



Thyristor Modules

SKKT 58/16 E

Features

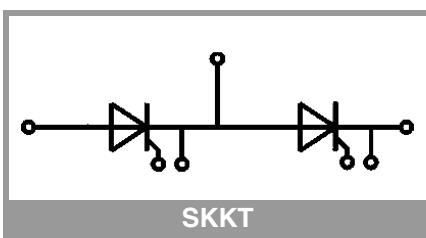
- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- UL recognized, file no. E63532

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)

Absolute Maximum Ratings		Values		Unit
Symbol	Conditions			
Chip				
$I_{T(AV)}$	sinus 180°	$T_c = 85^\circ\text{C}$	55	A
		$T_c = 100^\circ\text{C}$	41	A
I_{TRMS}	continuous operation		90	A
I_{TSM}	10 ms	$T_j = 25^\circ\text{C}$	1500	A
		$T_j = 130^\circ\text{C}$	1200	A
i^2t	10 ms	$T_j = 25^\circ\text{C}$	11250	A^2s
		$T_j = 130^\circ\text{C}$	7200	A^2s
V_{RSM}			1700	V
V_{RRM}			1600	V
V_{DRM}			1600	V
$(di/dt)_{cr}$	$T_j = 130^\circ\text{C}$		140	$\text{A}/\mu\text{s}$
$(dv/dt)_{cr}$	$T_j = 130^\circ\text{C}$		1000	$\text{V}/\mu\text{s}$
T_j			-40 ... 130	$^\circ\text{C}$
Module				
T_{stg}			-40 ... 125	$^\circ\text{C}$
V_{isol}	a.c.; 50 Hz; r.m.s.	1 min	3000	V
		1 s	3600	V

Characteristics		min.	typ.	max.	Unit
Symbol	Conditions				
Chip					
V_T	$T_j = 25^\circ\text{C}$, $I_T = 180\text{ A}$		1.5	1.75	V
$V_{T(TO)}$	$T_j = 130^\circ\text{C}$		0.85	1	V
r_T	$T_j = 130^\circ\text{C}$		4.00	4.8	$\text{m}\Omega$
$I_{DD}:I_{RD}$	$T_j = 130^\circ\text{C}$, $V_{DD} = V_{DRM}$; $V_{RD} = V_{RRM}$			20	mA
t_{gd}	$T_j = 25^\circ\text{C}$, $I_G = 1\text{ A}$, $di_G/dt = 1\text{ A}/\mu\text{s}$		1		μs
t_{gr}	$V_D = 0.67 * V_{DRM}$		2		μs
t_q	$T_j = 130^\circ\text{C}$		170		μs
I_H	$T_j = 25^\circ\text{C}$		150	250	mA
I_L	$T_j = 25^\circ\text{C}$, $R_G = 33\Omega$		300	600	mA
V_{GT}	$T_j = 25^\circ\text{C}$, d.c.		2.5		V
I_{GT}	$T_j = 25^\circ\text{C}$, d.c.		100		mA
V_{GD}	$T_j = 130^\circ\text{C}$, d.c.			0.25	V
I_{GD}	$T_j = 130^\circ\text{C}$, d.c.			4	mA
$R_{th(j-c)}$	continuous DC	per chip		0.47	K/W
		per module		0.235	K/W
$R_{th(j-c)}$	sin. 180°	per chip		0.49	K/W
		per module		0.245	K/W
$R_{th(j-c)}$	rec. 120°	per chip		0.51	K/W
		per module		0.255	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/s^2
w			75		g



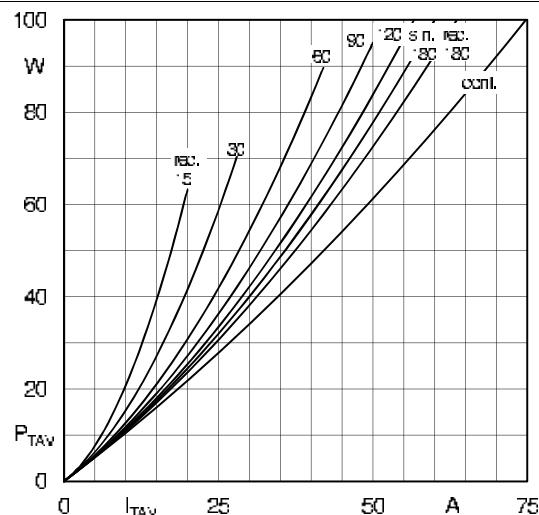


Fig. 1L: Power dissipation per thyristor/diode vs. on-state current

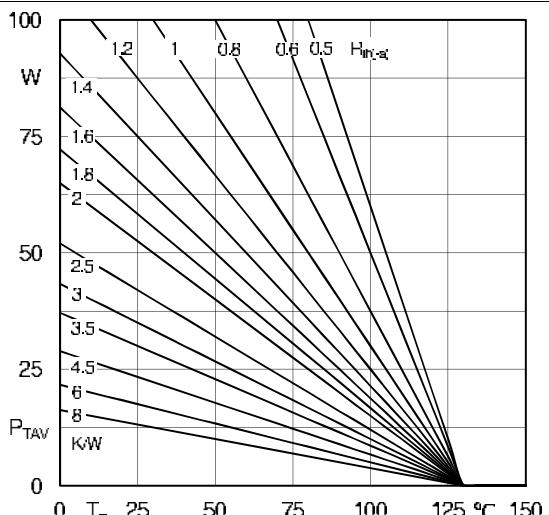


Fig. 1R: Max. power dissipation per chip vs. ambient temperature

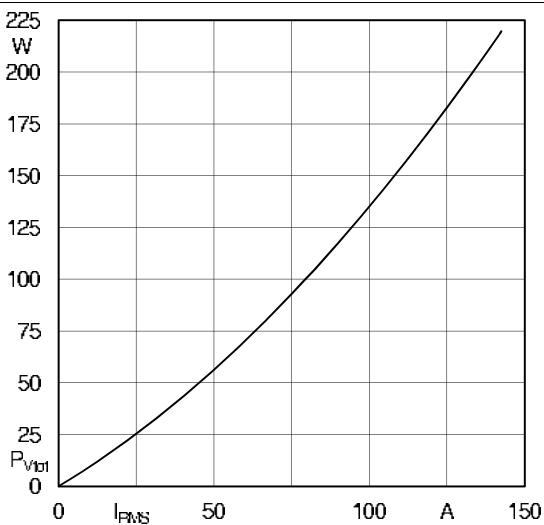


Fig. 2L: Max. power dissipation of one module vs. rms current

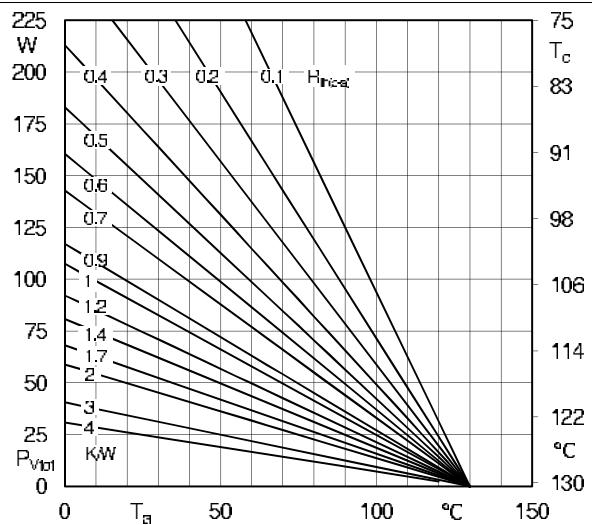


Fig. 2R: Max. power dissipation of one module vs. case temperature

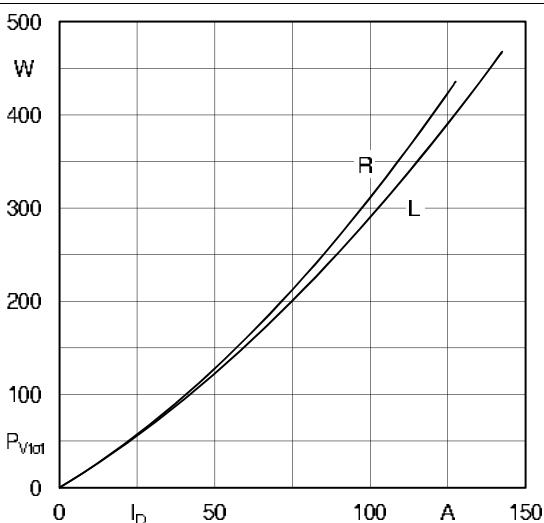


Fig. 3L: Max. power dissipation of two modules vs. direct current

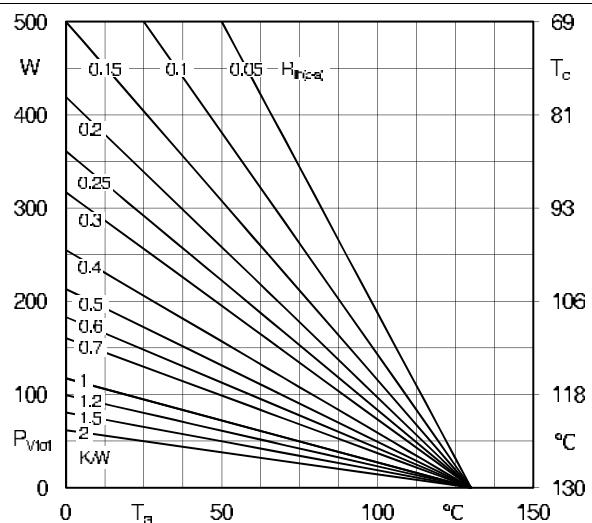


Fig. 3R: Max. power dissipation of two modules vs. case temperature

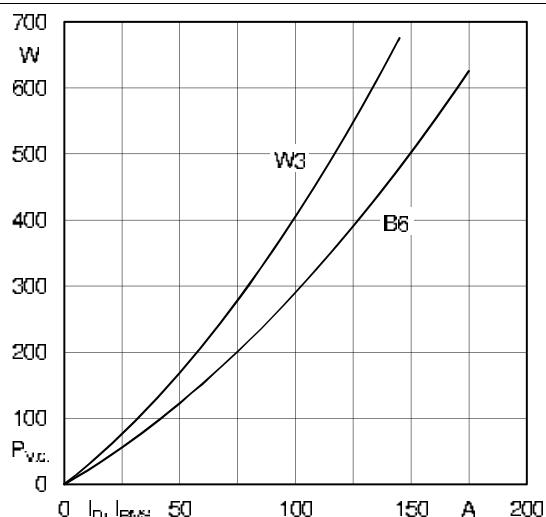
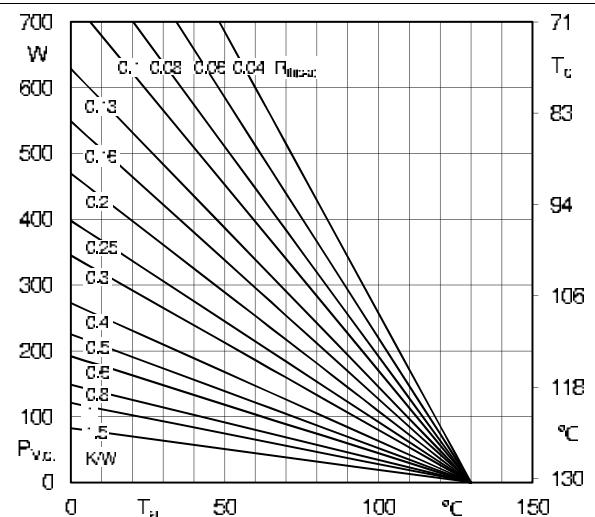


Fig. 4L: Max. power dissipation of three modules vs. direct current



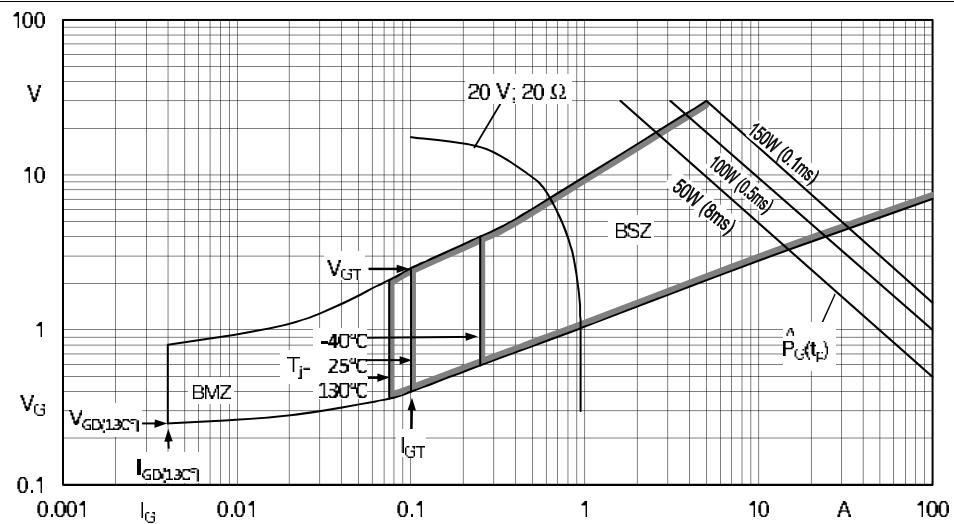
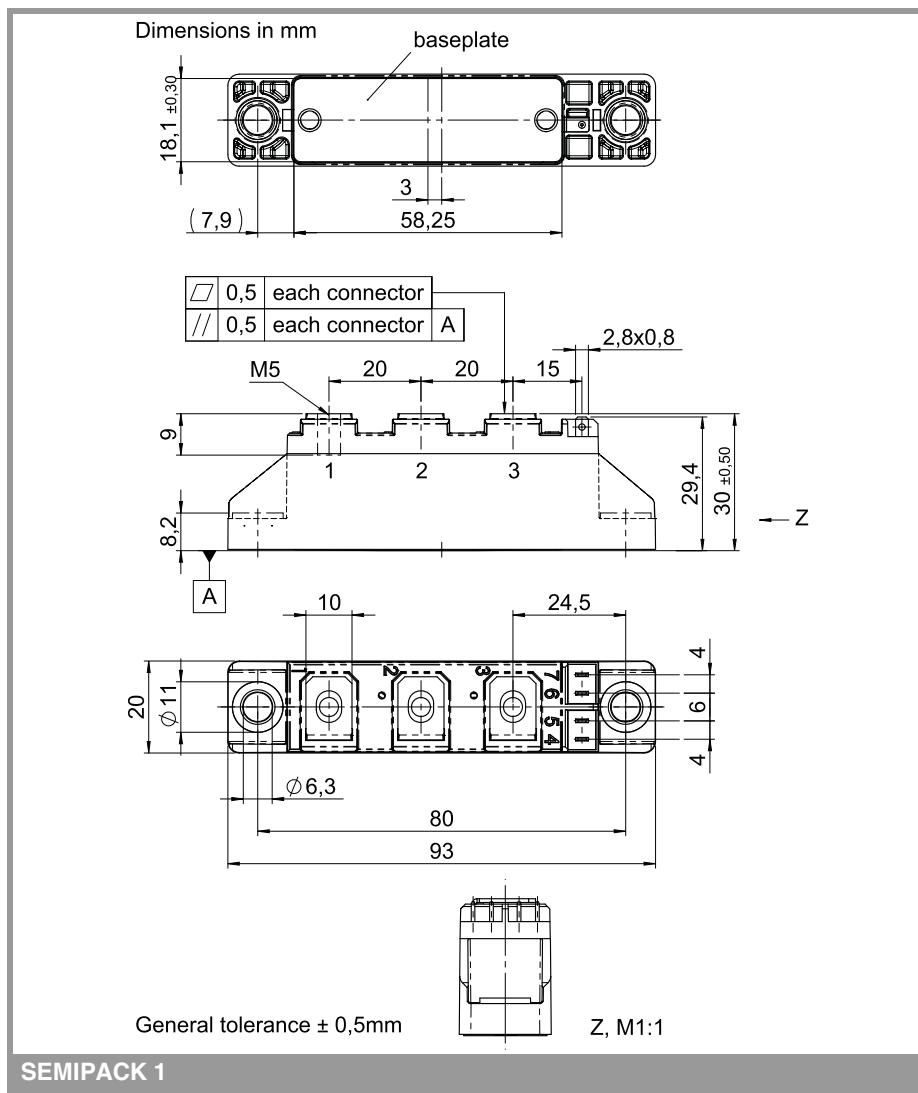


Fig. 9: Gate trigger characteristics



This is an electronic copy.

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

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