



## SEMiSTART

### Antiparallel thyristors for softstart

#### SKKQ 1200/14E

##### Preliminary Data

##### Features

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

##### Typical Applications\*

- Soft starters

##### Remarks

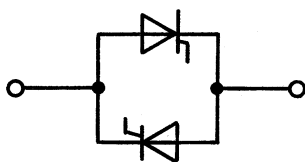
- Please note: This module has no soft mold protection around the chip. It is therefore susceptible to environmental influences (dust, humidity, etc.). The humidity test according to IEC60068-2-67 is not passed by this product.
- Recommendation: The devices should be installed in control cabinets of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

##### Footnotes

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

Absolute Maximum Ratings			
Symbol	Conditions	Values	Unit
<b>Module</b>			
$I_{overload}$	W1C, sin. 180°, 20 s, $T_{jmax} = 150\text{ °C}$ , $T_{jstart} = 40\text{ °C}$	1225	A
$I_{TSM}$	10 ms	$T_j = 25\text{ °C}$	9500
		$T_j = 125\text{ °C}$	8000
$i^2t$	10 ms	$T_j = 25\text{ °C}$	451000
		$T_j = 125\text{ °C}$	320000
$V_{RSM}$		1500	V
$V_{RRM}$ $V_{DRM}$		1400	V
$T_j$		-40 ... + 125	°C
$T_{stg}$		-40 ... + 125	°C

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
$V_T$	$T_j = 25\text{ °C}$ , $I_T = 1500\text{ A}$			1.65	V
$V_{T(TO)}$	$T_j = 125\text{ °C}$			0.9	V
$r_T$	$T_j = 125\text{ °C}$			0.5	mΩ
$I_{DD}; I_{RD}$	$T_j = 125\text{ °C}$ , $V_{RD} = V_{RRM}$ , per module			120	mA
$t_{gd}$	$T_j = 25\text{ °C}$ , $I_G = 1\text{ A}$ , $di_G/dt = 1\text{ A}/\mu\text{s}$		1		μs
$t_{gr}$	$V_D = 0.67 \cdot V_{DRM}$		2		μs
$(dv/dt)_{cr}$	$T_j = 125\text{ °C}$		1000		V/μs
$(di/dt)_{cr}$	$T_j = 125\text{ °C}$ , $f = 50 \dots 60\text{ Hz}$		200		A/μs
$t_q$	$T_j = 125\text{ °C}$		150		μs
$I_H$	$T_j = 25\text{ °C}$		150	500	mA
$I_L$	$T_j = 25\text{ °C}$ , $R_G = 33\text{ Ω}$		300	2000	mA
$V_{GT}$	$T_j = 25\text{ °C}$ , d.c.	3			V
$I_{GT}$	$T_j = 25\text{ °C}$ , d.c.	200			mA
$V_{GD}$	$T_j = 125\text{ °C}$ , d.c.			0.25	V
$I_{GD}$	$T_j = 125\text{ °C}$ , d.c.			10	mA
$R_{th(j-r)}$	continuous DC, per thyristor			0.066	K/W
$M_t$	to terminals	4.25		5.75	Nm
m	approx.		1200		g
Case			2		



W1C

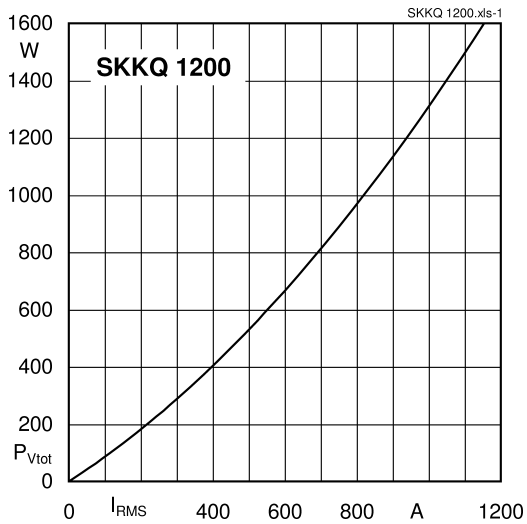


Fig. 1: Power dissipation per module vs. rms current

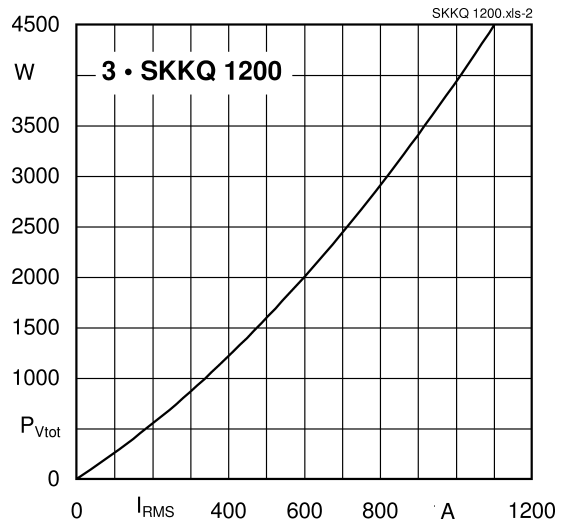


Fig. 2: Power dissipation of three modules vs. rms current

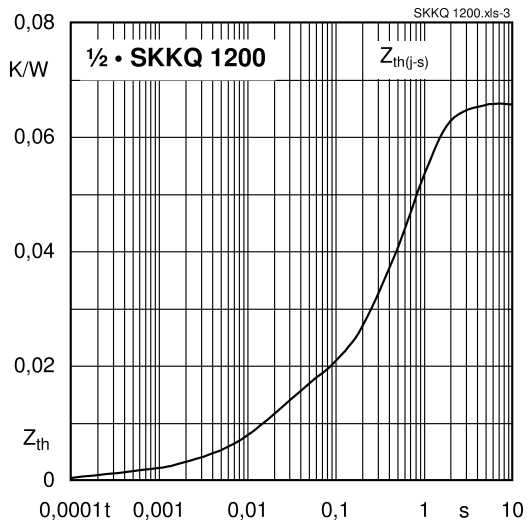


Fig. 3: Transient thermal impedance  $Z_{th(j-r)}$  vs. time

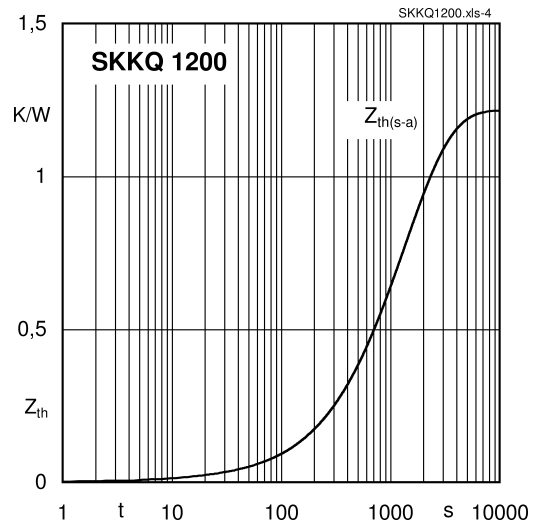


Fig. 4: Typ. transient thermal impedance  $Z_{th(s-a)}$  vs. time (natural cooling)

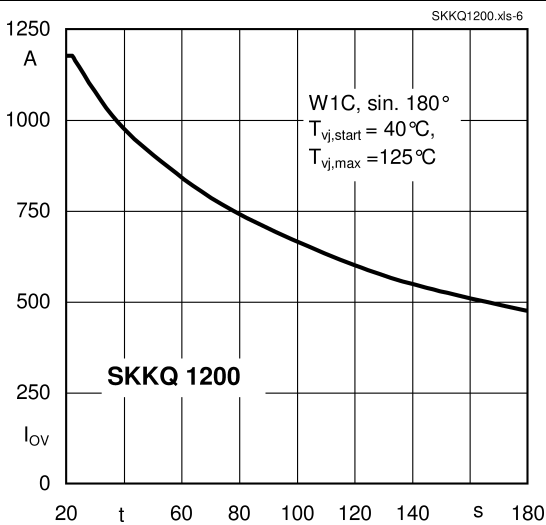


Fig. 6: Typ. overload current vs. time (natural cooling)

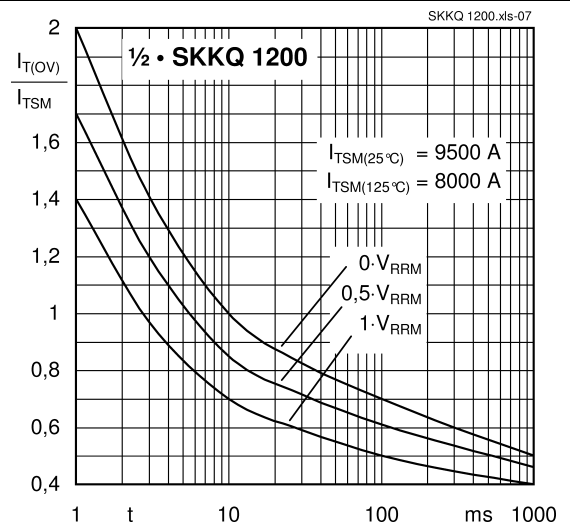
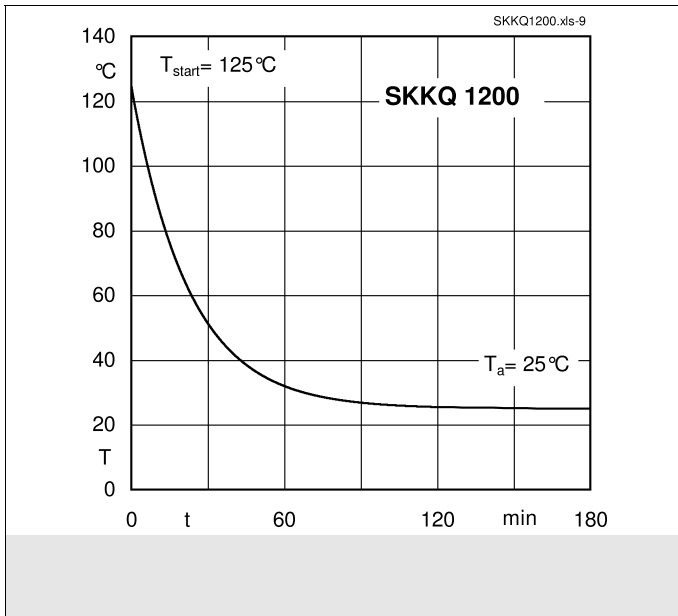
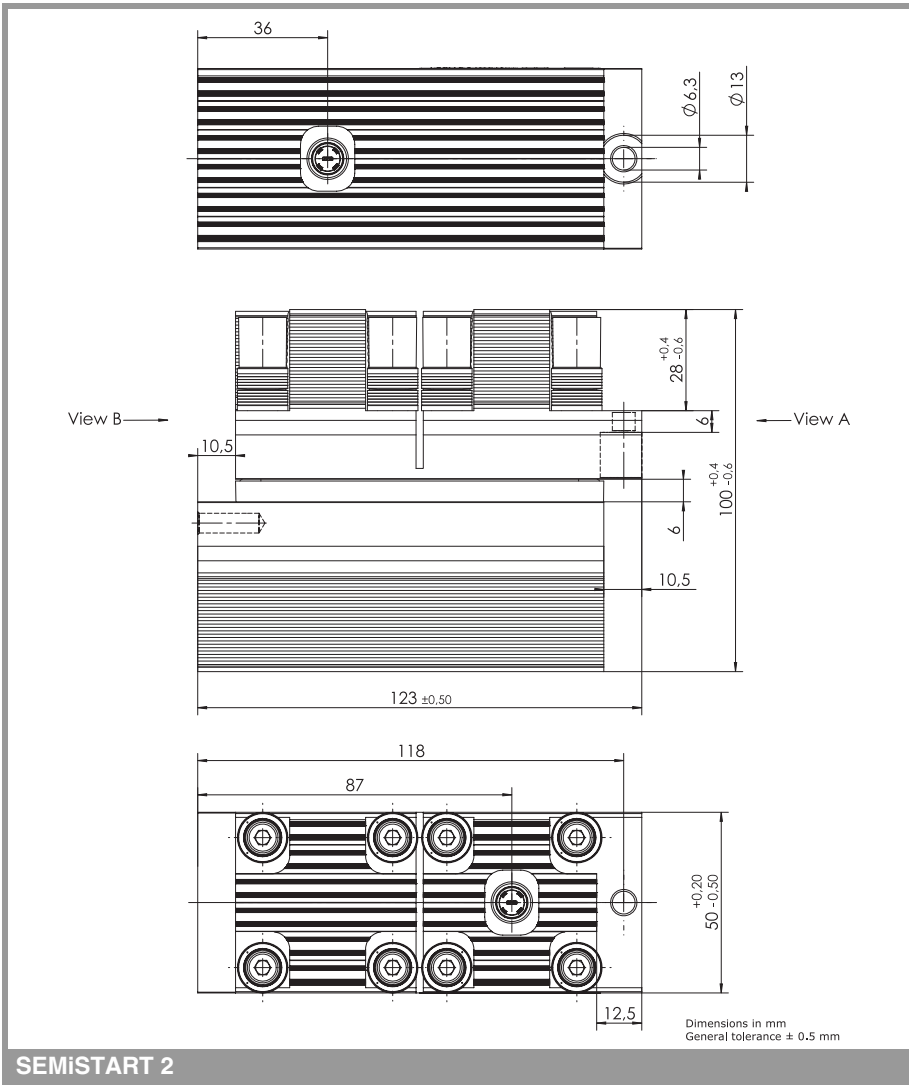


Fig. 7: Surge overload current vs. time

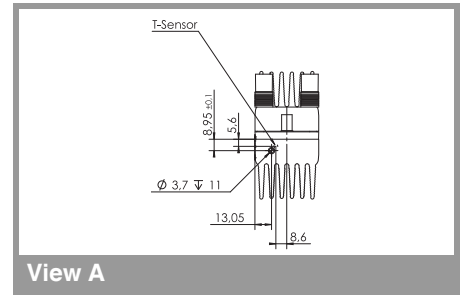
# SKKQ 1200/14E



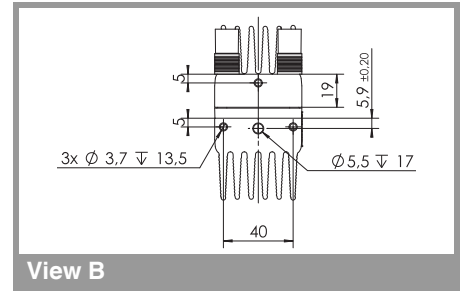
# SKKQ 1200/14E



SEMISTART 2



View A



View B

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

## \*IMPORTANT INFORMATION AND WARNINGS

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