SKKD 353/16

SEMIPACK® 3

Rectifier Diode Modules

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Features

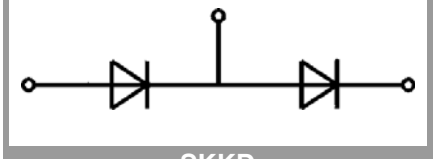
- Industrial standard package
- Electrically insulated base plate
- Heat transfer through aluminum oxide ceramic insulated metal base plate
- Chip soldered on direct copper bonded Al2O3 ceramic
- UL recognition applied for file no. E63532

Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
Recitifier Diode				
I_{FAV}	sin. 180°	T_c = 85 °C	350	A
		T_c = 100 °C	260	A
I_{FRMS}	continuous operation		580	A
I_{FSM}	10 ms	T_j = 25 °C	10500	A
		T_j = 130 °C	9500	A
i^2t	10 ms	T_j = 25 °C	551250	A^2s
		T_j = 130 °C	451250	A^2s
V_{RSM}			1700	V
V_{RRM}			1600	V
T_j			-40 ... 130	°C
Module				
T_{stg}			-40 ... 125	°C
V_{isol}	a.c.; 50 Hz; r.m.s.	1 min	3000	V
		1 s	3600	V

Characteristics

Symbol	Conditions		min.	typ.	max.	Unit
Diode						
V_F	T_j = 25 °C, I_F = 750 A				1.38	V
$V_{(TO)}$	T_j = 130 °C				0.84	V
r_T	T_j = 130 °C				0.67	mΩ
I_{RD}	T_j = 130 °C, V_{RD} = V_{RRM}				15	mA
$R_{th(j-c)}$	cont.	per chip			0.09	K/W
		per module			0.045	K/W
$R_{th(j-c)}$	sin. 180°	per chip			0.092	K/W
		per module			0.046	K/W
Module						
$R_{th(c-s)}$	chip			0.08		K/W
	module			0.04		K/W
M_s	to heatsink M5		4.25		5.75	Nm
M_t	to terminals M8		7.65		10.35	Nm
a					5 * 9,81	m/s^2
w				410		g



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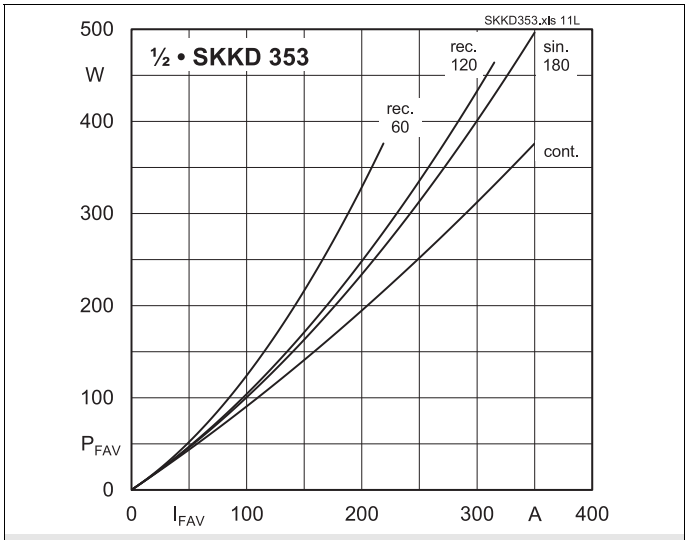

Fig. 11L: Power dissipation per diode vs. forward current

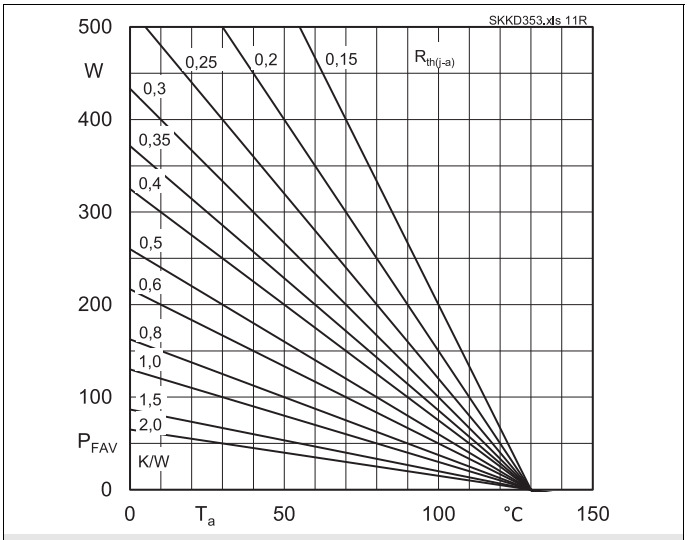

Fig. 11R: Power dissipation per diode vs. ambient temperature

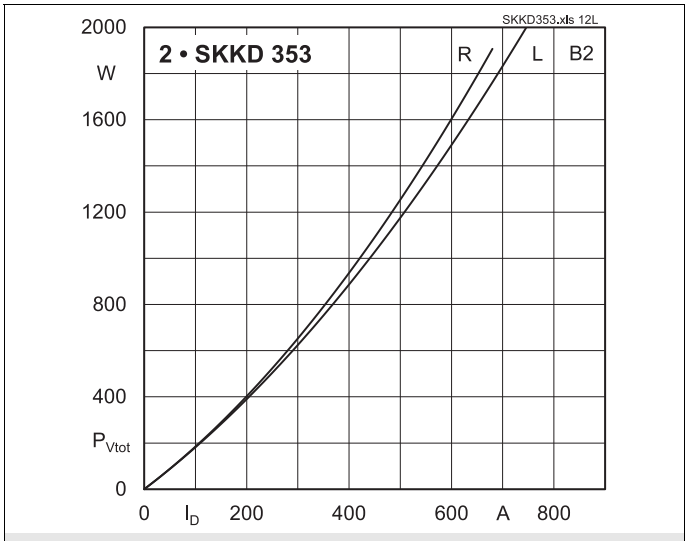

Fig. 12L: Power dissipation of two modules vs. direct current

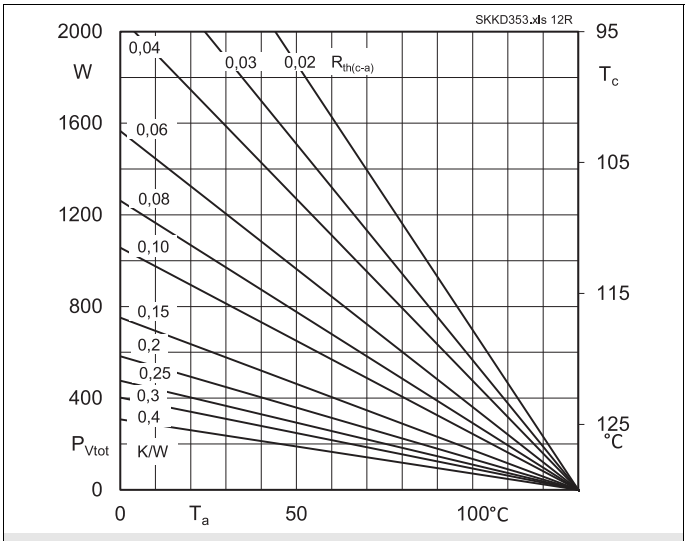

Fig. 12R: Power dissipation of two modules vs. case temperature

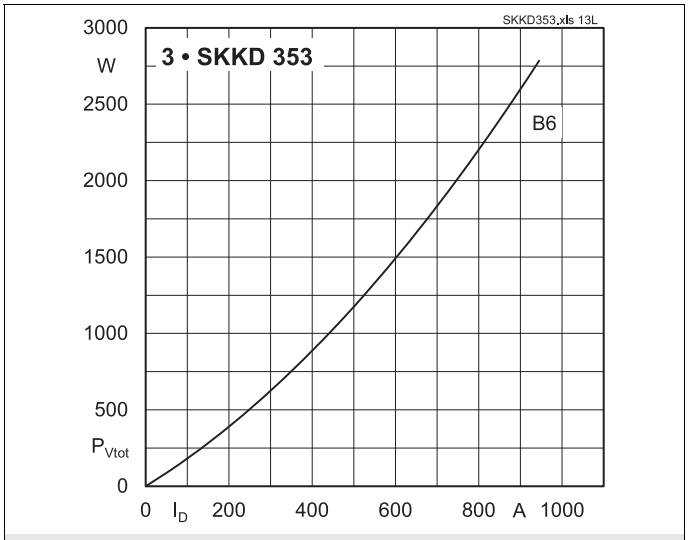

Fig. 13L: Power dissipation of three modules vs. direct current

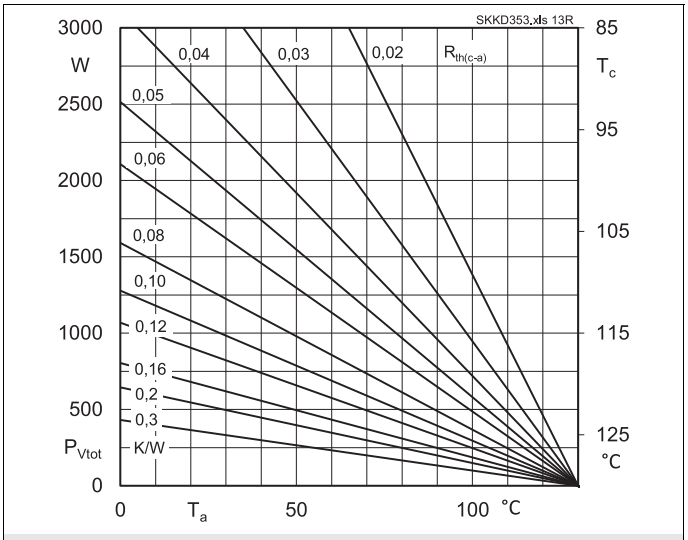

Fig. 13R: Power dissipation of three modules vs. case temperature

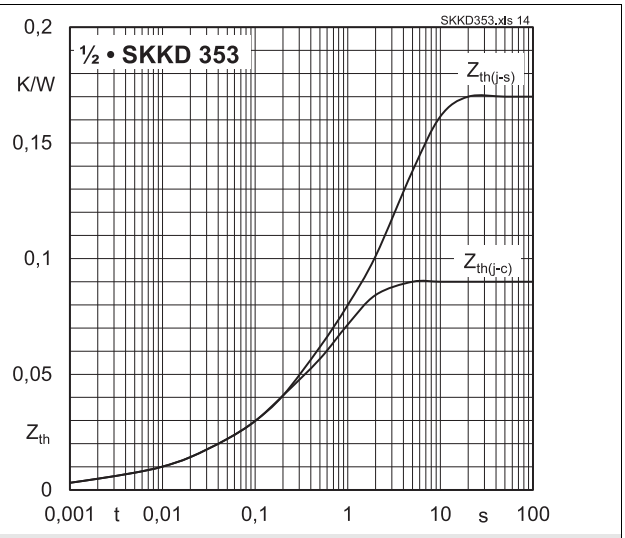

Fig. 14: Transient thermal impedance vs. time

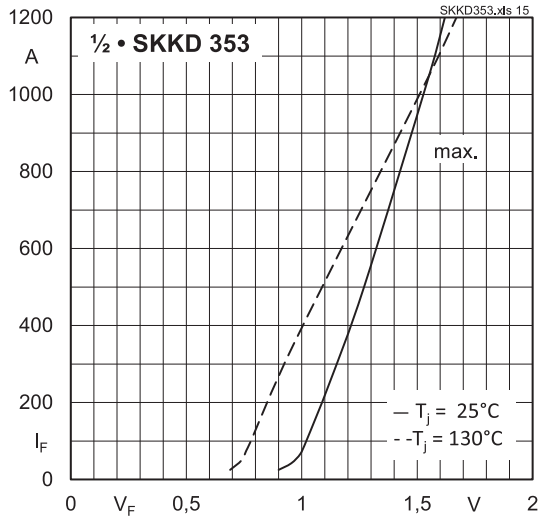

Fig. 15: Forward characteristics

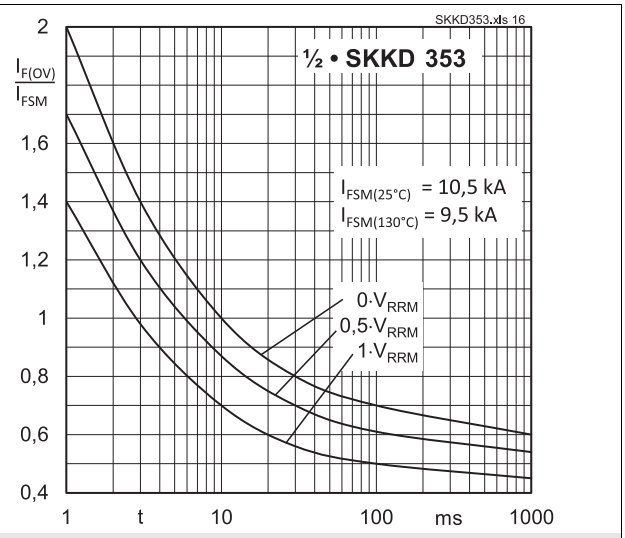

Fig. 16: Surge overload current vs. time

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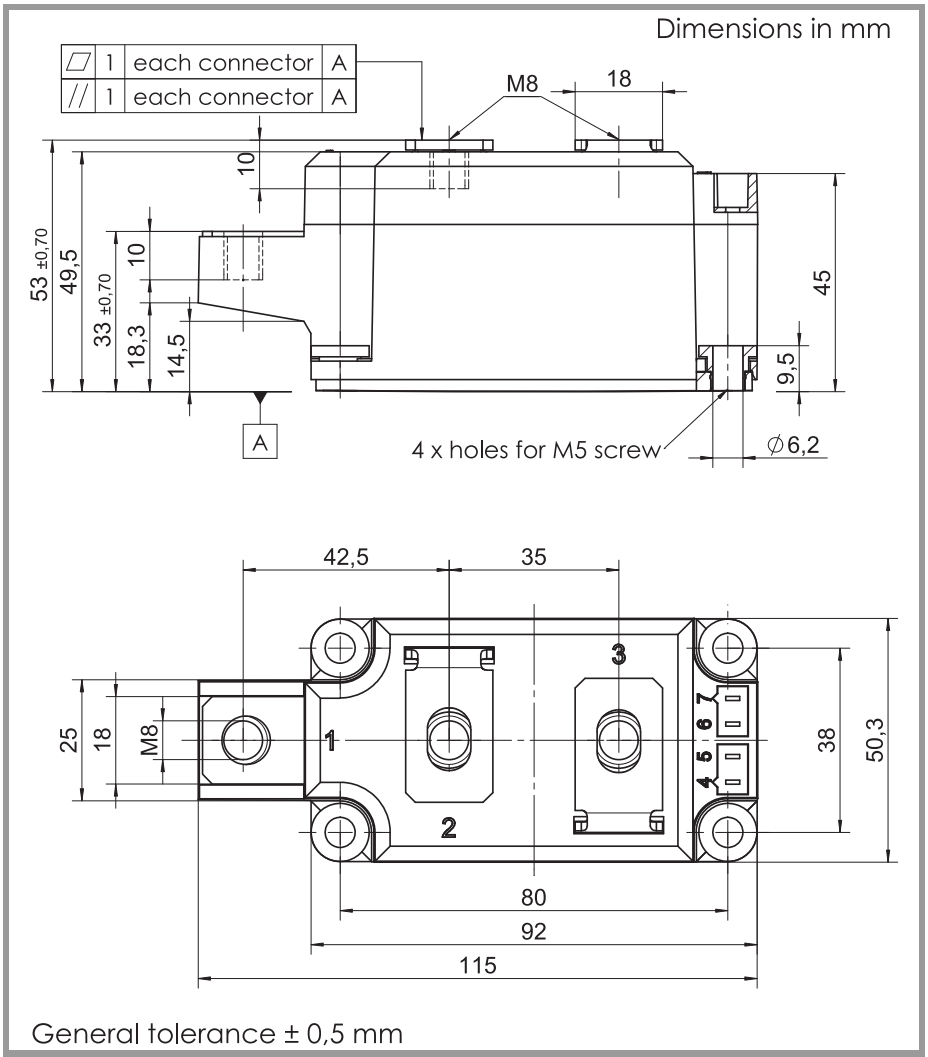

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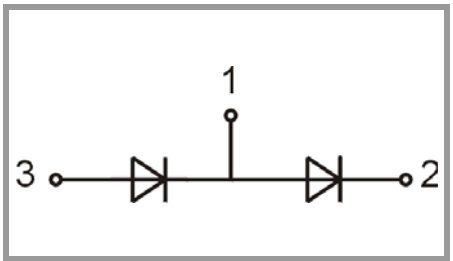

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This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX

* 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 staff.