



Thyristor Modules

SKET 741/22 E

Features

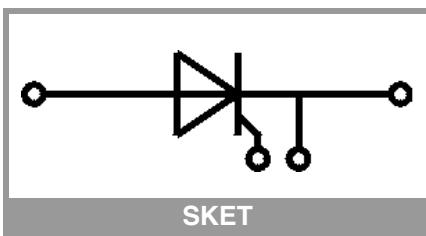
- Precious metal pressure contacts for high reliability
- Thyristor with amplifying gate
- UL recognized, file no. E 63 532

Typical Applications*

- DC motor control (e. g. for machine tools)
- Temperature control (e. g. for ovens, chemical processes)
- Softstart application

Absolute Maximum Ratings		Values		Unit
Symbol	Conditions			
Chip				
$I_{T(AV)}$	sinus 180°	$T_c = 85^\circ\text{C}$	819	A
		$T_c = 100^\circ\text{C}$	564	A
I_{TRMS}	continuous operation		1500	A
I_{TSM}	10 ms	$T_j = 25^\circ\text{C}$	30000	A
		$T_j = 125^\circ\text{C}$	26500	A
i^2t	10 ms	$T_j = 25^\circ\text{C}$	4500000	A^2s
		$T_j = 125^\circ\text{C}$	3500000	A^2s
V_{RSM}			2300	V
V_{RRM}			2200	V
V_{DRM}			2200	V
$(di/dt)_{cr}$			200	$\text{A}/\mu\text{s}$
$(dv/dt)_{cr}$			1000	$\text{V}/\mu\text{s}$
T_j			-40 ... 125	$^\circ\text{C}$
Module				
T_{stg}			-40 ... 130	$^\circ\text{C}$
V_{isol}	a.c.; 50 Hz; r.m.s.	1 min	3000	V
		1 s	3600	V

Characteristics				
Symbol	Conditions	min.	typ.	max.
Chip				
V_T	$T_j = 125^\circ\text{C}$, $I_T = 3000 \text{ A}$		1.51	V
$V_{T(TO)}$	$T_j = 125^\circ\text{C}$		0.82	V
r_T	$T_j = 125^\circ\text{C}$		0.17	$\text{m}\Omega$
$I_{DD}:I_{RD}$	$T_j = 125^\circ\text{C}$, $V_{DD} = V_{DRM}$; $V_{RD} = V_{RRM}$		150	mA
t_{gd}	$T_j = 25^\circ\text{C}$, $I_G = 1 \text{ A}$, $di_G/dt = 1 \text{ A}/\mu\text{s}$		4	μs
t_q			350	μs
I_H	$T_j = 25^\circ\text{C}$		500	mA
I_L	$T_j = 25^\circ\text{C}$, $R_G = 33 \Omega$		2500	mA
V_{GT}	$T_j = 25^\circ\text{C}$, d.c.		2.2	V
I_{GT}	$T_j = 25^\circ\text{C}$, d.c.		250	mA
V_{GD}	$T_j = 125^\circ\text{C}$, d.c.		0.25	V
I_{GD}	$T_j = 125^\circ\text{C}$, d.c.		10	mA
$R_{th(j-c)}$	cont.	per chip	0.0405	K/W
		per module	0.0405	K/W
$R_{th(j-c)}$	sin. 180°	per chip	0.042	K/W
		per module	0.042	K/W
$R_{th(j-c)}$	rec. 120°	per chip	0.043	K/W
		per module	0.043	K/W
Module				
$R_{th(c-s)}$	chip		0.015	K/W
	module		0.015	K/W
M_s	to heatsink M6	5.1	6.9	Nm
M_t	to terminal M12	16.2	19.8	Nm
a			5 * 9,81	m/s^2
w			1950	g



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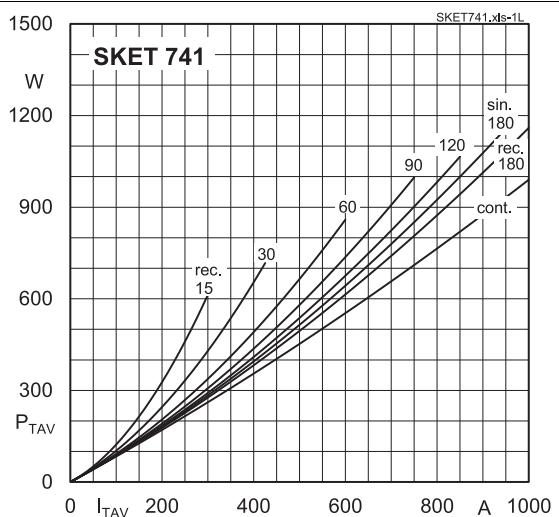


Fig. 1L: Power dissipation per thyristor vs. on-state current

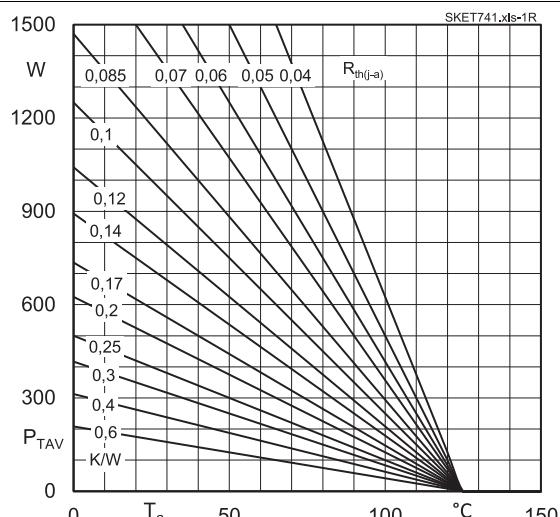


Fig. 1R: Power dissipation per thyristor vs. ambient temperature

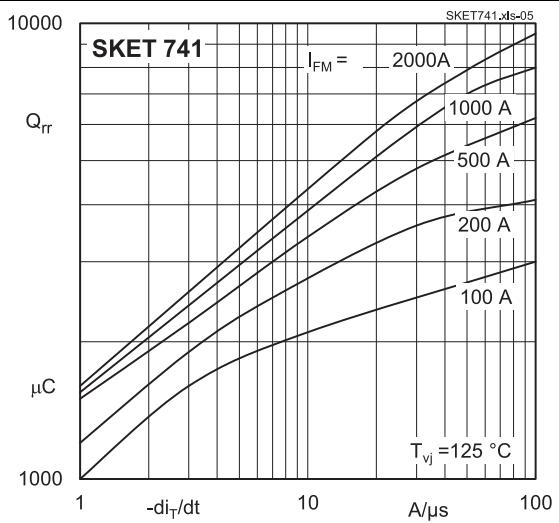


Fig. 5: Recovered charge vs. current decrease

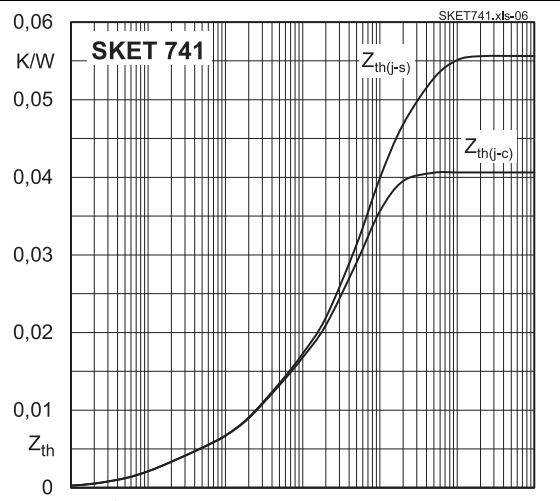


Fig. 6: Transient thermal impedance vs. time

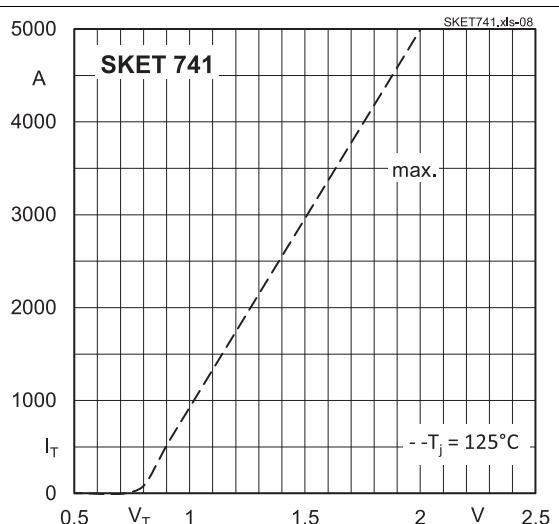


Fig. 7: On-state characteristics

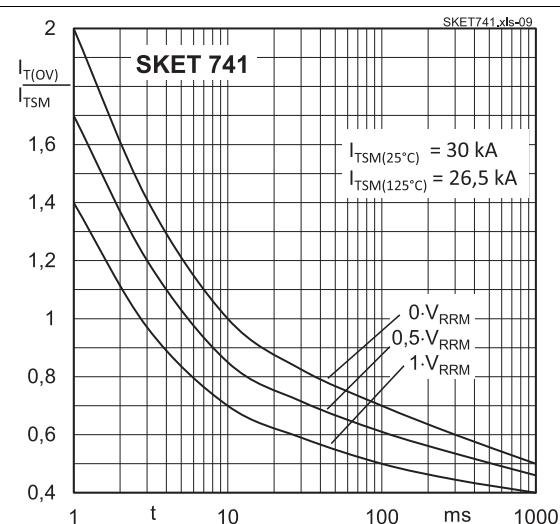
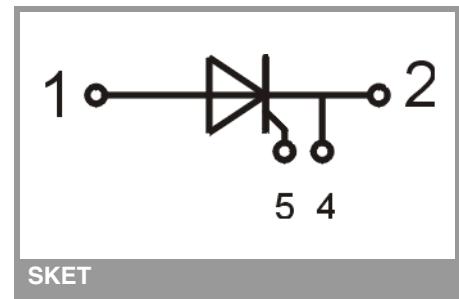
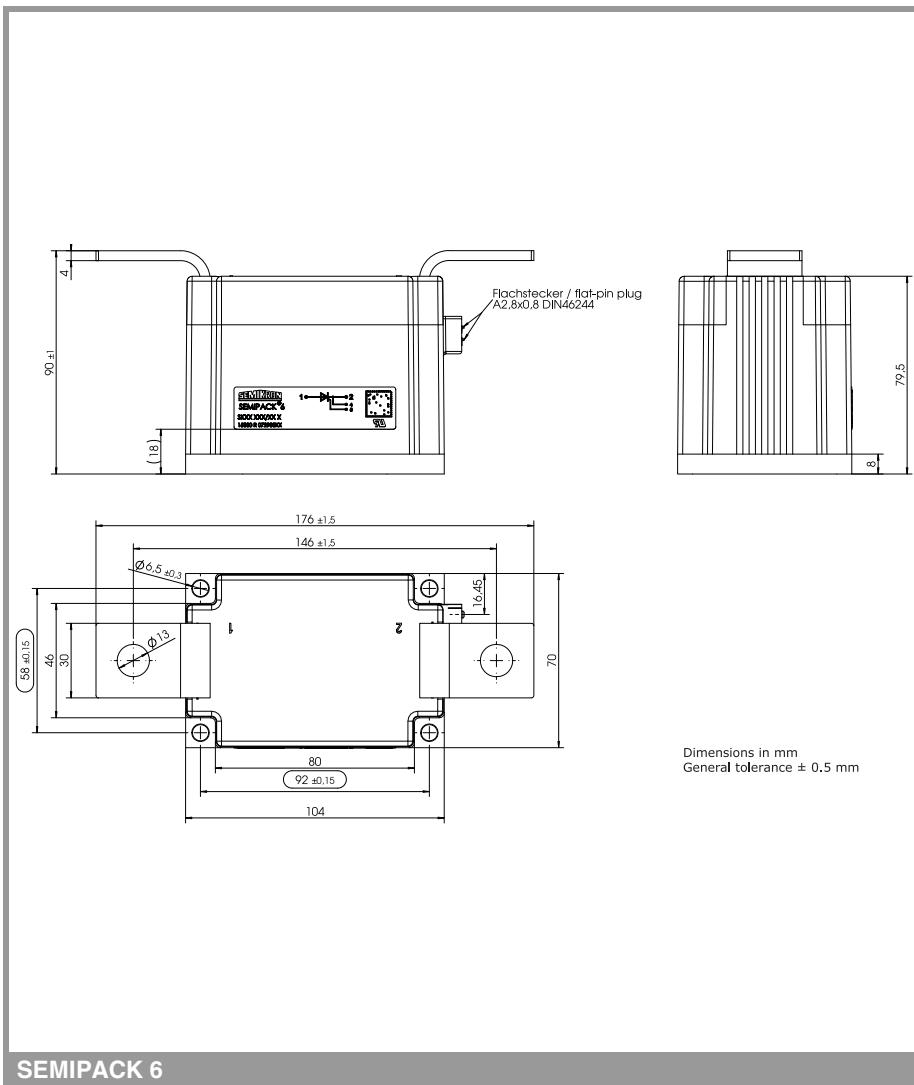
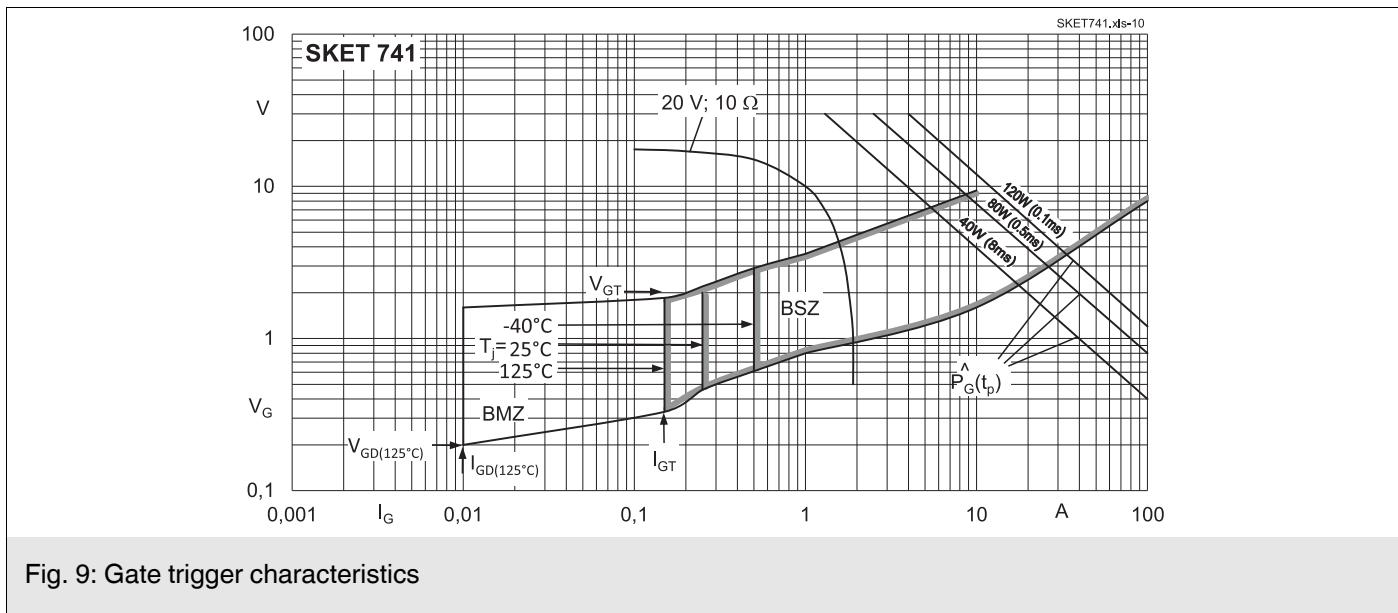


Fig. 8: Surge overload current vs. time



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

*IMPORTANT INFORMATION AND WARNINGS

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