



SEMITOP® 3

MOSFET Module

Engineering Sample SK300MB080

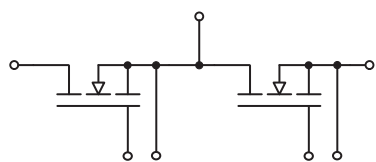
Target Data

Features

- Single leg of inverter
- Compact design
- One screw mounting module
- Improved thermal performance by aluminum oxide substrate
- 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

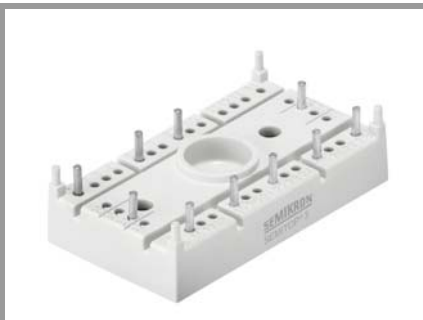


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Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
MOSFET				
V _{DSS}			80	V
I _D	T _J = 175 °C	T _s = 25 °C	309	A
		T _s = 70 °C	259	A
I _{DM}			960	A
I _{DRM}			t.b.d.	A
V _{GS}			-20 ... 20	V
T _j			-40 ... 175	°C
Integrated body diode				
I _{FM}			960	A
I _{FRM}			t.b.d.	A

Absolute Maximum Ratings			
Symbol	Conditions	Values	Unit
Module			
I _{t(RMS)}		t.b.d.	A
T _{stg}		-40 ... 125	°C
V _{isol}	AC, sinusoidal, t = 1 min	2500	V

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
MOSFET						
V _{(BR)DSS}	V _{GS} = 0 V, I _D = 2 mA		80			V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 0.54 mA		2	2.8	3.5	V
I _{DSS}	V _{GS} = 0 V, V _{DS} = 80 V, T _j = 25 °C				0.2	mA
I _{GSS}	V _{DS} = 0 V, V _{GS} = 20 V, T _j = 25 °C				200	nA
R _{DS(on)}	V _{GS} = 10 V	T _j = 25 °C	1.00		1.25	mΩ
	I _D = 200 A	T _j = 150 °C	1.61		2.1	mΩ
C _{iss}	V _{GS} = 0 V, V _{DS} = 40 V, f = 1 MHz		21400			pF
C _{oss}	V _{GS} = 0 V, V _{DS} = 40 V, f = 1 MHz		5780			pF
C _{rss}	V _{GS} = 0 V, V _{DS} = 40 V, f = 1 MHz		200			pF
R _{Gint}	T _j = 25 °C		0.0			Ω
Q _G	V _{GS} = 0...+10 V, V _{DD} = 40 V, I _D = 200 A		310			nC
t _{d(on)}	V _{DD} = 40 V V _{GS} = 10 V I _D = 200 A	T _j = 150 °C				ns
t _{d(off)}		T _j = 150 °C				ns
t _r		T _j = 150 °C				ns
t _f		T _j = 150 °C				ns
E _{on}		T _j = 150 °C	0.35			mJ
E _{off}		T _j = 150 °C	0.16			mJ
R _{th(j-s)}	per MOSFET		0.69			K/W
Integrated body diode						
V _F = V _{SD}	-I _D = 200 A V _{GS} = 0 V chiplevel	T _j = 25 °C	0.91			V
		T _j = 150 °C	0.81			V
V _{F0} = V _{SD0}	chiplevel	T _j = 25 °C	0.77			V
		T _j = 150 °C	0.59			V
r _F = r _{SD}	chiplevel	T _j = 25 °C	0.70			mΩ
		T _j = 150 °C	1.10			mΩ
t _{rr}	V _{DD} = 40 V -I _D = 200 A					ns
Q _{rr}						μC
I _{rr}						A
E _{rr}		V _{GS} = 10 V		0.034		



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Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
Module					
L_{CE}			t.b.d.		nH
M_s	to heatsink	2.25		2.5	Nm
w	weight		29		g

MOSFET Module

Engineering Sample

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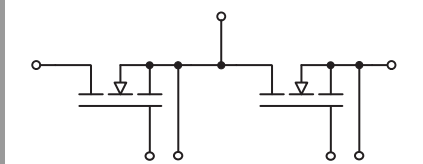
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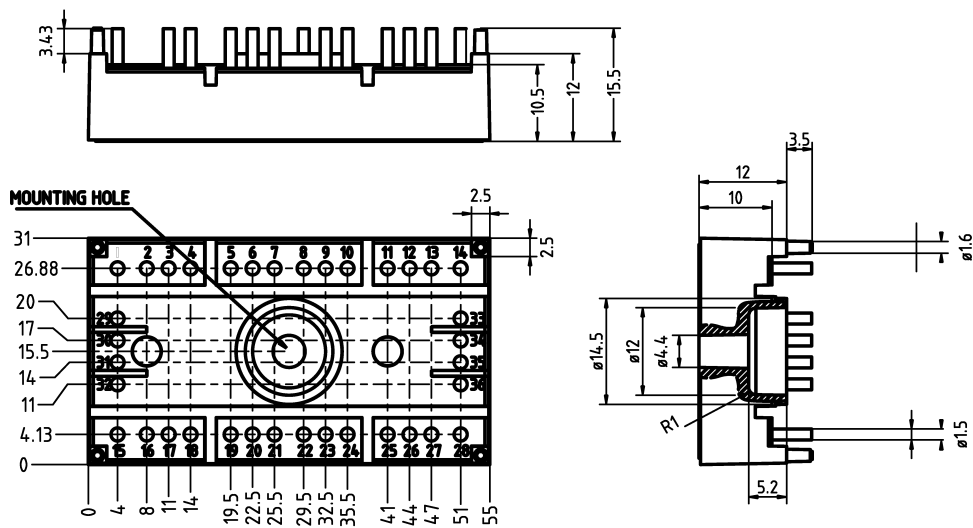
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dimensions in mm

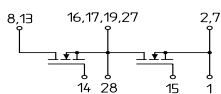
tolerance system: ISO 2768-m



Suggested hole diameter, in the PCB, for solder pins and mounting plastic pins: 2mm

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

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