

SK170DHL126



SEMITOP[®] 4

Half controlled bridge rectifier + IGBT braking chopper SK170DHL126

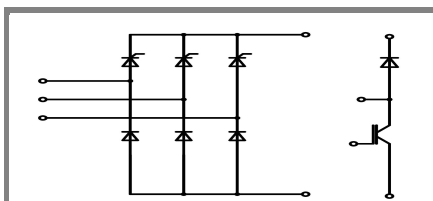
Target Data

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
- $I_{CM} = 2xI_{C,nom}$, $t_p \leq 1ms$
- $I_{FM} = 2xI_{F,nom}$, $t_p \leq 1ms$
- $I_C = I_{C,nom}$, $I_F = I_{F,nom}$



DH-L

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_D = 170$ A (maximum value for continuous operation) ($T_s = 70$ °C)
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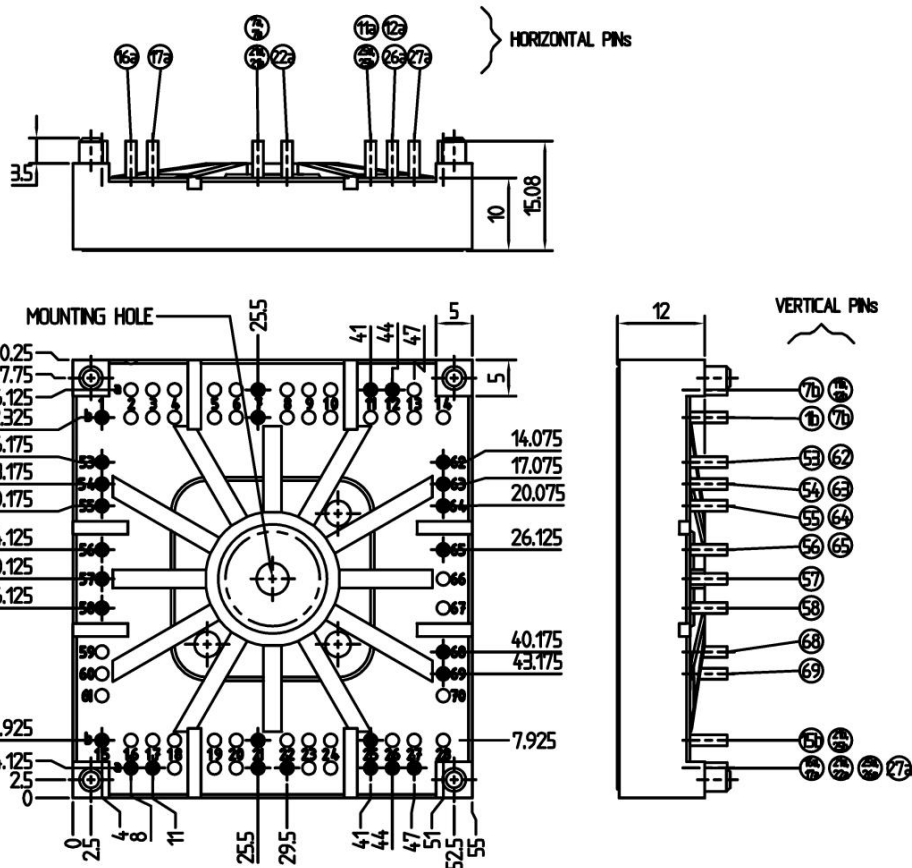
Absolute Maximum Ratings		$T_s = 25$ °C, unless otherwise specified	
Symbol	Conditions	Values	Units
Bridge - Rectifier			
I_D	$T_s = 70$ °C; inductive load	170	A
I_{FSM}/I_{TSM}	$t_p = 10$ ms; half sine wave, ; T_{jmax}	1000	A
i^2t	$t_p = 10$ ms; half sine wave, ; T_{jmax}	5000	A ² s
IGBT - Chopper			
V_{CES}/V_{GES}	$T_s = 25$ (70) °C	1200 / 20	V
I_C	$T_s = 25$ (70) °C	90 (70)	A
I_{CM}	$t_p = 1$ ms; $T_s =$ °C	70	A
Freewheeling - CAL Diode			
V_{RRM}	$T_s = 25$ (70) °C	1200	V
I_F	$T_s = 25$ (70) °C	95 (70)	A
I_{FM}	$t_p = 1$ ms; $T_s =$ °C	170	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 / 7		V / mΩ
$R_{th(j-s)}$	per diode		0,7		K/W
Thyristor - Rectifier					
$V_{F(TO)} / r_t$	$T_j = 130$ °C		1,1 / 5,7		V / mΩ
$R_{th(j-s)}$	per Thyristor		0,51		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 / 440	mA
$(dv/dt)_{cr}$	$T_j = 130$ °C			1000	V/μs
$(di/dt)_{cr}$	$T_j = 130$ °C			50	A/μs
IGBT - Chopper					
$V_{CE(sat)}$	$I_C = 70$ A, $T_j = 125$ °C; $V_{GE} = 15$ V		1,7	2,05	V
$R_{th(j-s)}$	per IGBT		0,5		K/W
$t_{d(on)} / t_r$	valid for all values: $V_{CC} = 600$ V; $V_{GE} = 15$ V;				ns
$t_{d(off)} / t_f$	$I_C = 75$ A; $T_j = 125$ °C;				ns
$E_{on} + E_{off}$	$T_j = 125$ °C; $R_G = 9$ Ω; inductive load		16,7		mJ
CAL - Diode - Freewheeling					
$V_{T(TO)} / r_t$	$T_j = 150$ °C		0,95 / 10		V / mΩ
$R_{th(j-s)}$	per diode		0,7		K/W
I_{RRM}	valid for all values:				A
Q_{rr}	$I_F = 75$ 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

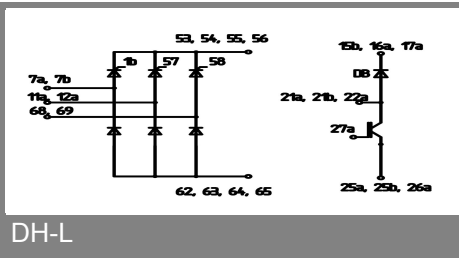
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UL recognized
File n° E 63 532

Dimensions in mm



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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