

## SEMiSTART

### Antiparallel thyristors for softstart

#### SKKQ 1200

#### 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.

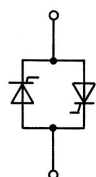
1)  $T_{vjmax}$  up to 150°C is allowable for overload conditions, max. time period for the overload condition is 20s.

#### Absolute Maximum Ratings

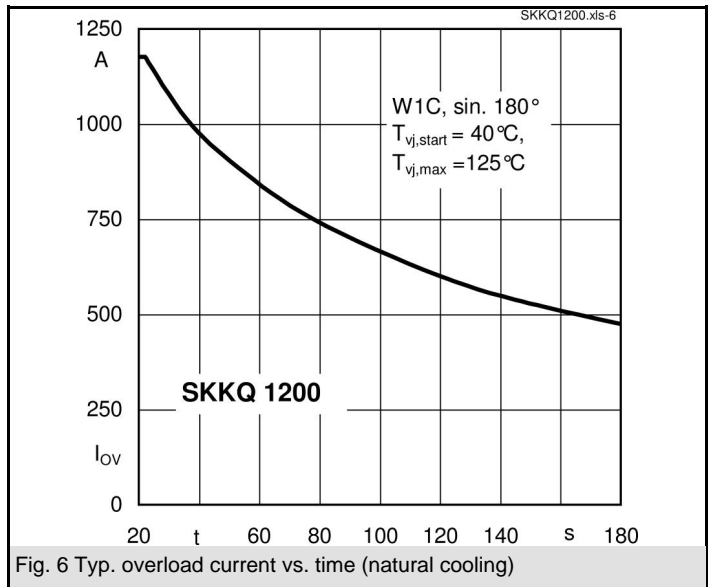
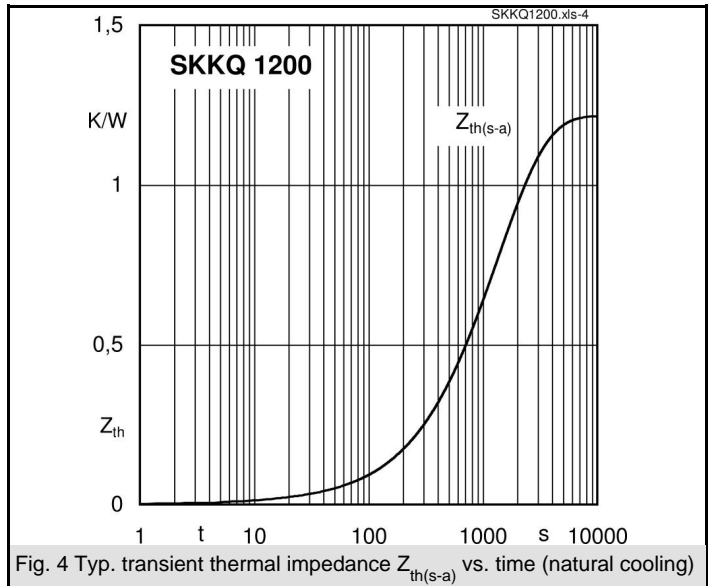
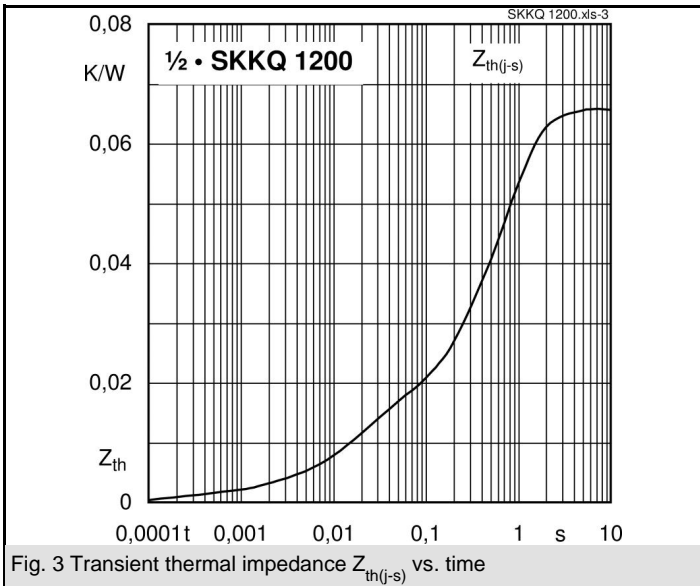
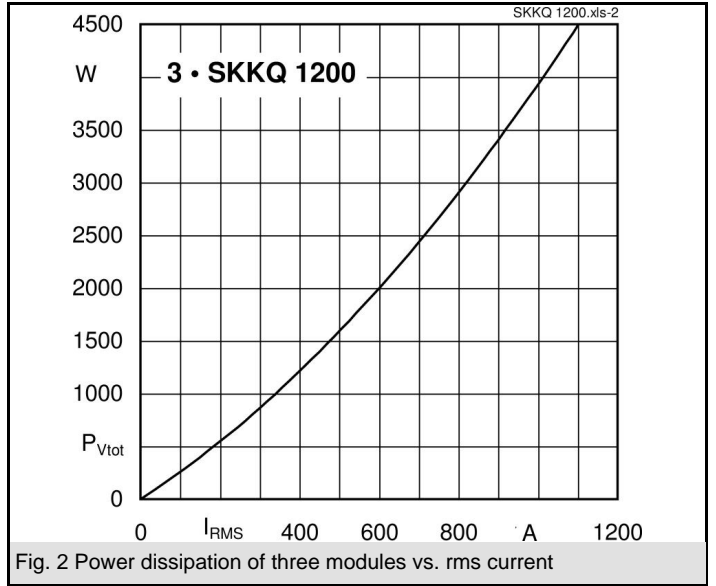
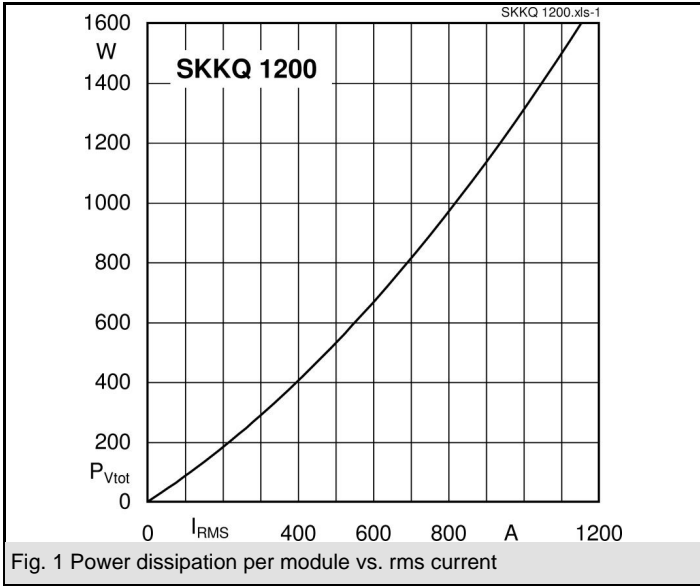
Symbol	Conditions	Values	Units
$I_{overload}$	W1C; sin. 180°; 20 sec.; $T_{vjmax} = 150\text{ °C}$ ; $T_{vjstart} = 40\text{ °C}$	1225	A
$I_{TSM}$	$T_{vj} = 25\text{ °C}$ ; 10 ms	9500	A
	$T_{vj} = 125\text{ °C}$ ; 10 ms	8000	A
$I^2t$	$T_{vj} = 25\text{ °C}$ ; 8,3 ... 10 ms	451000	A <sup>2</sup> s
	$T_{vj} = 125\text{ °C}$ ; 8,3 ... 10 ms	320000	A <sup>2</sup> s
SKKQ 1200/14			
$V_{RSM}$		1500	V
$V_{RRM}, V_{DRM}$		1400	V
SKKQ 1200/18			
$V_{RSM}$		1900	V
$V_{RRM}, V_{DRM}$		1800	V
$T_{vj}$		-40 ... +125 <sup>1)</sup>	°C
$T_{stg}$		-40 ... +125	°C

#### Characteristics

Symbol	Conditions	min.	typ.	max.	Units
$V_T$	$T_{vj} = 25\text{ °C}$ ; $I_T = 1500\text{ A}$			1,65	V
$V_{T(TO)}$	$T_{vj} = 125\text{ °C}$			0,9	V
$r_T$	$T_{vj} = 125\text{ °C}$			0,5	mΩ
$I_{DD}, I_{RD}$	$T_{vj} = 125\text{ °C}$ ; $V_{RD} = V_{RRM}$ ; per module			120	mA
$t_{gd}$	$T_{vj} = 25\text{ °C}$ ; $I_G = 1\text{ A}$ ; $di_G/dt = 1\text{ A}/\mu\text{s}$		1		μs
$t_{gr}$	$V_D = 0,67 * V_{DRM}$		2		μs
$(dv/dt)_{cr}$	$T_{vj} = 125\text{ °C}$		1000		V/μs
$(di/dt)_{cr}$	$T_{vj} = 125\text{ °C}$ ; $f = 50 \dots 60\text{ Hz}$		200		A/μs
$t_q$	$T_{vj} = 125\text{ °C}$		150		μs
$I_H$	$T_{vj} = 25\text{ °C}$		150	500	mA
$I_L$	$T_{vj} = 25\text{ °C}$ ; $R_G = 33\text{ Ω}$		300	2000	mA
$V_{GT}$	$T_{vj} = 25\text{ °C}$ ; d.c.	3			V
$I_{GT}$	$T_{vj} = 25\text{ °C}$ ; d.c.	200			mA
$V_{GD}$	$T_{vj} = 125\text{ °C}$ ; d.c.			0,25	V
$I_{GD}$	$T_{vj} = 125\text{ °C}$ ; d.c.			10	mA
$R_{th(j-s)}$	cont.; per thyristor			0,066	K/W
$M_t$			5 ± 15%		Nm
m	approx.		1200		g
Case			C 12		



W1C



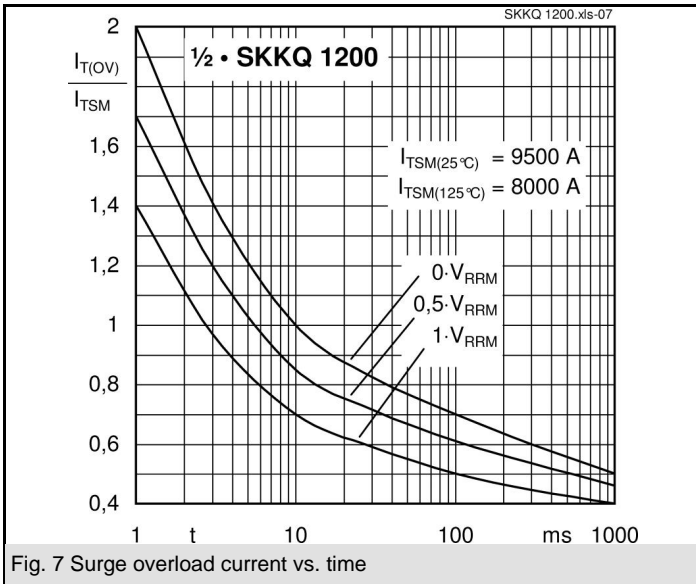


Fig. 7 Surge overload current vs. time

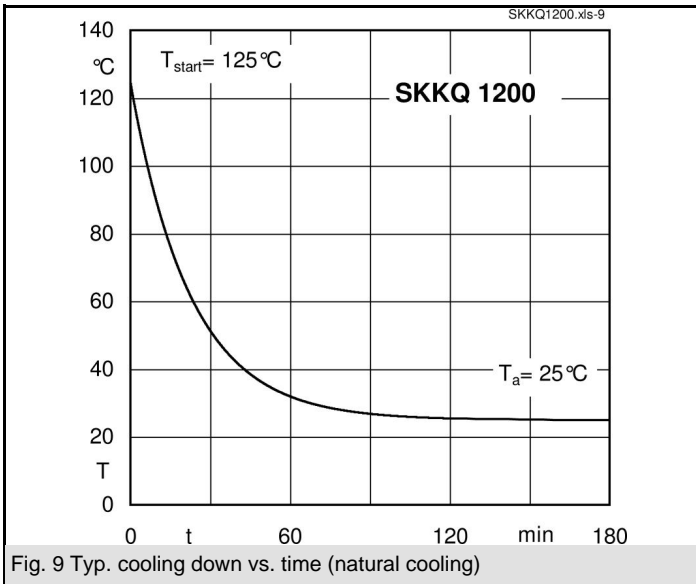
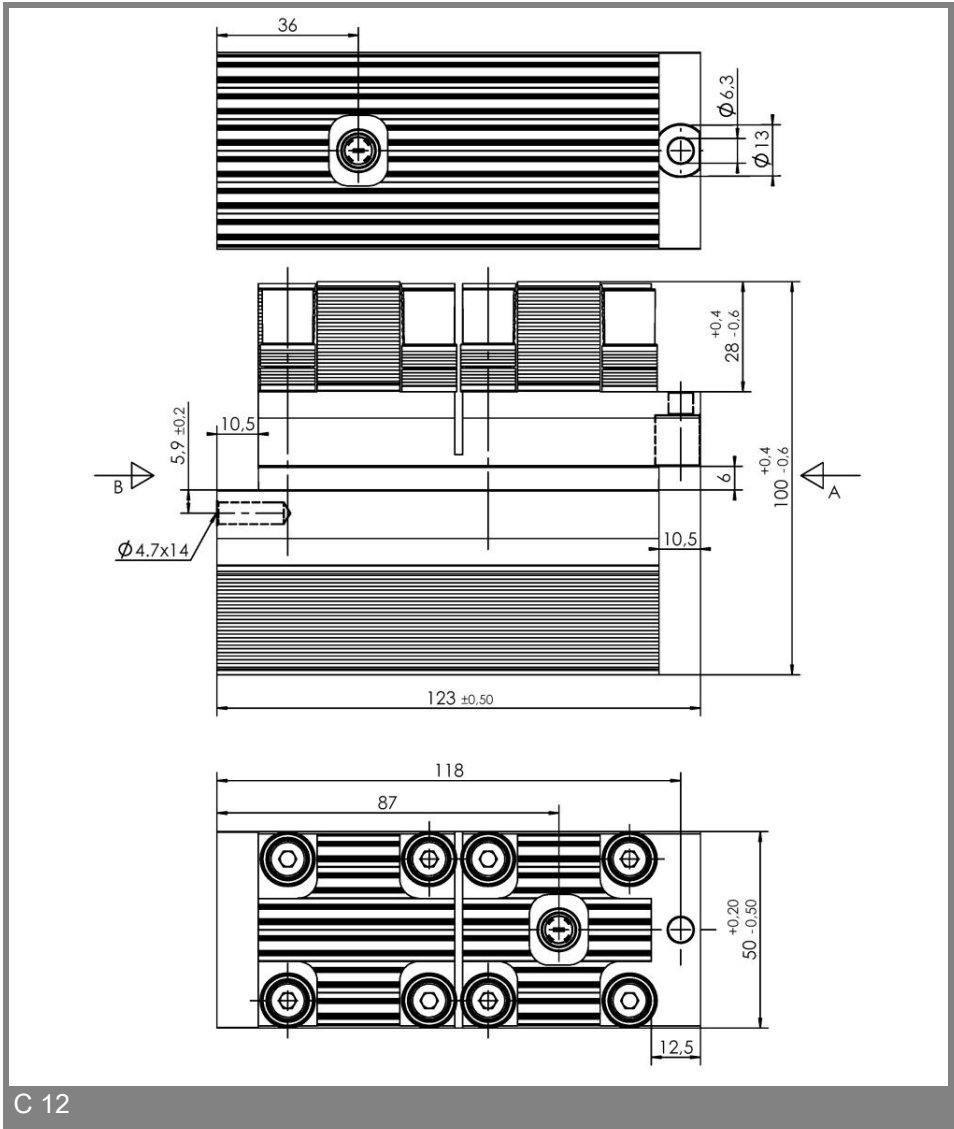
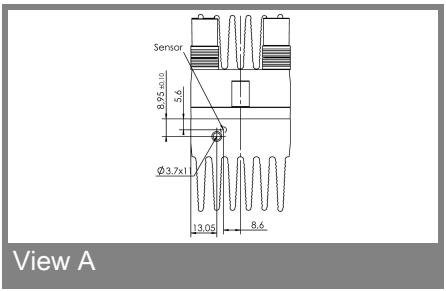


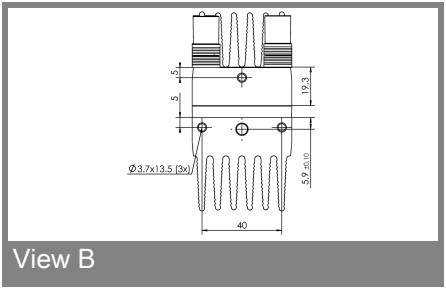
Fig. 9 Typ. cooling down vs. time (natural cooling)



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.