



**SEMIPACK® 2**

## Rectifier Diode Modules

### SKKD 212/12

#### Features\*

- Heat transfer through aluminum oxide ceramic insulated metal baseplate
- Hard soldered joints for high reliability
- UL recognized, file no. E63532

#### Typical Applications

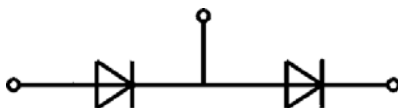
- Non-controllable rectifiers for AC/AC converters
- Line rectifiers for transistorized AC motor controllers
- Field supply for DC motors

#### Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
Rectifier Diode				
I <sub>FAV</sub>	sin. 180°	T <sub>c</sub> = 85 °C	213	A
	T <sub>j max</sub> = 135 °C	T <sub>c</sub> = 100 °C	165	A
I <sub>FSM</sub>	10 ms	T <sub>j</sub> = 25 °C	6600	A
		T <sub>j</sub> = 135 °C	5500	A
i <sup>2</sup> t	10 ms	T <sub>j</sub> = 25 °C	217800	A <sup>2</sup> s
		T <sub>j</sub> = 135 °C	151250	A <sup>2</sup> s
V <sub>RSM</sub>	T <sub>j</sub> = 25 °C		1300	V
V <sub>RRM</sub>	T <sub>j</sub> = 25 °C		1200	V
T <sub>j</sub>			-40 ... 135	°C
Module				
T <sub>stg</sub>			-40 ... 125	°C
V <sub>isol</sub>	a.c.; 50 Hz; r.m.s.	1 min	3000	V
		1 s	3600	V

#### Characteristics

Symbol	Conditions	min.	typ.	max.	Unit
<b>Diode</b>					
$V_F$	$T_j = 25\text{ °C}$ , $I_F = 500\text{ A}$			1.40	V
$V_{F0}$	$T_j = 135\text{ °C}$			0.75	V
$r_F$	$T_j = 135\text{ °C}$			1.05	mΩ
$I_R$	$T_j = 135\text{ °C}$ , $V_{RD} = V_{RRM}$			9	mA
$R_{th(j-c)}$	cont.			0.18	K/W
				0.09	K/W
$R_{th(j-c)}$	sin. 180°			0.18	K/W
				0.09	K/W
<b>Module</b>					
$R_{th(c-s)}$	chip		0.1		K/W
	module		0.05		K/W
$M_s$	to heatsink M5	4.25		5.75	Nm
$M_t$	to terminals M6	4.25		5.75	Nm
$a$				5 * 9.81	m/s <sup>2</sup>
$w$			165		g



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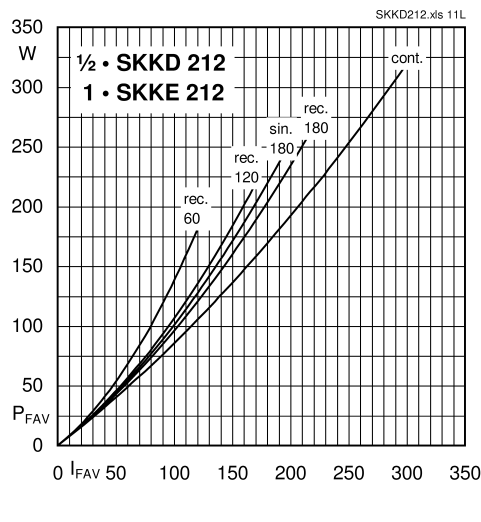


Fig. 11L: Power dissipation per diode vs. forward current

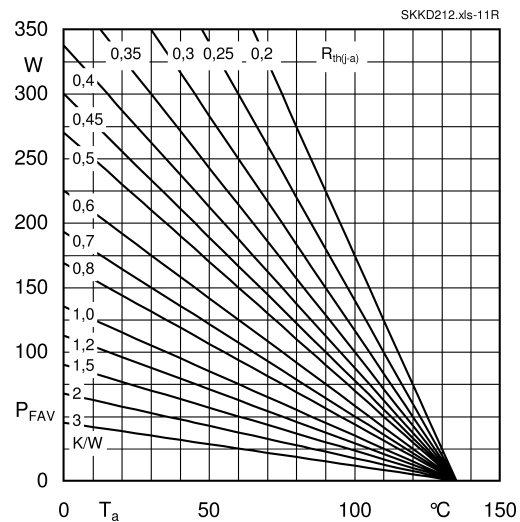


Fig. 11R: Power dissipation per diode vs. ambient temperature

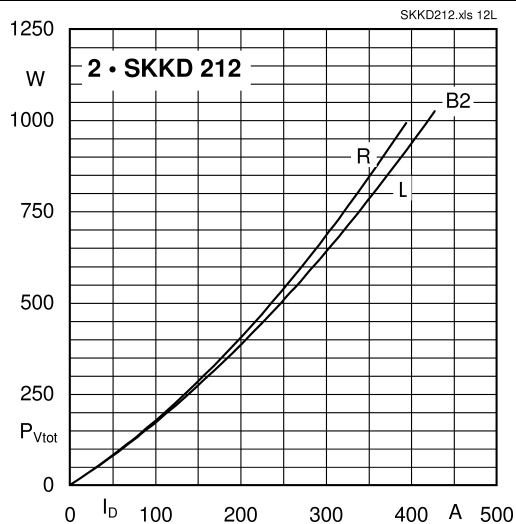


Fig. 12L: Power dissipation of two modules vs. direct current

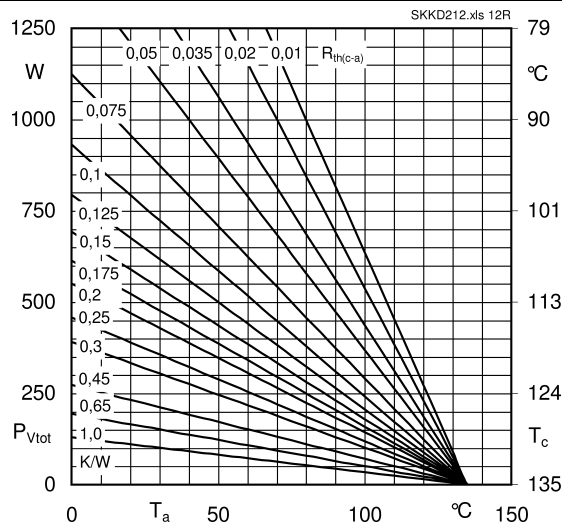


Fig. 12R: Power dissipation of two modules vs. case temperature

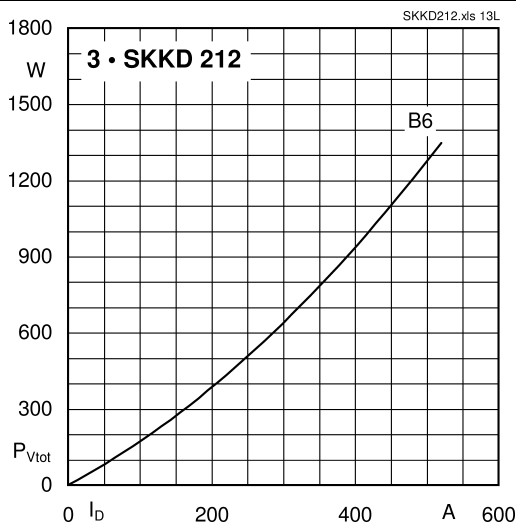


Fig. 13L: Power dissipation of three modules vs. direct current

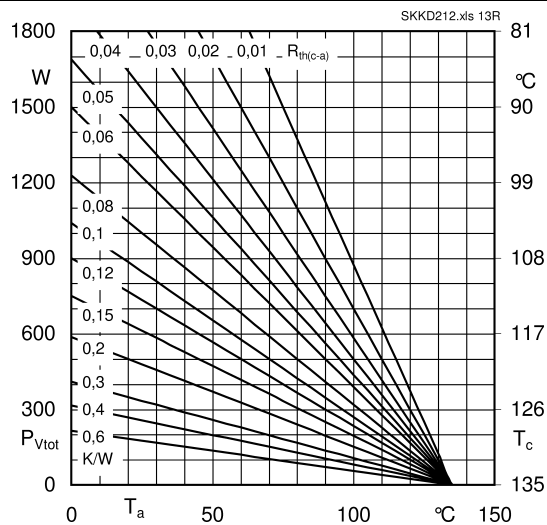


Fig. 13R: Power dissipation of three modules vs. case temperature

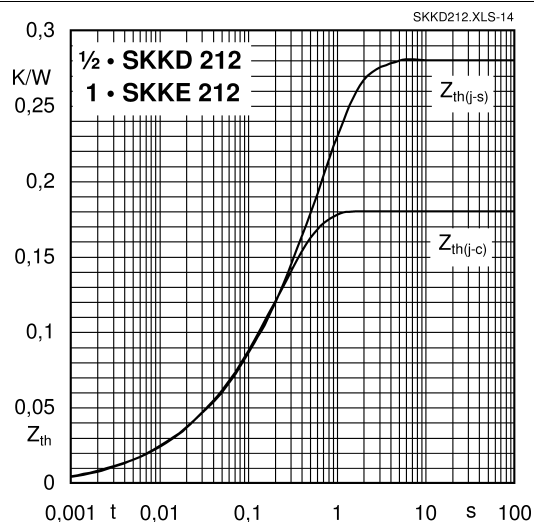


Fig. 14: Transient thermal impedance vs. time

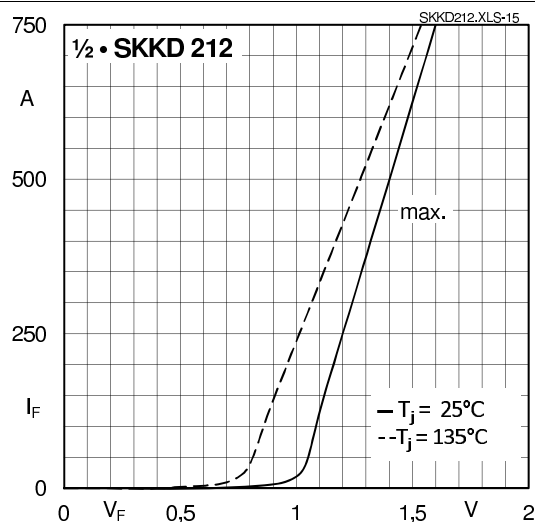


Fig. 15: Forward characteristics

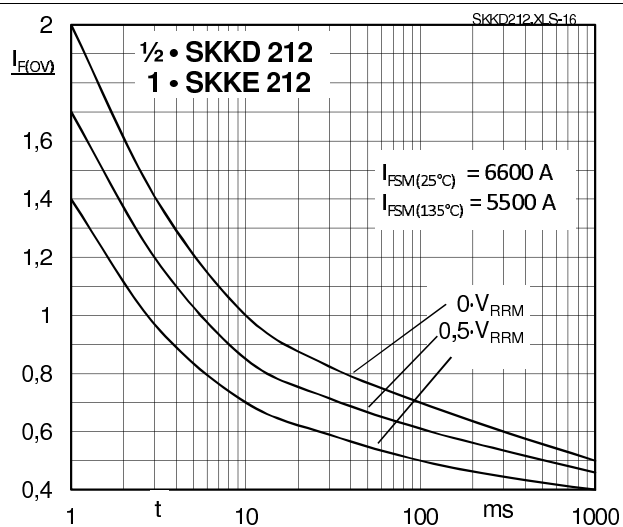
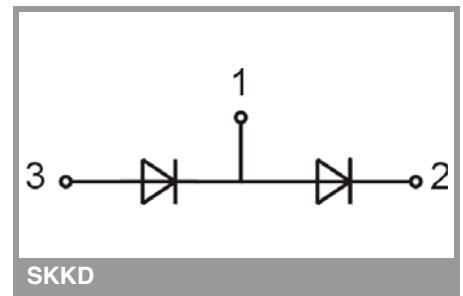
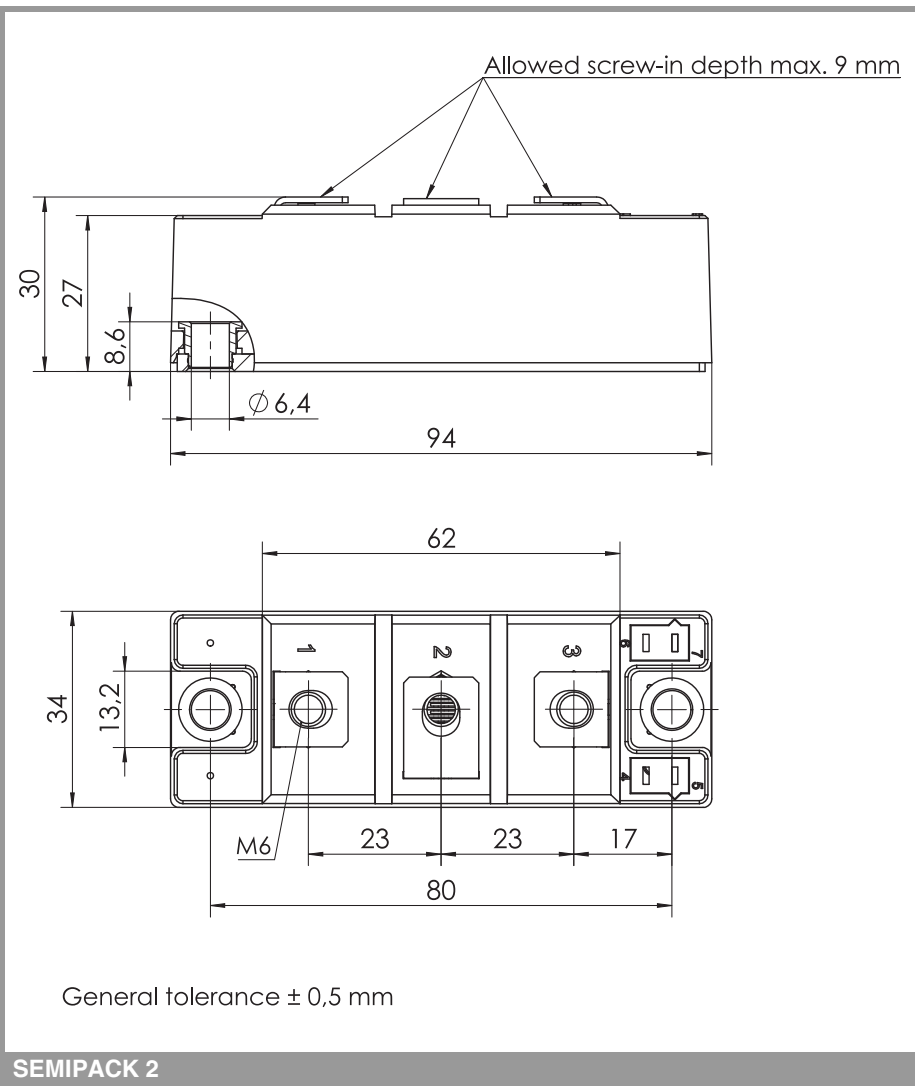


Fig. 16: Surge overload current vs. time



This is an electrostatic discharge sensitive device (ESDS) due to international standard IEC 61340.

## \*IMPORTANT INFORMATION AND WARNINGS

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