SEMIKRON

V_{RSM} V	V_{RRM} V_{DRM} V	I_{RMS} (maximum values for continuous operation) (T_h = 80 °C) 140 A
1300	1200	**SKDH 146/12-L100**
1700	1600	**SKDH 146/16-L100**

Absolute Maximum Ratings

Symbol	Conditions [1]	Values	Units
Bridge Rectifier			
I_D	$T_{heatsink}$ = 85 °C; inductive load	140	A
I_{FSM}/I_{TSM}	t_p = 10 ms; sin. 180 °C, T_{jmax}	1250	A
I^2t	t_p = 10 ms, sin. 180°, T_{jmax}	7800	A^2s
IGBT Chopper			
V_{CES}		1200	V
V_{GES}		± 20	V
I_C	$T_{heatsink}$ = 25 / 70 °C	125 / 100	A
I_{CM}	t_p = 1 ms; $T_{heatsink}$ = 25 / 70 °C	250 / 200	A
Freewheeling Diode [2]			
V_{RRM}		1200	V
I_F	$T_{heatsink}$ = 25 / 70 °C	130 / 90	A
I_{FM}	t_p = 1 ms; $T_{heatsink}$ = 25 / 70 °C	240 / 180	A
T_j	Diode & IGBT	– 40 ... + 150	°C
T_j	Thyristor	– 40 ... + 125	°C
T_{stg}		– 40 ... + 125	°C
V_{isol}	AC, 1 min.	2500	V

Characteristics

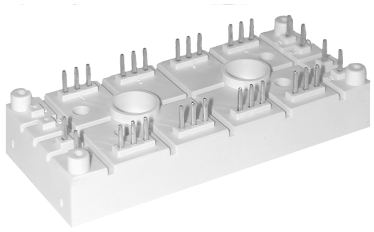
Symbol	Conditions [1]	min.	typ.	max.	Units
Diode - Rectifier					
V_F	I_F = 150 A T_j = 125 °C	–	1,3	–	V
V_{TO}	T_j = 125 °C	–	0,8	–	V
r_T	T_j = 125 °C	–	4	–	mΩ
R_{thjh}	per diode	–	–	0,6	K/W
Thyristor - Rectifier					
V_T	I_T = 150 A T_j = 25 °C	–	1,55	–	V
$V_{T(TO)}$	T_j = 125 °C	–	–	0,9	V
r_T	T_j = 125 °C	–	–	4,5	mΩ
R_{thjh}	per thyristor	–	–	0,6	°C/W
I_{GD}	T_j = 125 °C; dc	6	–	–	mA
V_{GT}	T_j = 25 °C	–	–	3	V
I_{GT}	T_j = 25 °C	–	–	150	mA
I_H	T_j = 25 °C	–	250	–	mA
I_L	T_j = 25 °C	–	600	–	mA
dv/dt_{CR}	T_j = 125 °C	500	–	–	V/µs
di/dt_{CR}	T_j = 125 °C	–	–	125	A/µs
IGBT - Chopper					
V_{CEsat}	I_C = 100 A T_j = 25 °C, V_{GE} = 15 V	–	2,35	2,85	V
$t_{d(on)}$	V_{CC} = 600 V; V_{GE} = ± 15 V	–	70	–	ns
t_r	I_C = 100 A; T_j = 125 °C	–	50	–	ns
$t_{d(off)}$	R_{gon} = R_{goff} = 7 Ω	–	450	–	ns
t_f	inductive load	–	45	–	ns
E_{on} + E_{off}		–	25	–	mJ
C_{ies}	V_{CE} = 25 V; V_{GE} = 0 V, f = 1 MHz	–	7,7	–	nF
R_{thjh}	per IGBT	–	–	0,28	K/W

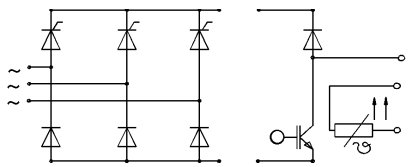
SEMIPONT™ 6

SKDH 146/.. - L100

half controlled 3-phase bridge rectifier + IGBT braking chopper

Preliminary Data





- Specifications of temperature sensor see part A

Features

- Compact design
- Two screws mounting
- Heat transfer and isolation through direct copper board (low R_{th})
- Low resistance in steady- state and high reliability
- High surge currents
- Up to 1600 V reverse voltage
- UL recognized, file no. E 63 532

Typical Applications

- DC drives
- Controlled field rectifiers for DC motors
- Controlled battery charger

[1] $T_{heatsink}$ = 25 °C, unless otherwise specified

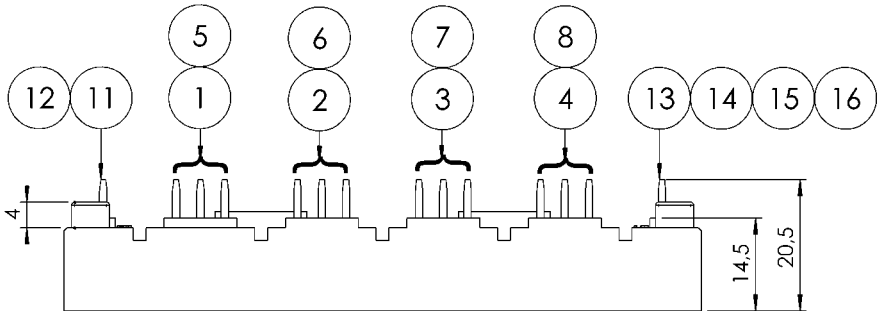
[2] CAL = Controlled Axial Lifetime Technology (soft and fast recovery)

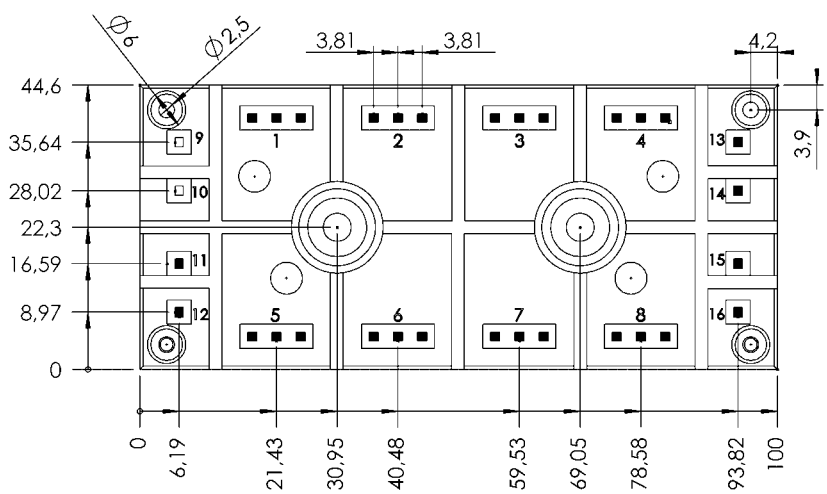
Characteristics					
Symbol	**Conditions** [1]	**min.**	**typ.**	**max.**	**Units**
Diode [2] - Freewheeling					
V_F	I_F = 100 A T_j = 25 °C	–	2,0	2,5	V
V_{TO}	T_j = 125 °C	–	1,1	1,2	V
r_T	T_j = 125 °C	–		11	mΩ
I_{RRM}	I_F = 100 A; V_R = – 600 V	–	65	–	A
Q_{rr}	di_F/dt = – 1000 A/µs	–	15	–	µC
E_{off}	V_{GE} = 0 V, T_j = 125 °C	–	TBD	–	mJ
R_{thjh}	per diode	–	–	0,56	K/W
Temperature Sensor					
R_{TS}	T = 25 / 100 °C		1000 / 1670		Ω
Mechanical Data					
M_1	case to heatsink, SI Units	2,5	–	3,5	Nm
Case			G 59		

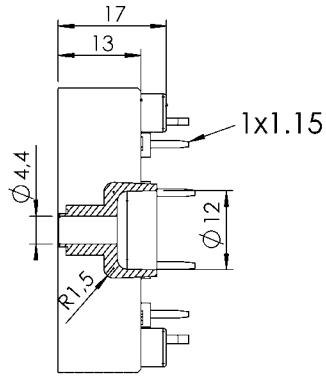
SEMIPONT™ 6

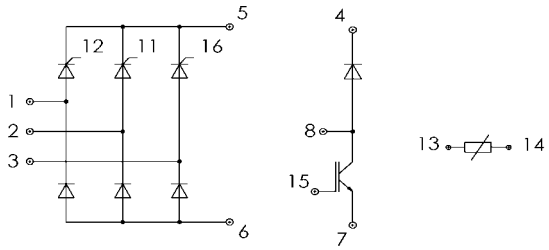
SKDH 146/.. - L100

Case G 59









Dimensions in mm