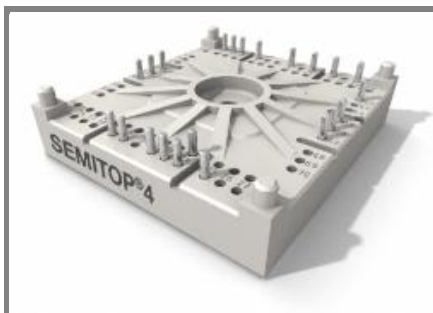


# SK200DHL066



**SEMITOP<sup>®</sup> 4**

## Half controlled bridge rectifier + IGBT braking chopper SK200DHL066

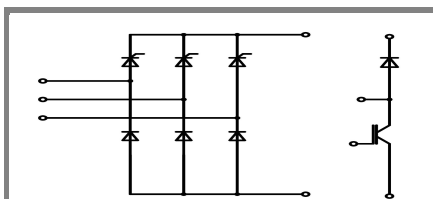
Target Data

### Features

- One screw mounting hole
- Fully compatible with SEMITOP<sup>®</sup>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
- $I_{CM} = 2 \times I_{Cnom}$ ,  $t_p \leq 1ms$
- $I_{FM} = 2 \times I_{Fnom}$ ,  $t_p \leq 1ms$
- $I_C = I_{Cnom}$ ,  $I_F = I_{Fnom}$

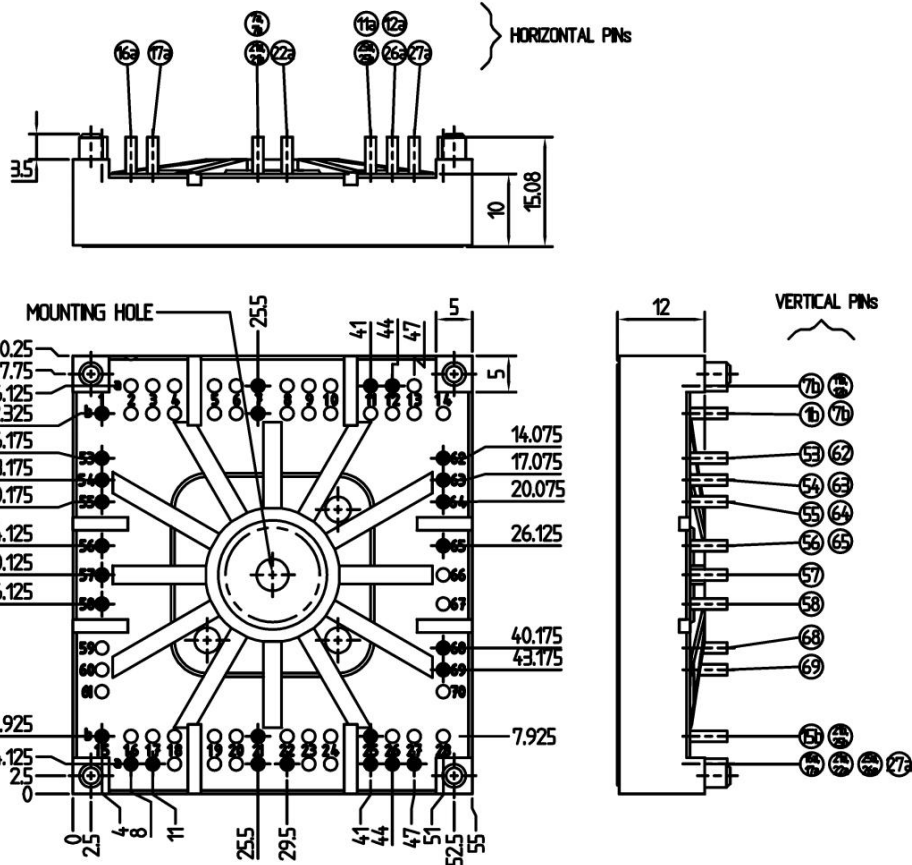


DH-L

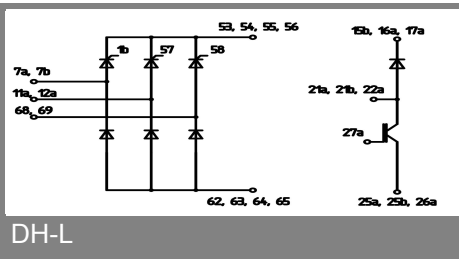
$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_D = 210$ A (maximum value for continuous operation) ( $T_s = 70^\circ\text{C}$ )
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Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
<b>Bridge - Rectifier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

Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
<b>Diode - Rectifier</b>					
$V_{TO} / r_t$	$T_j = 125^\circ\text{C}$		0,8 / 4		V / mΩ
$R_{th(j-s)}$	per diode		0,52		K/W
<b>Thyristor - Rectifier</b>					
$V_{F(TO)} / r_t$	$T_j = 130^\circ\text{C}$		1,1 / 4,5		V / mΩ
$R_{th(j-s)}$	per Thyristor		0,44		K/W
$I_{GD}$	$T_j = 115^\circ\text{C}$ ; d.c.	6			mA
$V_{GT} / I_{GT}$	$T_j = 25^\circ\text{C}$			1,98 / 100	V / mA
$I_H / I_L$	$T_j = 25^\circ\text{C}$			220 / 550	mA
$(dv/dt)_{cr}$	$T_j = 130^\circ\text{C}$			1000	V/μs
$(di/dt)_{cr}$	$T_j = 130^\circ\text{C}$			100	A/μs
<b>IGBT - Chopper</b>					
$V_{CE(sat)}$	$I_C = 200$ A, $T_j = 125^\circ\text{C}$ ; $V_{GE} = 15$ 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: $V_{CC} = 300$ V; $V_{GE} = 15$ V; $I_C = 200$ A; $T_j = 125^\circ\text{C}$ ;				ns
$t_{d(off)} / t_f$					ns
$E_{on} + E_{off}$	$T_j = 125^\circ\text{C}$ ; $R_G = 4 \Omega$ ; inductive load		13,8		mJ
<b>CAL - Diode - Freewheeling</b>					
$V_{T(TO)} / r_t$	$T_j = 150^\circ\text{C}$		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
$E_{off}$	$V_{GE} = V$ ; $T_j = 125^\circ\text{C}$				mJ
<b>Temperature Sensor</b>					
$R_{TS}$	$T = ^\circ\text{C}$ ;				Ω
<b>Mechanical data</b>					
$M_S$	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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