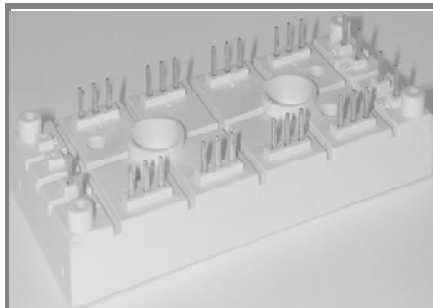




SEMIPONT™ 6

3-Phase Bridge Rectifier + IGBT braking chopper

SKD 146/16-L140

Target Data

Features

- Compact design
- Two screws mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- High surge currents
- 1600V reverse voltage
- UL recognized, file no. E 63 532
- Integrated PTC temperature sensor
- Remarks: $V_{CE,sat}$ = chip level value

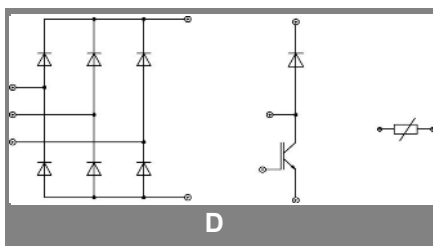
Typical Applications

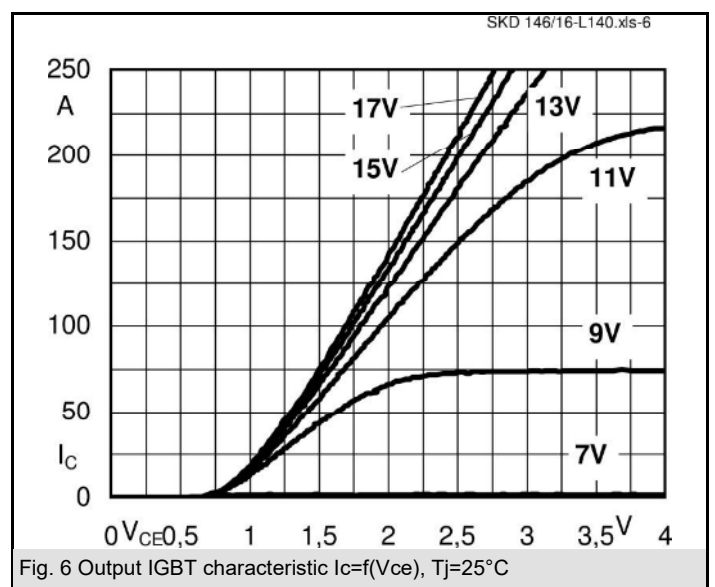
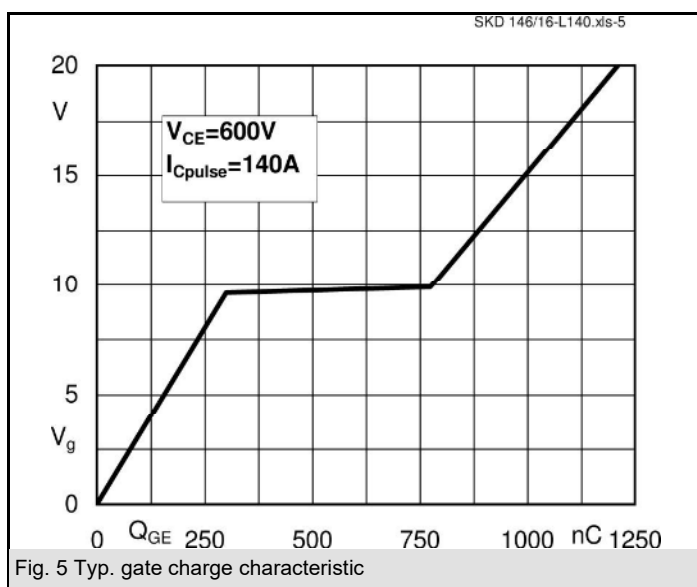
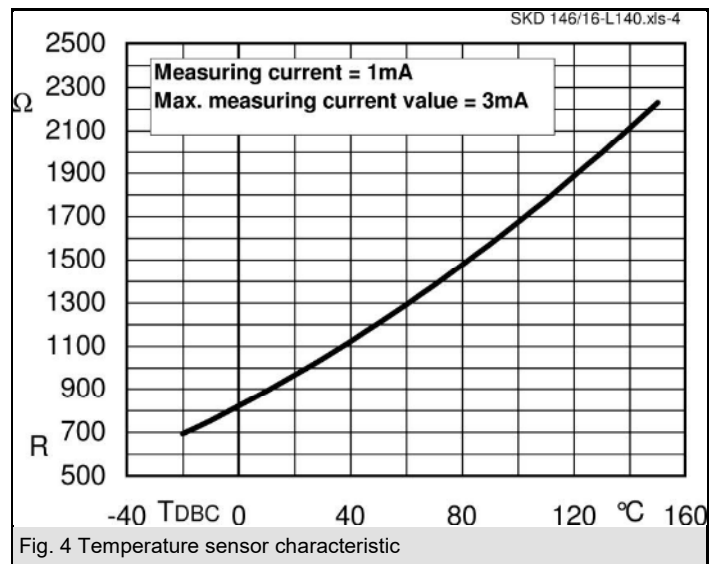
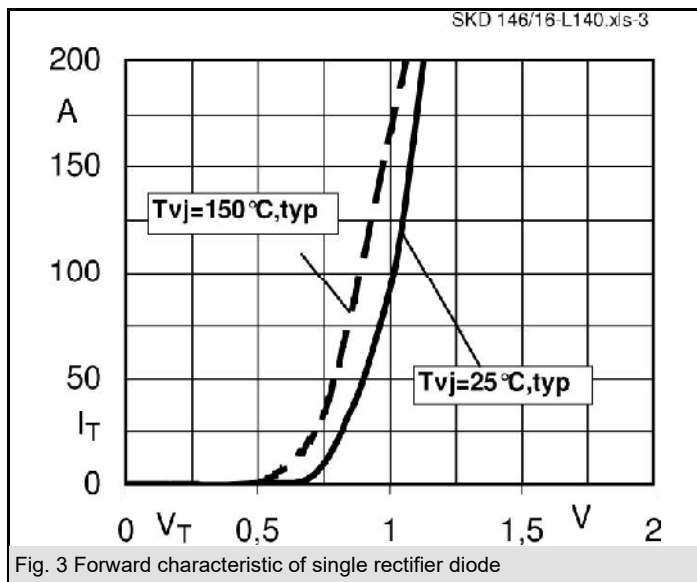
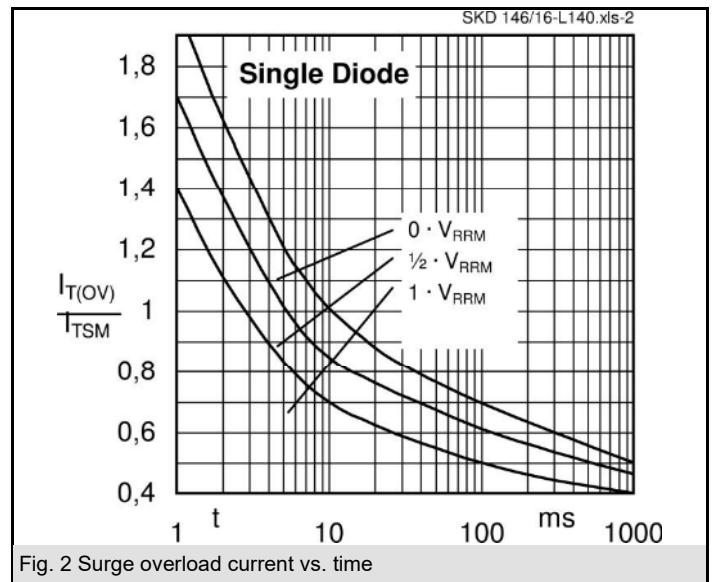
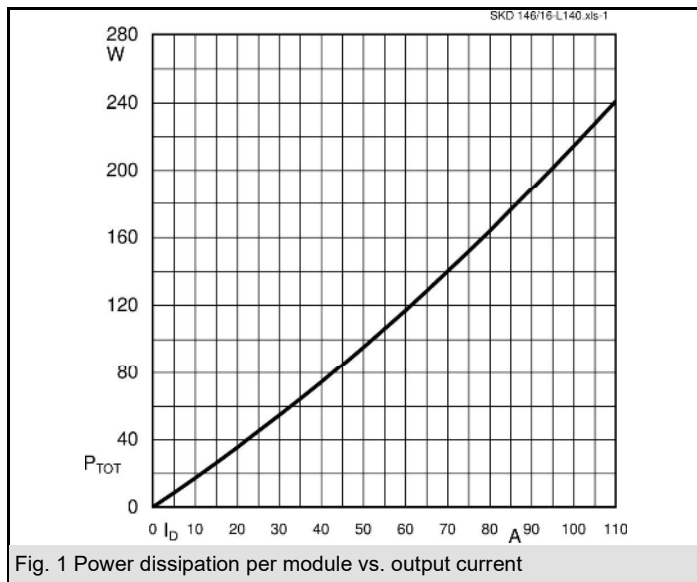
- DC drives
- Controlled filed rectifiers for DC motors
- Controlled battery charger

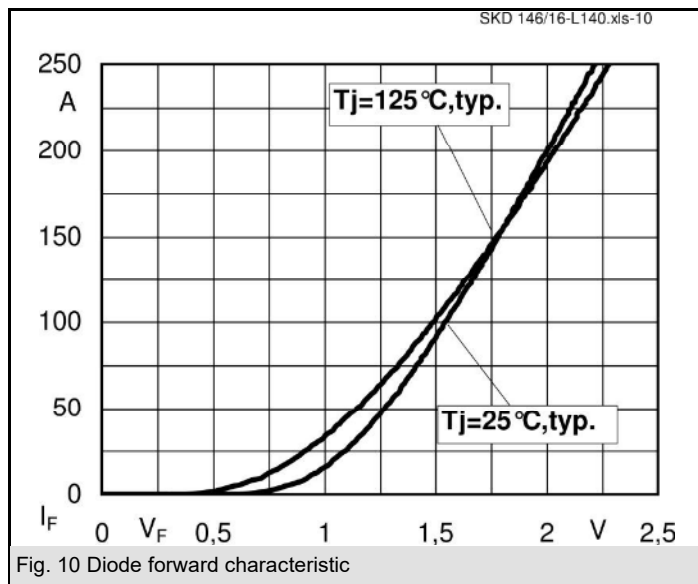
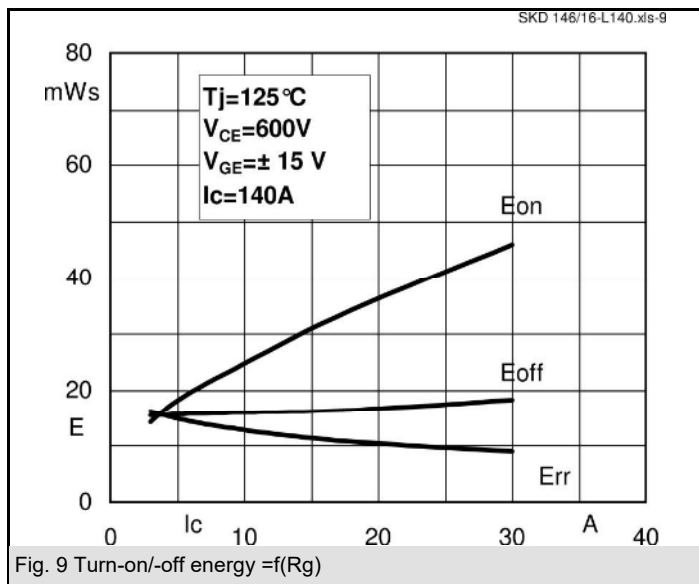
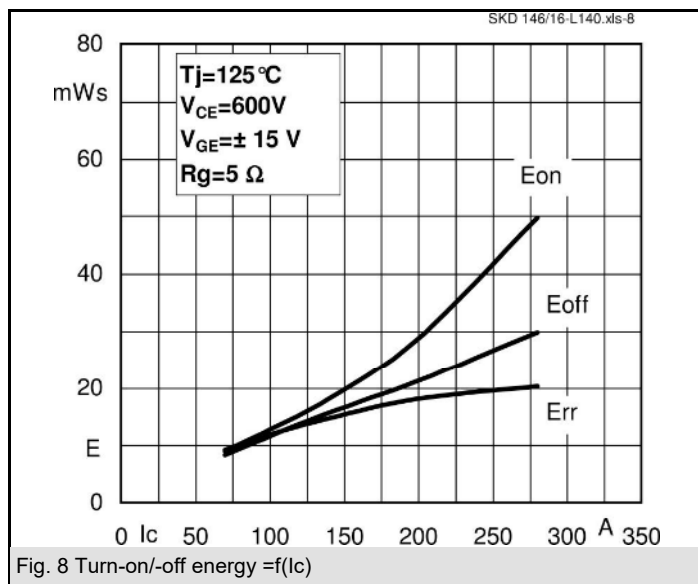
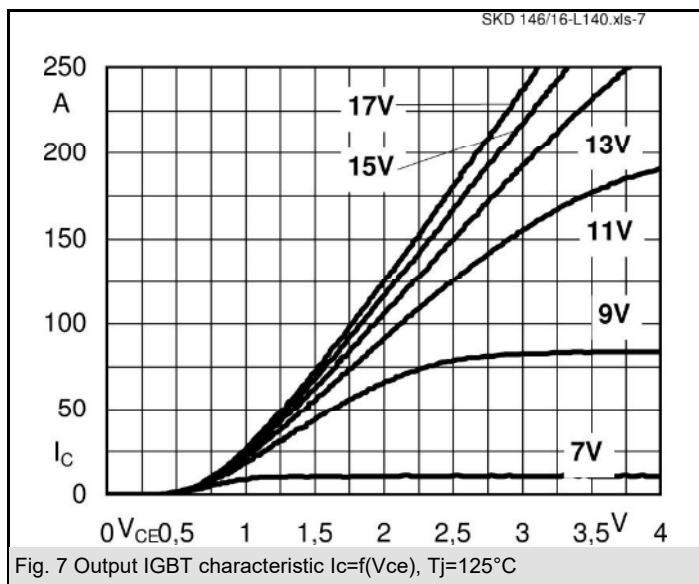
V_{RSM} V	V_{RRM}, V_{DRM} V	$I_D = 140$ A (maximum value for continuous operation) ($T_s = 85$ °C)
1700	1600	SKD146/16-L140

Absolute Maximum Ratings		$T_s = 25$ °C, unless otherwise specified	
Symbol	Conditions	Values	Units
Bridge - Rectifier			
I_D	$T_s = 85$ °C; inductive load	140	A
I_{FSM}/I_{TSM}	$t_p = 10$ ms; $\sin 180^\circ$; T_{jmax}	1250	A
i^2t	$t_p = 10$ ms; $\sin 180^\circ$; T_{jmax}	7800	A ² s
IGBT - Chopper			
V_{CES}/V_{GES}		1200 / 20	V
I_C	$T_s = 25$ (70) °C	165 (110)	A
I_{CM}	$t_p = 1$ ms; $T_s = 25$ (70) °C	330 (220)	A
Freewheeling - CAL Diode			
V_{RRM}		1200	V
I_F	$T_s = 25$ (70) °C	130 (90)	A
I_{FM}	$t_p = 1$ ms; $T_s = 25$ (70) °C	240 (180)	A
T_{vj}	Diode & IGBT (Thyristor)	- 40 ... + 150 (0 ... + 125)	°C
T_{stg}		- 40 ... + 125	°C
T_{solder}	terminals, 10 s	260	°C
V_{isol}	a.c. (50) Hz, RMS 1 min. / 1 s	3000 / 3600	V

Characteristics		T _s = 25 °C, unless otherwise specified			
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			0,8	K/W
IGBT - Chopper					
V _{CE(sat)}	I _C = 140 A, T _j = 25 °C; V _{GE} = 15 V		1,65	2,05	V
R _{th(j-s)}	per IGBT			0,35	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 = 140 A; T _j = 125 °C;				ns
E _{on} +E _{off}	T _j = 125 °C; R _G = 5 Ω; inductive load		37		mJ
CAL - Diode - Freewheeling					
V _{T(TO)} / r _t	T _j = 125 °C		0,8 / 5	0,9 / 5,7	V / mΩ
R _{th(j-s)}	per diode			0,6	K/W
I _{RRM}	valid for all values:				A
Q _{rr}	I _F = 140 A; V _R = - 600 V; dI _F /dt = - 4300 A/μs				μC
E _{off}	V _{GE} = 0 V; T _j = 125 °C		16,2		mJ
Temperature Sensor					
R _{TS}	T = 25 (100) °C;		1000 (1670)		Ω
Mechanical data					
M _S	mounting Torque	2,55		3,45	Nm



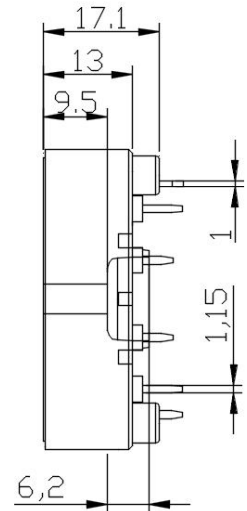
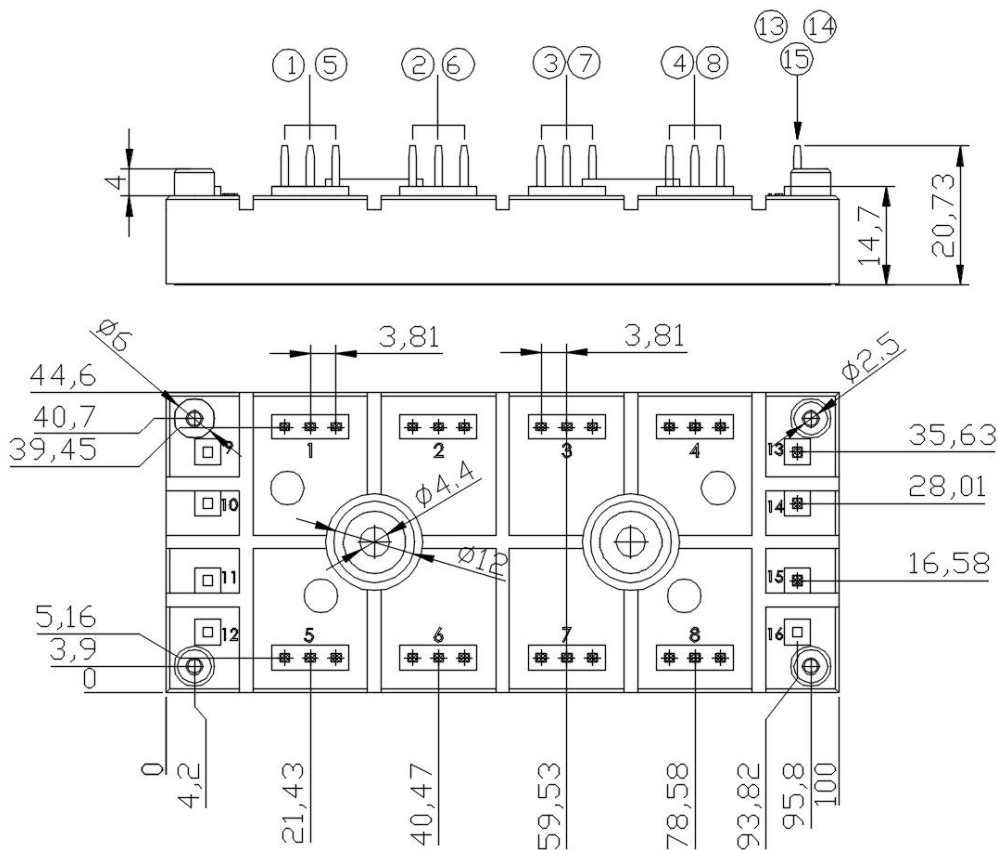




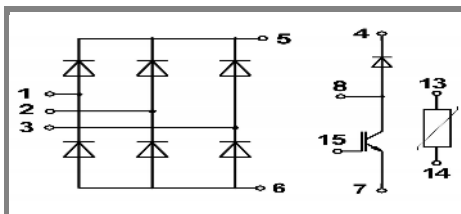
SKD 146/16-L140

UL Recognized
File no. E 63 532

Dimensions in mm



Case G 60



Case G 60

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

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