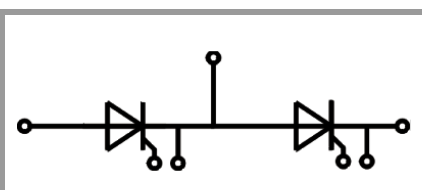# SKKT 107/16 E

SEMIPACK® 1

Thyristor Modules

SKKT 107/16 E

Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- UL recognized, file no. E63532

Typical Applications*

- DC motor control (e. g. for machine tools)
- AC motor soft starters
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

SKKT

Absolute Maximum Ratings				
Symbol	**Conditions**		**Values**	**Unit**
Chip				
$I_{T(AV)}$	sinus 180°	T_c = 85 °C	119	A
		T_c = 100 °C	91	A
I_{TSM}	10 ms	T_j = 25 °C	2250	A
		T_j = 130 °C	1900	A
i^2t	10 ms	T_j = 25 °C	25313	A^2s
		T_j = 130 °C	18050	A^2s
V_{RSM}			1700	V
V_{RRM}			1600	V
V_{DRM}			1600	V
$(di/dt)_{cr}$	T_j = 130 °C		140	A/μs
$(dv/dt)_{cr}$	T_j = 130 °C		1000	V/μs
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

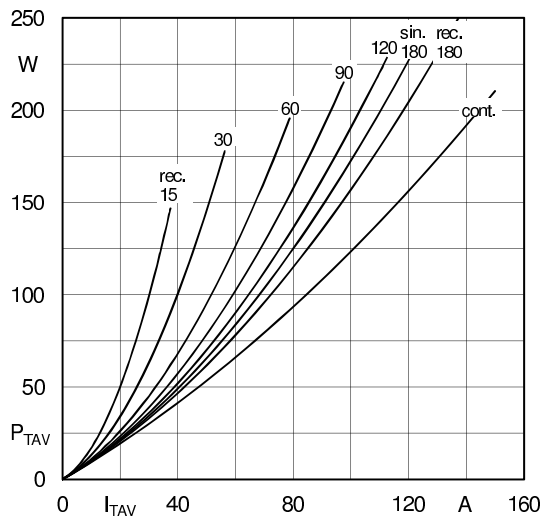| **Characteristics**						
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Unit**
Chip						
V_T	T_j = 25 °C, I_T = 300 A			1.6	1.75	V
$V_{T(TO)}$	T_j = 130 °C			0.8	0.9	V
r_T	T_j = 130 °C			2.80	3.35	mΩ
$I_{DD};I_{RD}$	T_j = 130 °C, $V_{DD} = V_{DRM}$; $V_{RD} = V_{RRM}$				20	mA
t_{gd}	T_j = 25 °C, I_G = 1 A, di_G/dt = 1 A/μs			1		μs
t_{gr}	$V_D = 0.67 * V_{DRM}$			2		μs
t_q	T_j = 130 °C			200		μs
I_H	T_j = 25 °C			150	250	mA
I_L	T_j = 25 °C, R_G = 33 Ω			300	600	mA
V_{GT}	T_j = 25 °C, d.c.		2.5			V
I_{GT}	T_j = 25 °C, d.c.		100			mA
V_{GD}	T_j = 130 °C, d.c.				0.25	V
I_{GD}	T_j = 130 °C, d.c.				4	mA
$R_{th(j-c)}$	continuous DC	per chip			0.190	K/W
		per module			0.095	K/W
$R_{th(j-c)}$	sin. 180°	per chip			0.200	K/W
		per module			0.100	K/W
$R_{th(j-c)}$	rec. 120°	per chip			0.210	K/W
		per module			0.105	K/W
Module						
$R_{th(c-s)}$	chip			0.22		K/W
	module			0.11		K/W
M_s	to heatsink M5		4.25		5.75	Nm
M_t	to terminals M5		2.55		3.45	Nm
a					5 * 9,81	m/s²
w				75		g

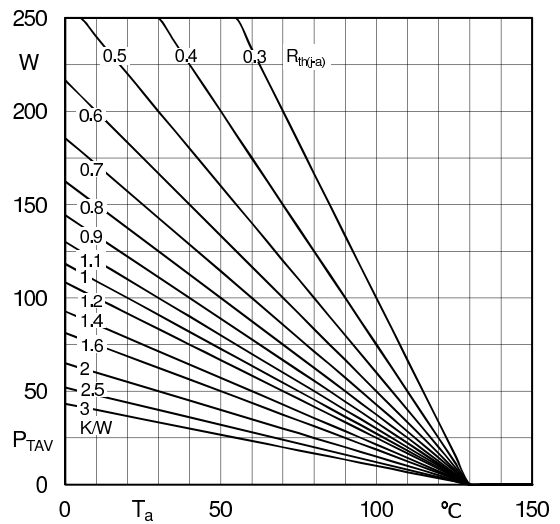Fig. 1L: Power dissipation per thyristor/diode vs. on-state current

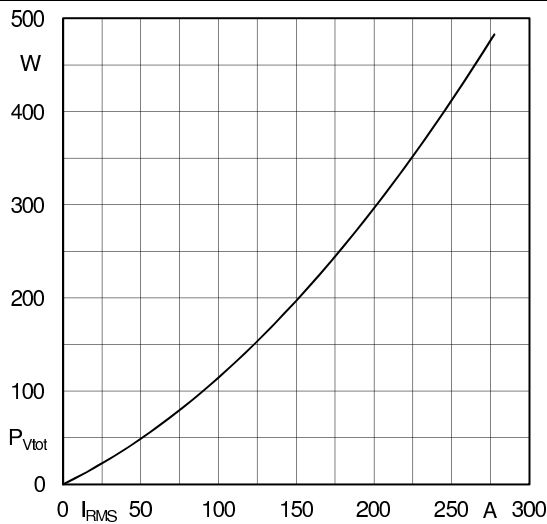Fig. 1R: Max. power dissipation per chip vs. ambient temperature

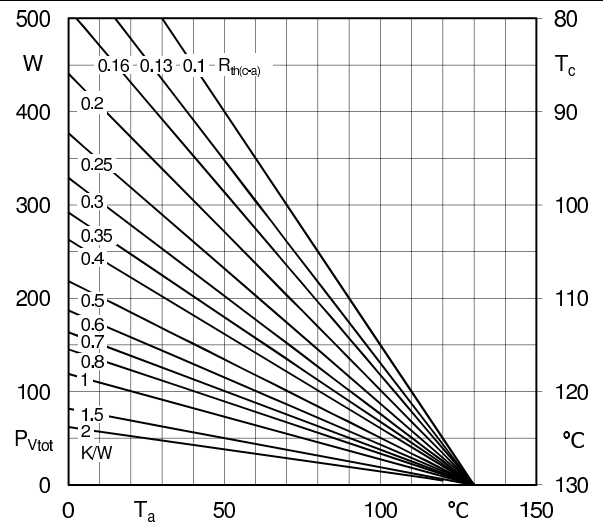Fig. 2L: Max. power dissipation of one module vs. rms current

Fig. 2R: Max. power dissipation of one module vs. case temperature
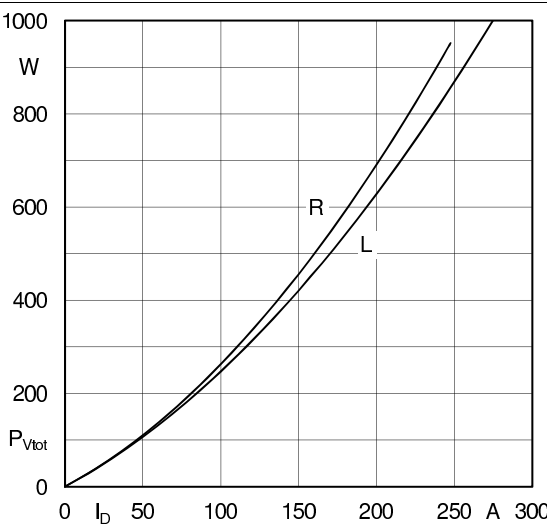
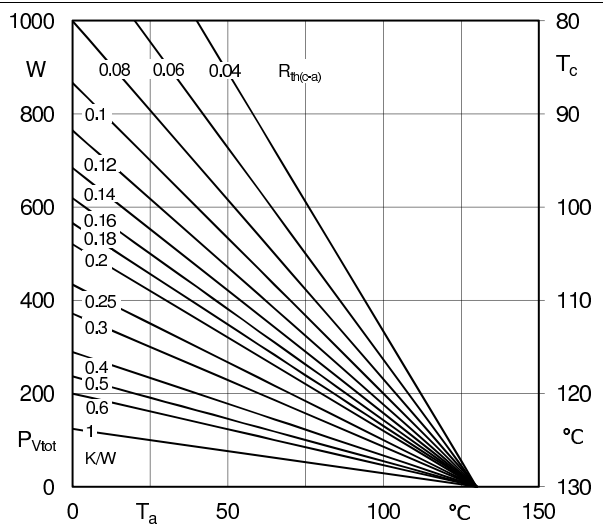Fig. 3L: Max. power dissipation of two modules vs. direct current

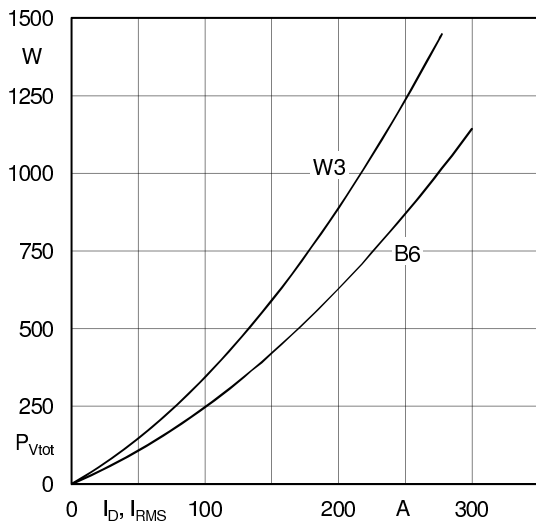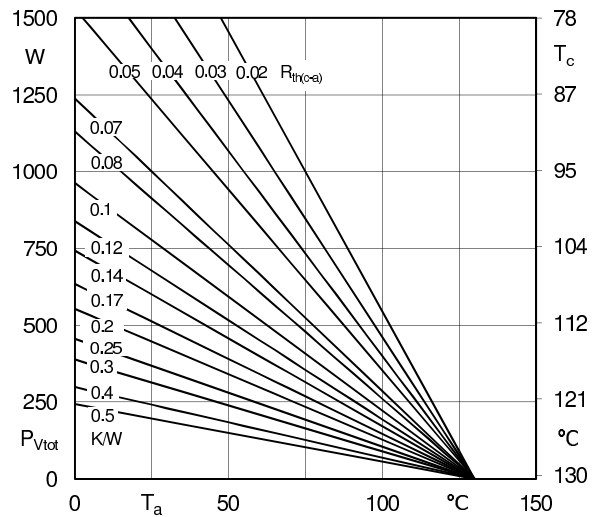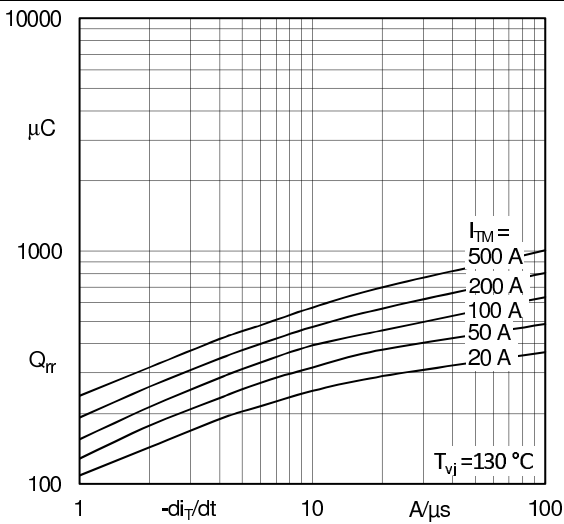Fig. 3R: Max. power dissipation of two modules vs. case temperature

Fig. 4L: Max. power dissipation of three modules vs. direct current

Fig. 4R: Max. power dissipation of three modules vs. case temperature

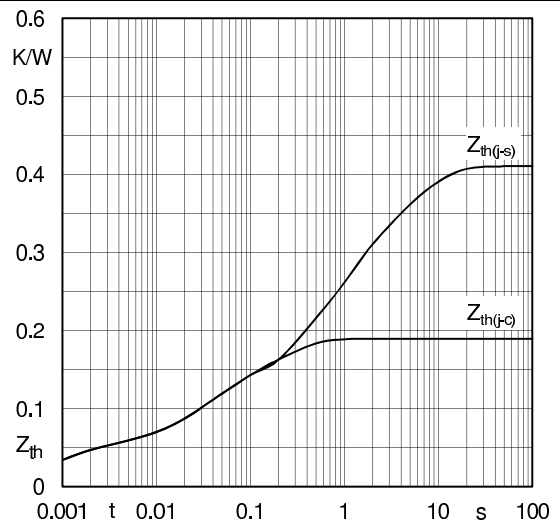Fig. 5: Recovered charge vs. current decrease
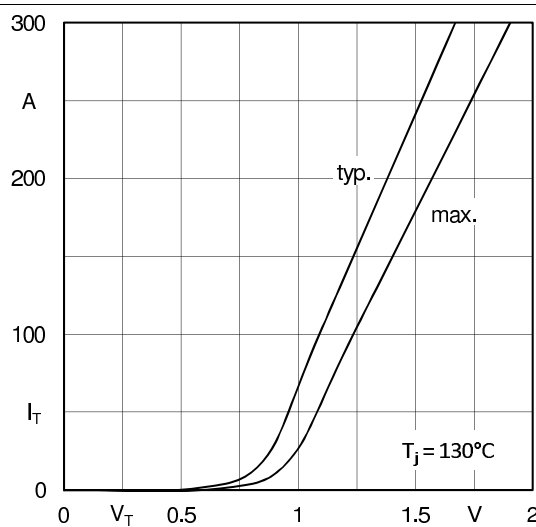

Fig. 6: Transient thermal impedance vs. time
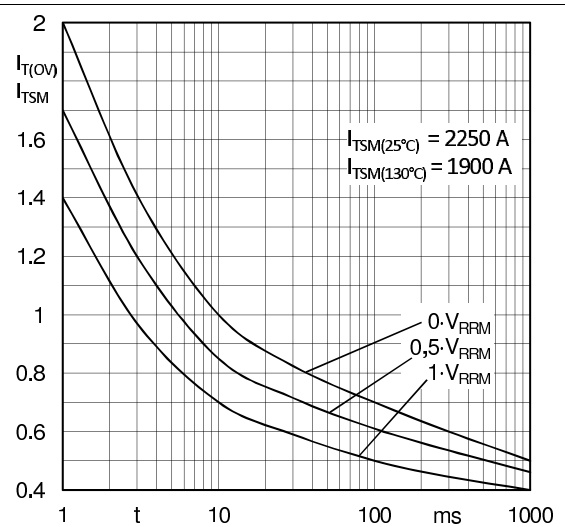

Fig. 7: On-state characteristics
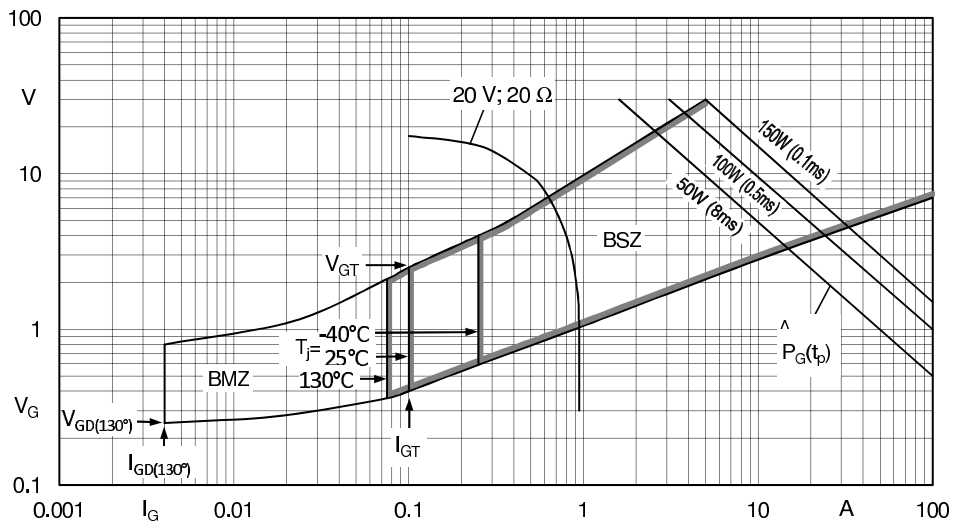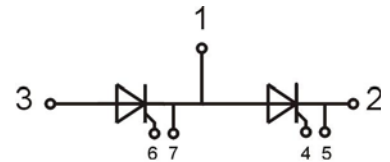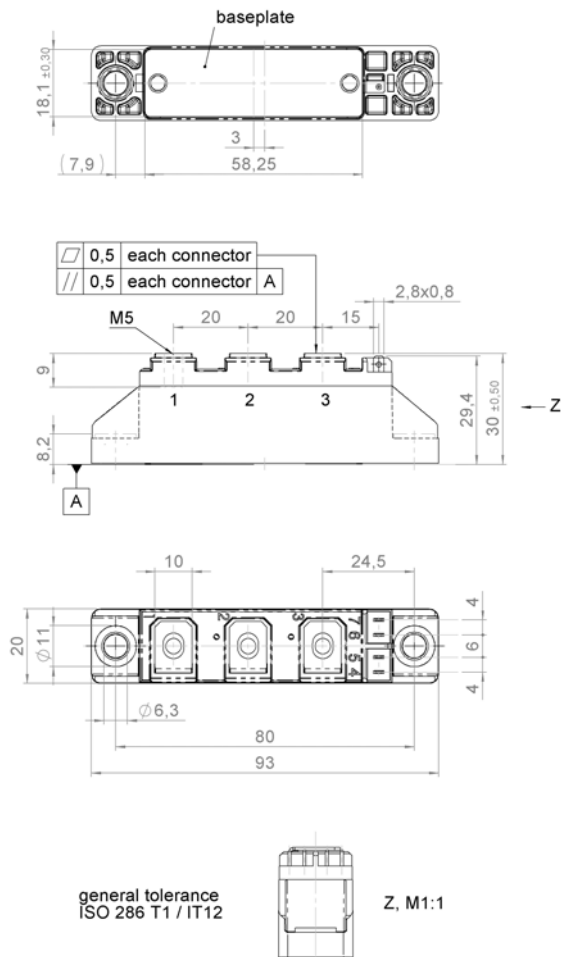

Fig. 8: Surge overload current vs. time

Fig. 9: Gate trigger characteristics

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

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