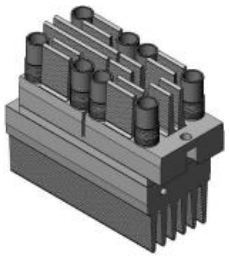


SEMiSTART

Antiparallel thyristors for softstart

SKKQ 800

Features

- Compact design
- Thyristor with amplifying gate
- Pressure contact technology

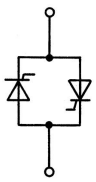
Typical Applications*

- Soft Starters

Remarks

- Please note: This module has no soft mold protection around the chip. It is therefore susceptible to environmental influences (dust, humidity, etc.). The humidity test according to IEC60068-2-67 is not passed by this product.
- Recommendation: The devices should be installed in control cabinets of IP54 degree of protection.

1) T_{vjmax} up to 150°C is allowable for overload conditions, max. time period for the overload condition is 20s.



W1C

Absolute Maximum Ratings

Symbol	Conditions	Values	Units
$I_{overload}$	W1C; sin. 180°; 20 sec.; $T_{vjmax.}$ = 150 °C; $T_{vjstart}$ = 40°C	800	A
I_{TSM}	T_{vj} = 25°C; 10 ms	5700	A
	T_{vj} = 125°C; 10 ms	5200	A
I^2t	T_{vj} = 25°C; 8,3 ... 10 ms	162000	A^2s
	T_{vj} = 125°C; 8,3 ... 10 ms	135000	A^2s
SKKQ 800/14			
V_{RSM}		1500	V
V_{RRM},V_{DRM}		1400	V
SKKQ 800/18			
V_{RSM}		1900	V
V_{RRM},V_{DRM}		1800	V
T_{vj}		-40 ... +125[1)]	°C
T_{stg}		-40 ... +125	°C

Characteristics

Symbol	Conditions	min.	typ.	max.	Units
V_T	T_{vj} = 25°C; I_T = 1000 A			1,9	V
$V_{T(TO)}$	T_{vj} = 125°C			0,9	V
r_T	T_{vj} = 125°C			0,8	mΩ
I_{DD};I_{RD}	T_{vj} = 125°C; V_{RD} = V_{RRM}; per module			80	mA
t_{gd}	T_{vj} = 25°C; I_G = 1A; di_G/dt = 1A/µs		1		µs
t_{gr}	V_D = 0,67 * V_{DRM}		2		µs
$(dv/dt)_{cr}$	T_{vj} = 125°C		1000		V/µs
$(di/dt)_{cr}$	T_{vj} = 125°C; f = 50 ... 60 Hz		125		A/µs
t_q	T_{vj} = 125°C		150		µs
I_H	T_{vj} = 25°C		150	400	mA
I_L	T_{vj} = 25°C; R_G = 33 Ω		300	1000	mA
V_{GT}	T_{vj} = 25°C; d.c.	2			V
I_{GT}	T_{vj} = 25°C; d.c.	150			mA
V_{GD}	T_{vj} = 125°C; d.c.			0,25	V
I_{GD}	T_{vj} = 125°C; d.c.			10	mA
$R_{th(j-s)}$	cont.; per thyristor			0,106	K/W
M_t			5 ± 15%		Nm
m	approx.		1200		g
Case			C 12		

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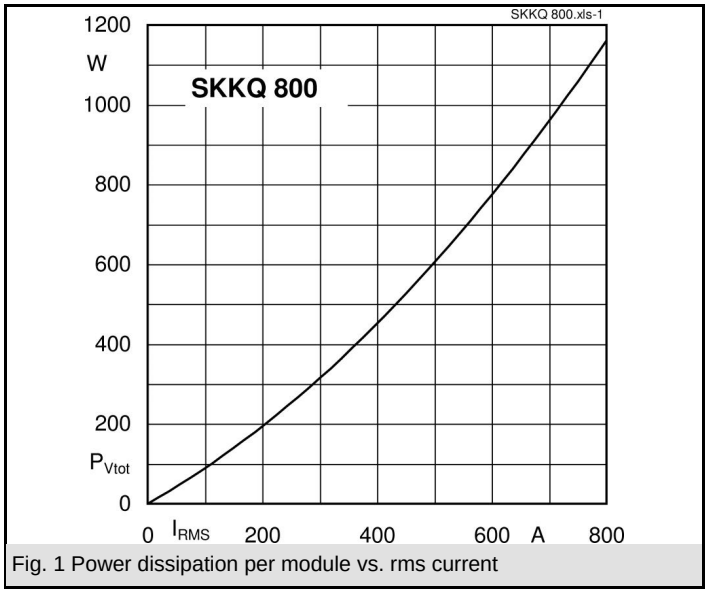

Fig. 1 Power dissipation per module vs. rms current

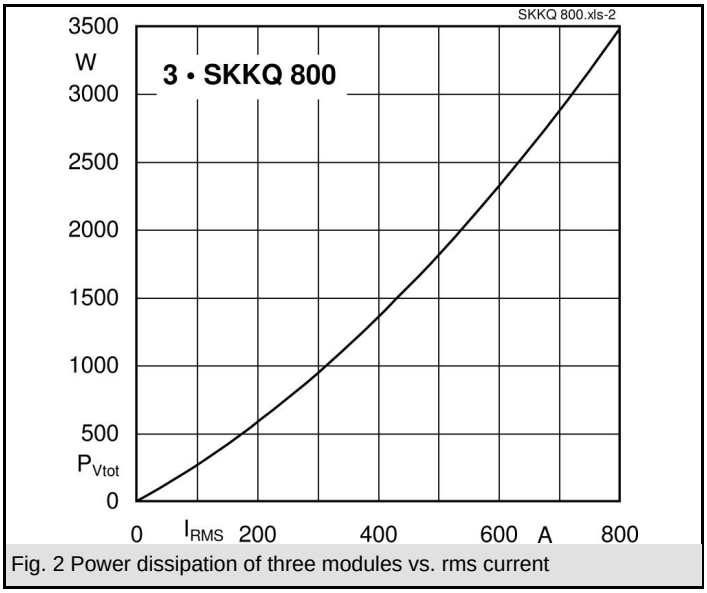

Fig. 2 Power dissipation of three modules vs. rms current

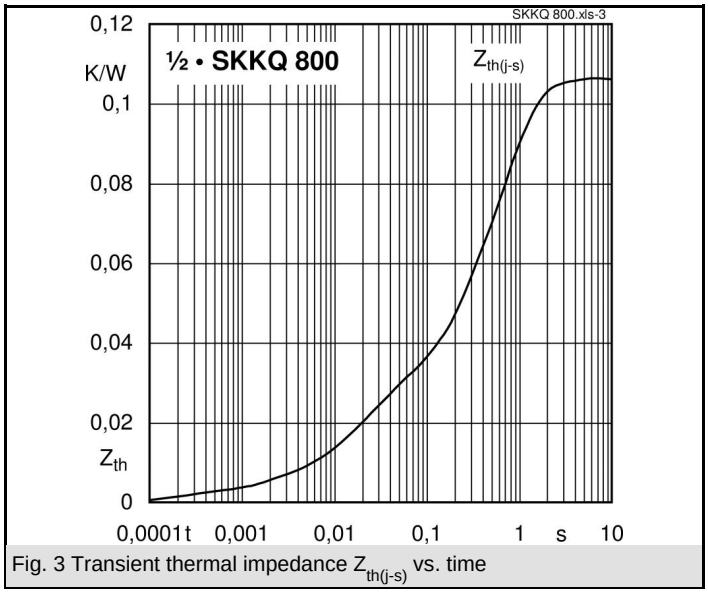

Fig. 3 Transient thermal impedance $Z_{th(j-s)}$ vs. time

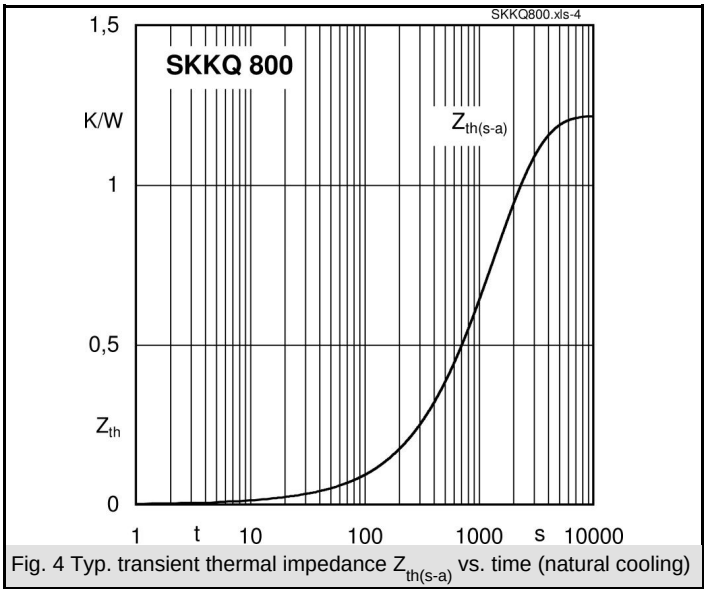

Fig. 4 Typ. transient thermal impedance $Z_{th(s-a)}$ vs. time (natural cooling)

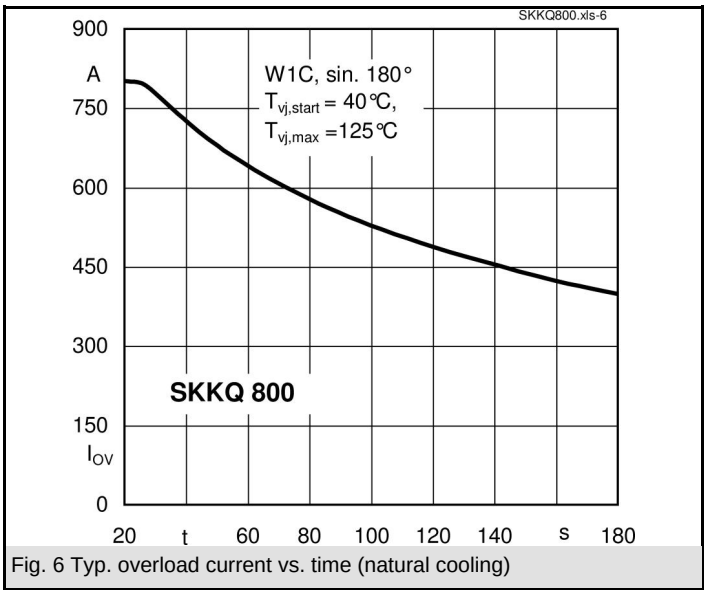

Fig. 6 Typ. overload current vs. time (natural cooling)

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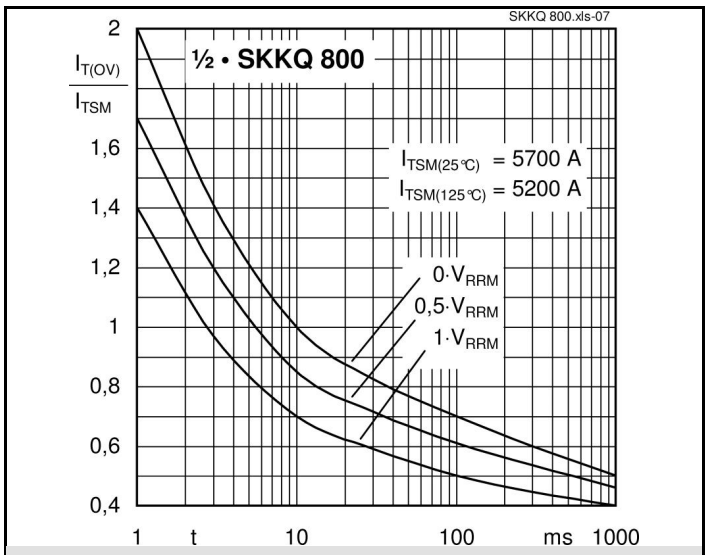

Fig. 7 Surge overload current vs. time

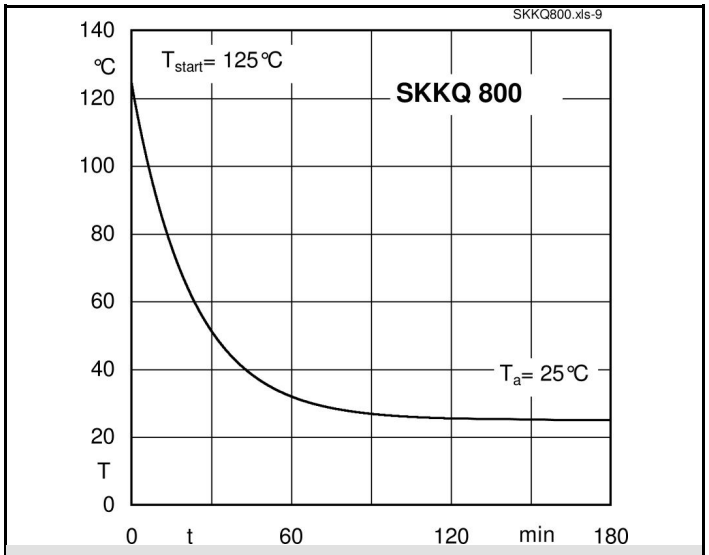

Fig. 9 Typ. cooling down vs. time (natural cooling)

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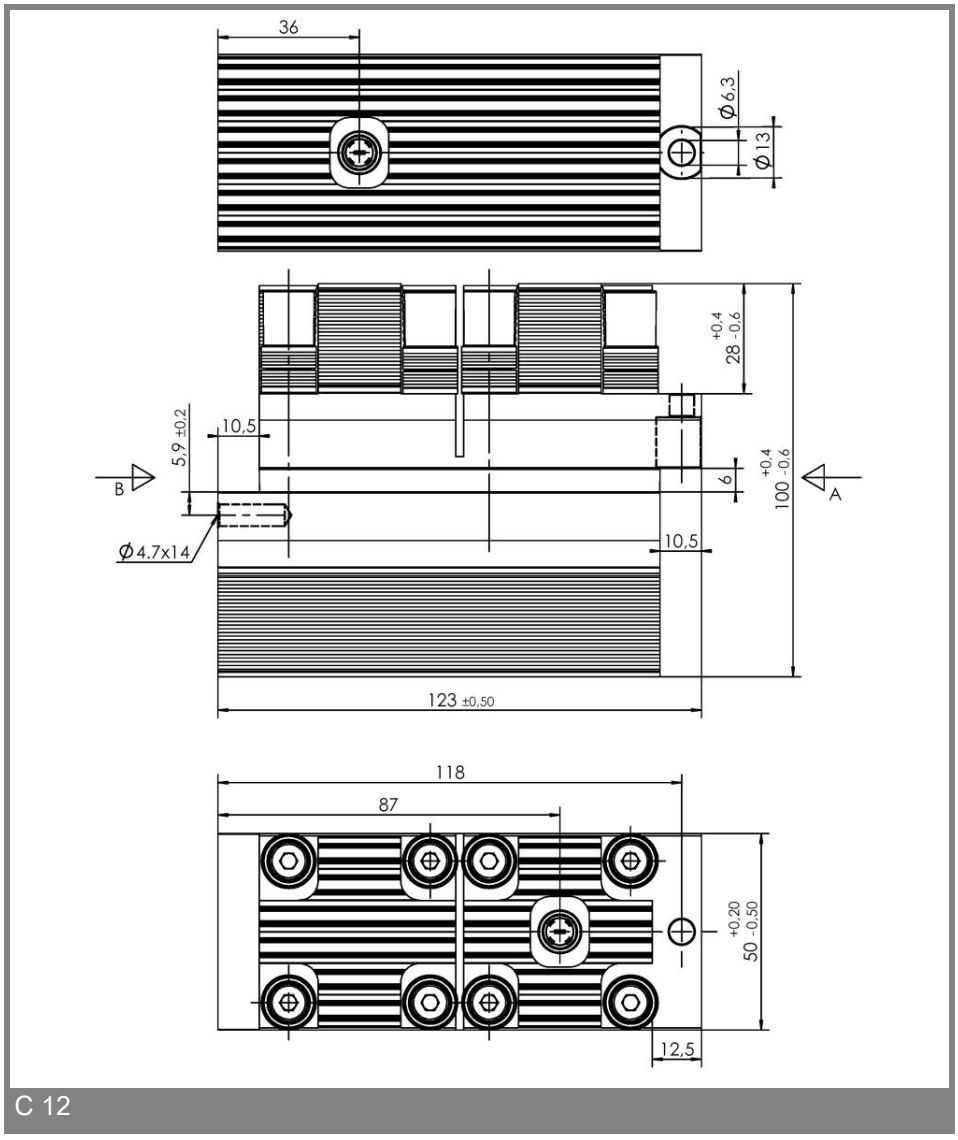
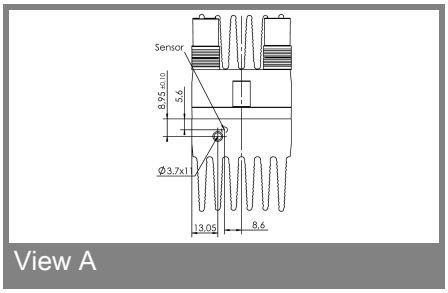
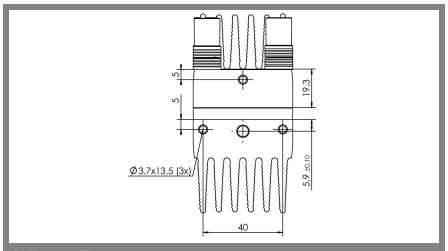


C 12



View A



View B

* 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.

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