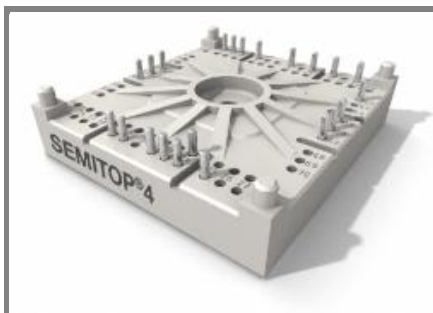


SK200DHL066



SEMITOP[®] 4

Half controlled bridge rectifier + IGBT braking chopper SK200DHL066

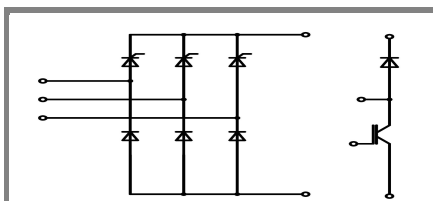
Target Data

Features

- One screw mounting hole
- Fully compatible with SEMITOP[®]1,2,3
- Improved thermal performances by aluminium oxide substrate
- Trench IGBT brake chopper technology
- CAL technology free-wheeling diode chopper

Typical Applications

- $V_{CE,sat}$, V_F = chip level value
- $I_{CM} = 2 \times I_{Cnom}$, $t_p \leq 1ms$
- $I_{FM} = 2 \times I_{Fnom}$, $t_p \leq 1ms$
- $I_C = I_{Cnom}$, $I_F = I_{Fnom}$

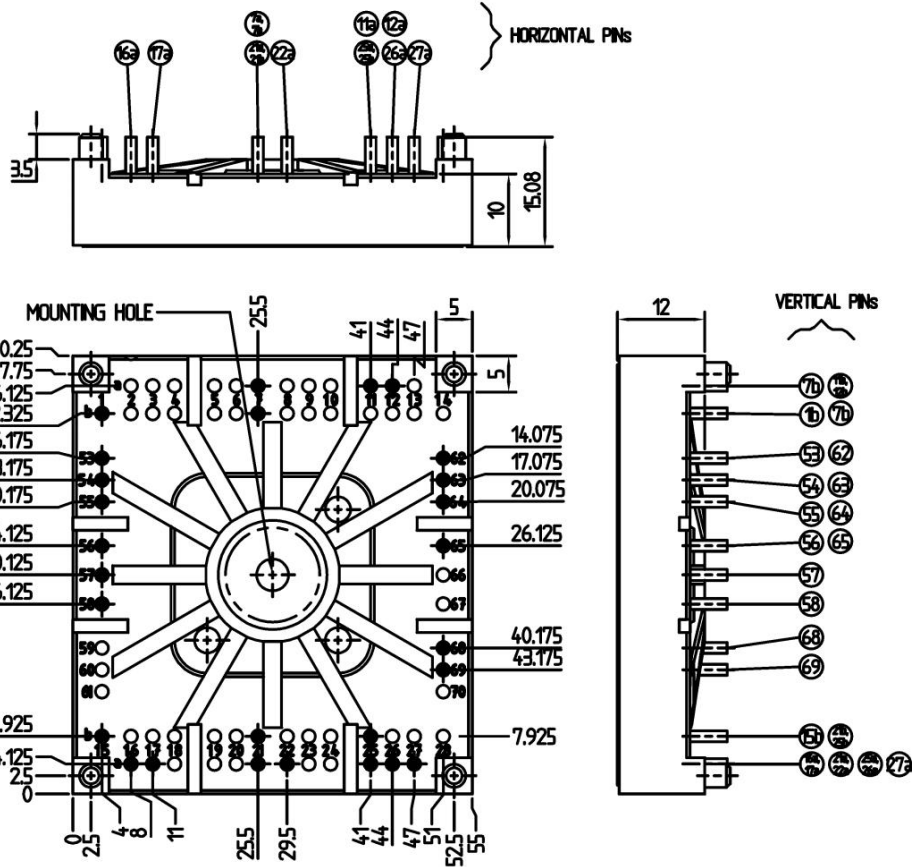


DH-L

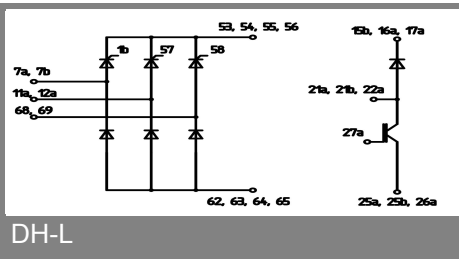
V_{RSM} V	V_{RRM} , V_{DRM} V	$I_D = 210$ A (maximum value for continuous operation) ($T_s = 70$ °C)
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Absolute Maximum Ratings		$T_s = 25$ °C, unless otherwise specified	
Symbol	Conditions	Values	Units
Bridge - Rectifier			
I_D	$T_s = 70$ °C; inductive load	210	A
I_{FSM}/I_{TSM}	$t_p = 10$ ms; half sine wave, ; T_{jmax}	1250	A
i^2t	$t_p = 10$ ms; half sine wave, ; T_{jmax}	7810	A ² s
IGBT - Chopper			
V_{CES}/V_{GES}	$T_s = 25$ (70) °C	600 / 20	V
I_C	$T_s = 25$ (70) °C	174 (131)	A
I_{CM}	$t_p = 1$ ms; $T_s =$ °C	400	A
Freewheeling - CAL Diode			
V_{RRM}	$T_s = 25$ (70) °C	600	V
I_F	$T_s = 25$ (70) °C	100 (80)	A
I_{FM}	$t_p = 1$ ms; $T_s =$ °C	200	A
T_{vj}	Diode & IGBT (Thyristor)	-40 ... +150 (-40 ... +130)	°C
T_{stg}		-40 ... +125 (-40 ... +130)	°C
T_{solder}	terminals, 10 s	260	°C
V_{isol}	a.c. 50 Hz, RMS 1 min. / 1 s	2500 / 3000	V

Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Diode - Rectifier					
V_{TO} / r_t	$T_j = 125$ °C		0,8 / 4		V / mΩ
$R_{th(j-s)}$	per diode		0,52		K/W
Thyristor - Rectifier					
$V_{F(TO)} / r_t$	$T_j = 130$ °C		1,1 / 4,5		V / mΩ
$R_{th(j-s)}$	per Thyristor		0,44		K/W
I_{GD}	$T_j = 115$ °C; d.c.	6			mA
V_{GT} / I_{GT}	$T_j = 25$ °C			1,98 / 100	V / mA
I_H / I_L	$T_j = 25$ °C			220 / 550	mA
$(dv/dt)_{cr}$	$T_j = 130$ °C			1000	V/μs
$(di/dt)_{cr}$	$T_j = 130$ °C			100	A/μs
IGBT - Chopper					
$V_{CE(sat)}$	$I_C = 200$ A, $T_j = 125$ °C; $V_{GE} = 15$ V		1,7	2,15	V
$R_{th(j-s)}$	per IGBT		0,45		K/W
$t_{d(on)} / t_r$	valid for all values:				ns
$t_{d(off)} / t_f$	$V_{CC} = 300$ V; $V_{GE} = 15$ V; $I_C = 200$ A; $T_j = 125$ °C;				ns
$E_{on} + E_{off}$	$T_j = 125$ °C; $R_G = 4$ Ω; inductive load		13,8		mJ
CAL - Diode - Freewheeling					
$V_{T(TO)} / r_t$	$T_j = 150$ °C		0,85 / 3,5		V / mΩ
$R_{th(j-s)}$	per diode		0,8		K/W
I_{RRM}	valid for all values:				A
Q_{rr}	$I_F = 200$ A; $V_R = -600$ V; $di_F/dt = -A/\mu s$				μC
E_{off}	$V_{GE} = V$; $T_j = 125$ °C				mJ
Temperature Sensor					
R_{TS}	$T =$ °C;				Ω
Mechanical data					
M_S	mounting Torque			3,5	Nm



Case T 85 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



DH-L

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

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