSFET				pF
C_{iss}	under following conditions:		21,2		nF
C_{oss}	$V_{GS} = 0\text{ V}$; $V_{DS} = 25\text{ V}$; $f = 1\text{ MHz}$		3,3		nF
C_{rss}			1,6		nF
L_{DS}					nH
$t_{d(on)}$	under following conditions:		40		ns
t_r	$V_{DD} = 30\text{ V}$; $V_{GS} = 10\text{ V}$; $I_D = 70\text{ A}$		180		ns
$t_{d(off)}$	$R_G = 2,5\text{ }\Omega$		70		ns
t_f			110		ns
$R_{th(j-s)}$	per MOSFET (per module)			0,8	K/W
Inverse diode					
V_{SD}	$I_F = 5\text{ A}$; $V_{GS} = 0\text{ V}$; $T_j = 25\text{ °C}$		0,7	1,5	V
I_{RRM}	under following conditions:		8		A
Q_{rr}	$I_F = 150\text{ A}$; $T_{vj} = 25\text{ °C}$; $R_G = 2,5\text{ }\Omega$		0,35		μC
t_{rr}	$V_R = 30\text{ A}$; $di/dt = 100\text{ A}/\mu\text{s}$		80		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 64		

