SEMIPONT® 2

Controllable Bridge Rectifiers

SKCH 40

Features

- Fully controlled single phase bridge rectifier
- Robust plastic case with screw terminals
- Large, isolated base plate
- Blocking voltage to 1600V
- High surge currents
- Easy chassis mounting
- UL recognized, file no. E 63 532

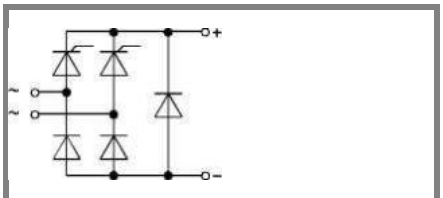
Typical Applications*

- For DC drives with a fixed direction of rotation
- Controlled field rectifiers for DC motors
- Controlled battery charger rectifiers

1) Painted metal shield of minimum 250 x 250 x 1 mm: $R_{th(c-a)}$ = 1,8 K/W

V_{RSM} V	V_{RRM}, V_{DRM} V	I_D = 40 A (full conduction) (T_c = 92 °C)
400	400	SKCH 40/04
800	800	SKCH 40/08
1200	1200	SKCH 40/12
1400	1400	SKCH 40/14
1600	1600	SKCH 40/16

Symbol	Conditions	Values	Units
I_D	T_c = 85 °C	46	A
	T_a= 45 °C; chassis 1)	15	A
	T_a= 45 °C; R4A/120	18	A
	T_a= 45 °C; P13A/125	18	A
	T_a= 45 °C; P1A/120	28	A
I_{TSM}, I_{FSM}	T_{vj} = 25 °C; 10 ms	470	A
	T_{vj} = 125 °C; 10 ms	400	A
i^2t	T_{vj} = 25 °C; 8,3 ... 10 ms	1100	A^2s
	T_{vj} = 125 °C; 8,3 ... 10 ms	800	A^2s
V_T	T_{vj} = 25 °C; I_T=75 A	max. 2,3	V
$V_{T(TO)}$	T_{vj} = 125 °C;	max. 1	V
r_T	T_{vj} = 125 °C	max. 16	mΩ
I_{DD}; I_{RD}	T_{vj} = 125 °C; V_{DD} = V_{DRM}; V_{RD} = V_{RRM}	max. 10	mA
t_{gd}	T_{vj} = 25 °C; I_G = 1 A; di_G/dt = 1 A/µs	1	µs
t_{gr}	V_D = 0,67 · V_{DRM}	1	µs
$(dv/dt)_{cr}$	T_{vj} = 125 °C	max. 500	V/µs
$(di/dt)_{cr}$	T_{vj} = 125 °C; f = 50 Hz	max. 50	A/µs
t_q	T_{vj} = 125 °C; typ.	80	µs
I_H	T_{vj} = 25 °C; typ. / max.	100 / 200	mA
I_L	T_{vj} = 25 °C; R_G = 33 Ω	250 / 400	mA
V_{GT}	T_{vj} = 25 °C; d.c.	min. 3	V
I_{GT}	T_{vj} = 25 °C; d.c.	min. 150	mA
V_{GD}	T_{vj} = 125 °C; d.c.	max. 0,25	V
I_{GD}	T_{vj} = 125 °C; d.c.	max. 5	mA
$R_{th(j-c)}$	per thyristor / diode	1	K/W
	total	0,25	K/W
$R_{th(c-s)}$	total	0,05	K/W
T_{vj}		- 40 ... + 125	°C
T_{stg}		- 40 ... + 125	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 (3000)	V
M_s	to heatsink	5	Nm
M_t	to terminals	3	Nm
m		165	g
Case	SKCH	G 19	



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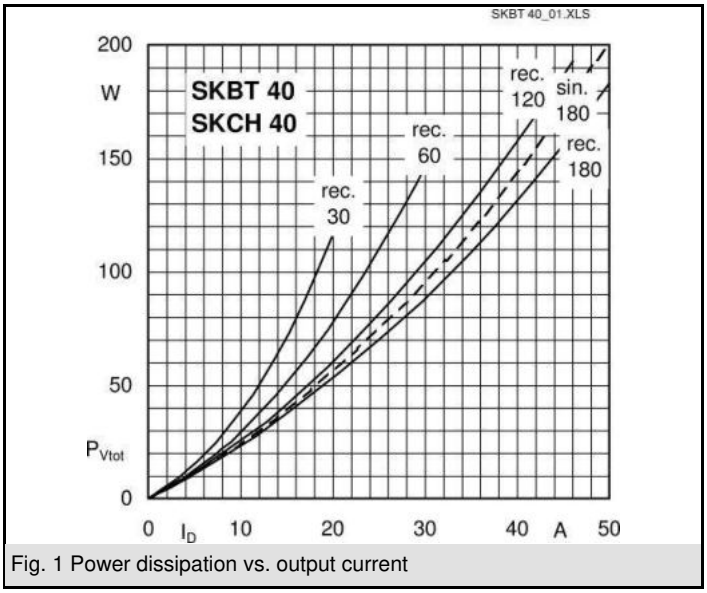


Fig. 1 Power dissipation vs. output current

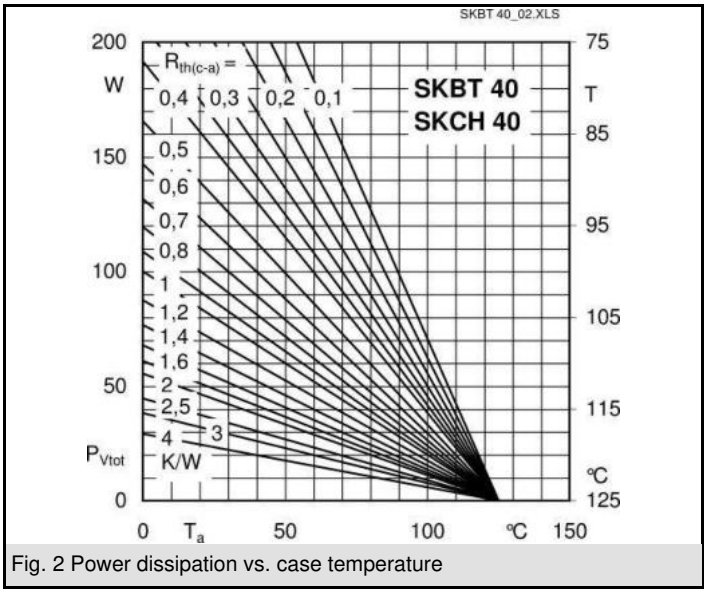


Fig. 2 Power dissipation vs. case temperature

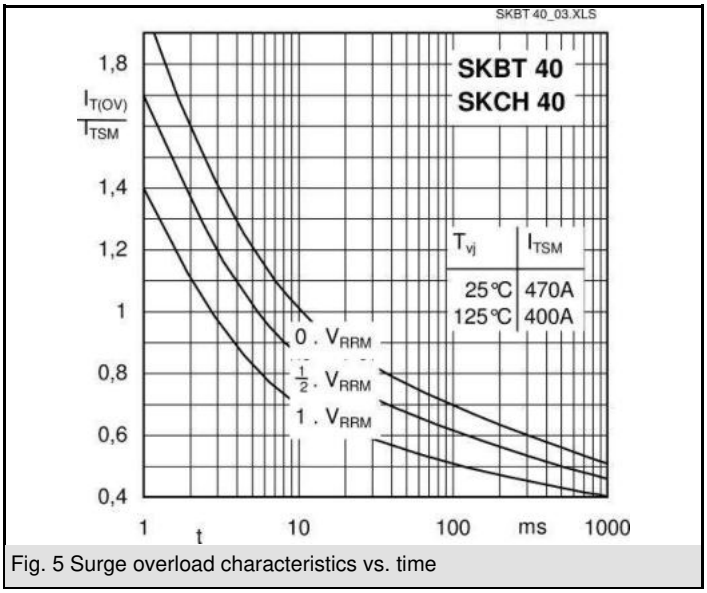


Fig. 5 Surge overload characteristics vs. time

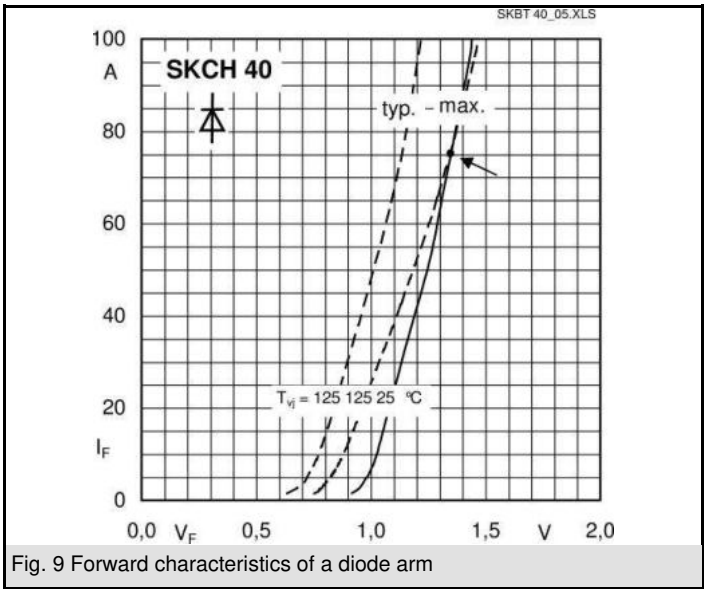


Fig. 9 Forward characteristics of a diode arm

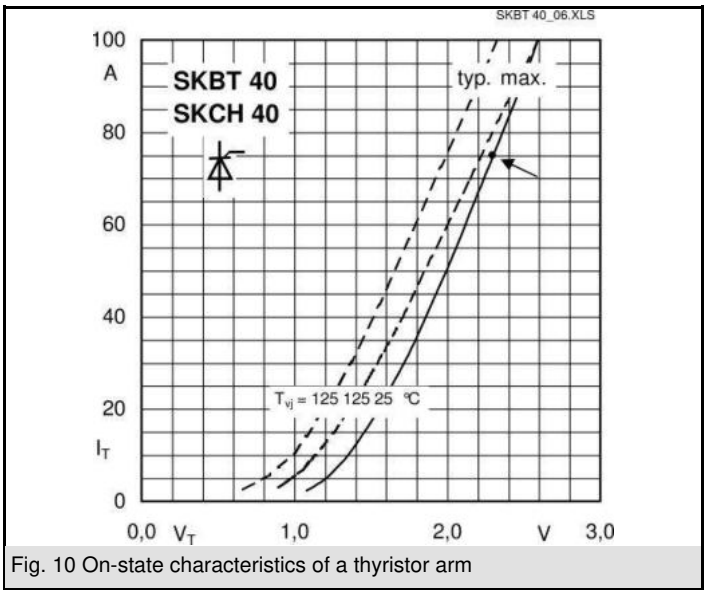


Fig. 10 On-state characteristics of a thyristor arm

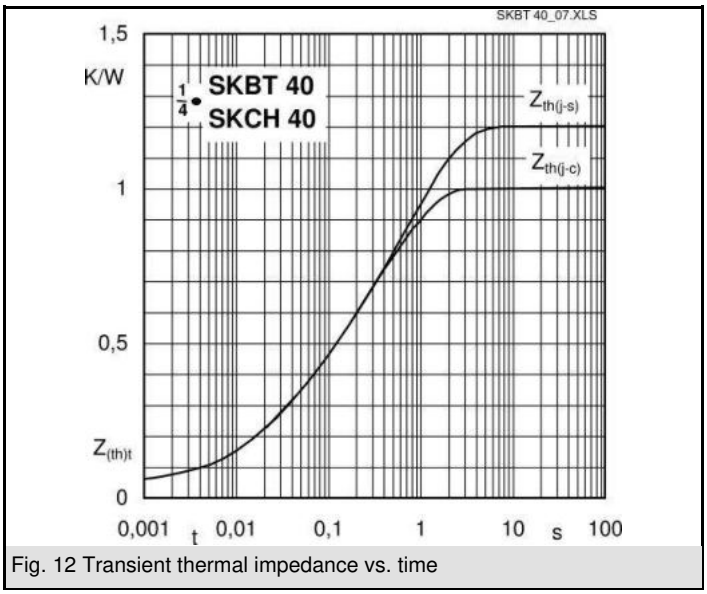


Fig. 12 Transient thermal impedance vs. time

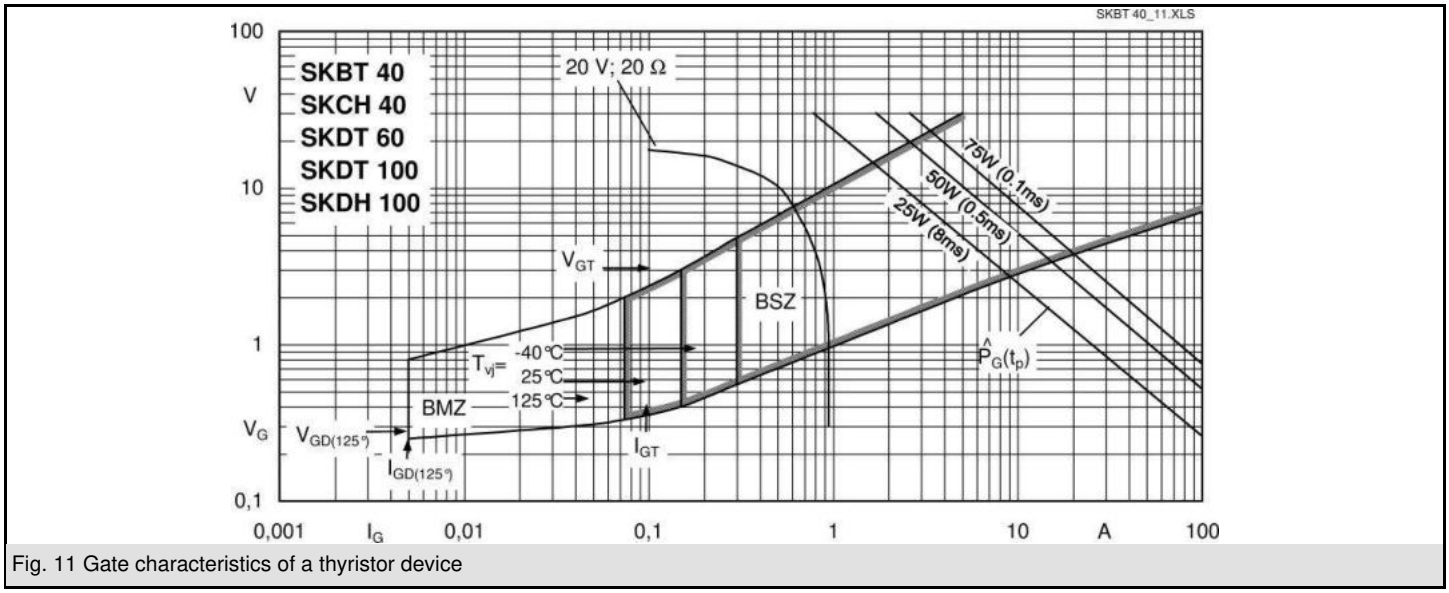
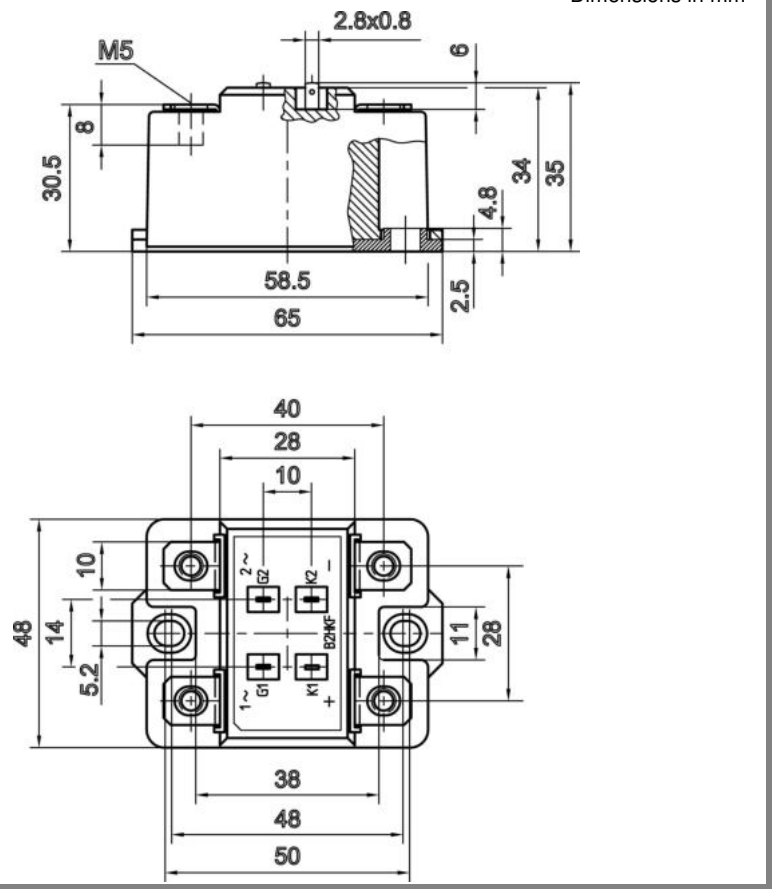


Fig. 11 Gate characteristics of a thyristor device

Dimensions in mm



Case G 19

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.

