

SKET 741/22 E



SEMIPACK® 6

Thyristor Modules

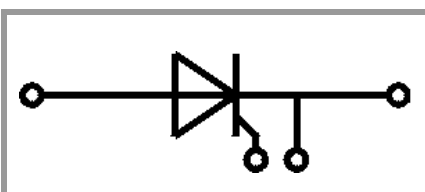
SKET 741/22 E

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



SKET

Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
Chip				
$I_{T(AV)}$	sinus 180°	$T_c = 85\text{ °C}$	819	A
		$T_c = 100\text{ °C}$	564	A
I_{TRMS}	continuous operation		1500	A
I_{TSM}	10 ms	$T_j = 25\text{ °C}$	30000	A
		$T_j = 125\text{ °C}$	26500	A
i^2t	10 ms	$T_j = 25\text{ °C}$	4500000	A ² s
		$T_j = 125\text{ °C}$	3500000	A ² s
V_{RSM}			2300	V
V_{RRM}			2200	V
V_{DRM}			2200	V
$(di/dt)_{cr}$			200	A/μs
$(dv/dt)_{cr}$			1000	V/μs
T_j			-40 ... 125	°C
Module				
T_{stg}			-40 ... 130	°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	$T_j = 125\text{ °C}$, $I_T = 3000\text{ A}$				1.51	V
$V_{T(TO)}$	$T_j = 125\text{ °C}$				0.82	V
r_T	$T_j = 125\text{ °C}$				0.17	mΩ
$I_{DD}; I_{RD}$	$T_j = 125\text{ °C}$, $V_{DD} = V_{DRM}$; $V_{RD} = V_{RRM}$				150	mA
t_{gd}	$T_j = 25\text{ °C}$, $I_G = 1\text{ A}$, $di_G/dt = 1\text{ A/μs}$				4	μs
t_q				350		μs
I_H	$T_j = 25\text{ °C}$				500	mA
I_L	$T_j = 25\text{ °C}$, $R_G = 33\text{ Ω}$				2500	mA
V_{GT}	$T_j = 25\text{ °C}$, d.c.		2.2			V
I_{GT}	$T_j = 25\text{ °C}$, d.c.		250			mA
V_{GD}	$T_j = 125\text{ °C}$, d.c.				0.25	V
I_{GD}	$T_j = 125\text{ °C}$, 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

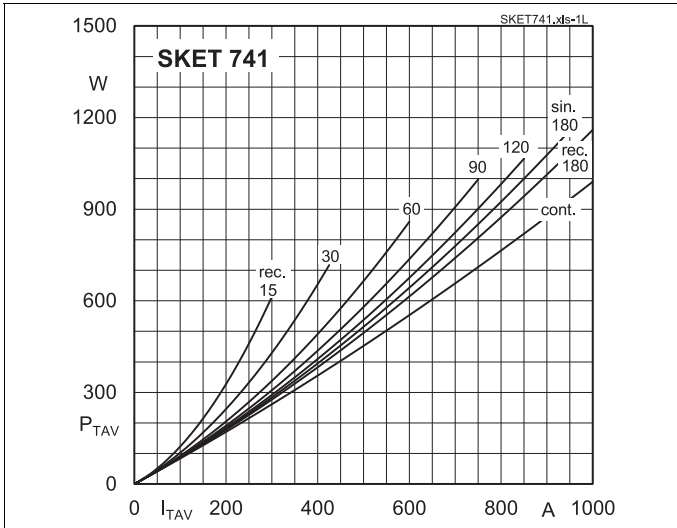


Fig. 1L: Power dissipation per thyristor vs. on-state current

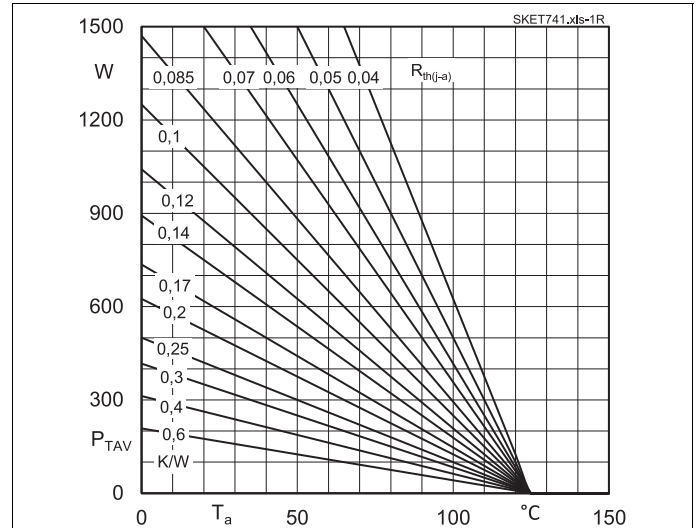


Fig. 1R: Power dissipation per thyristor vs. ambient temperature

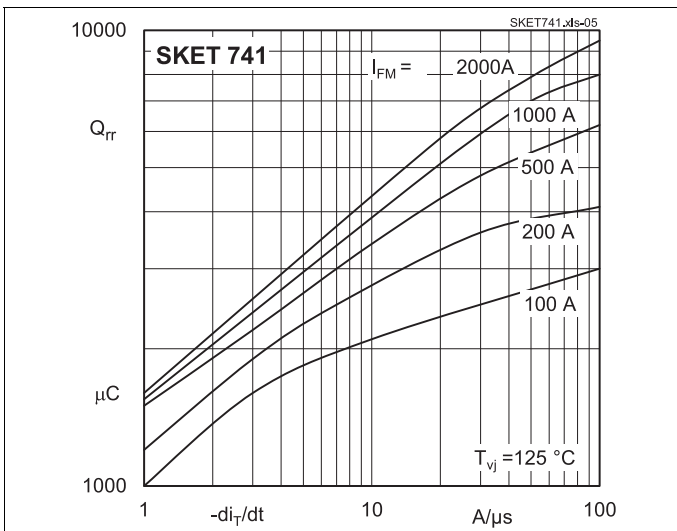


Fig. 5: Recovered charge vs. current decrease

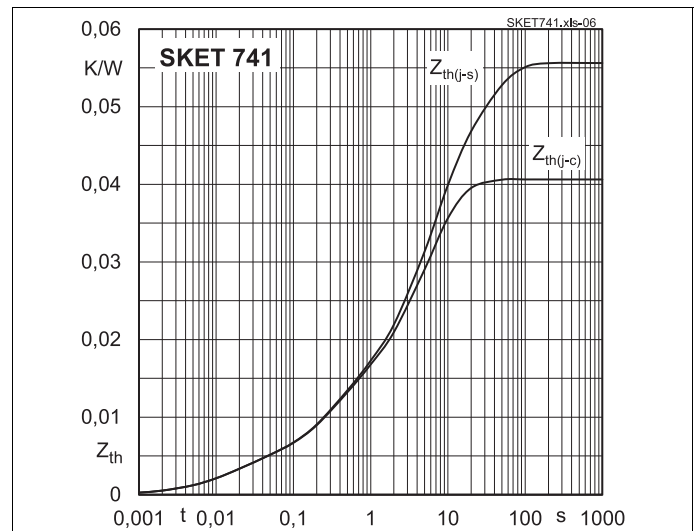


Fig. 6: Transient thermal impedance vs. time

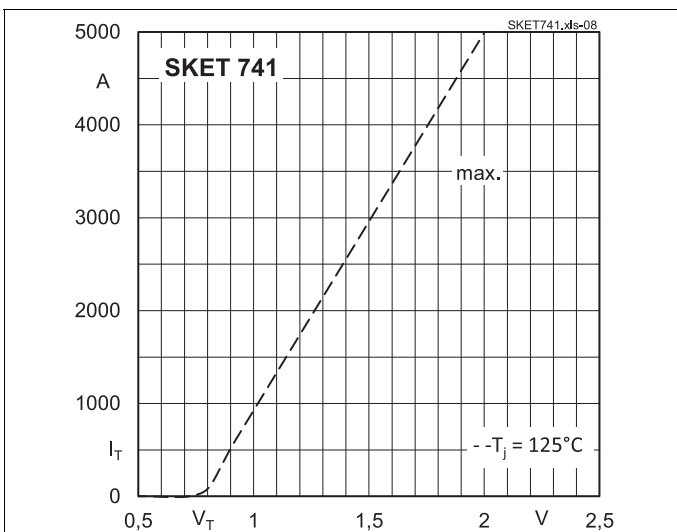


Fig. 7: On-state characteristics

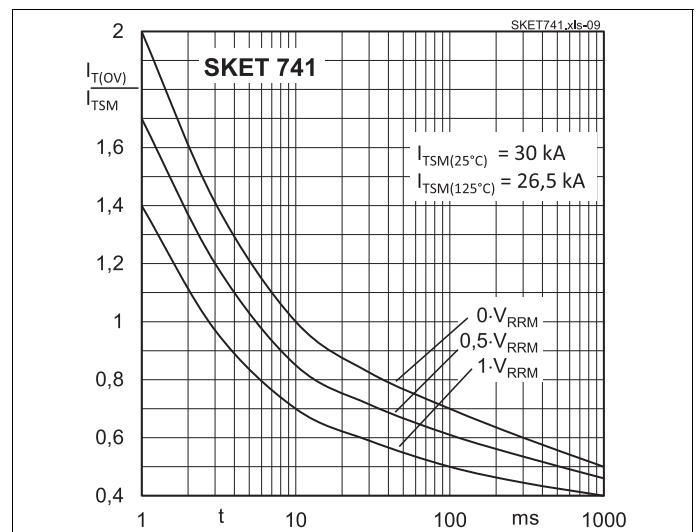


Fig. 8: Surge overload current vs. time

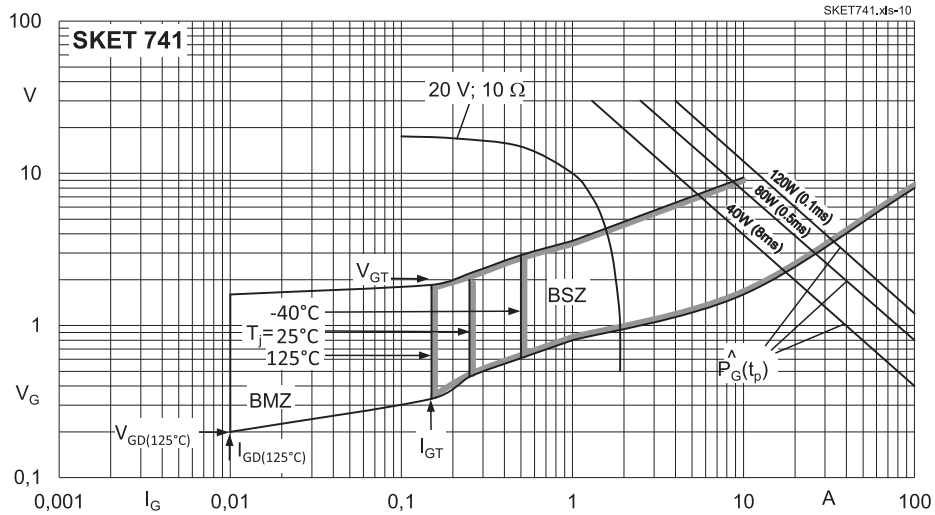
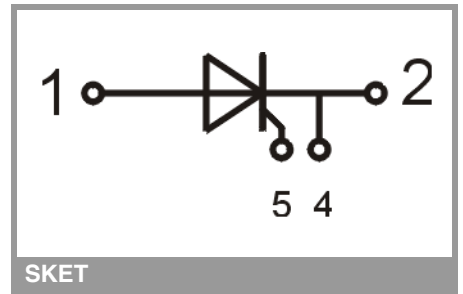
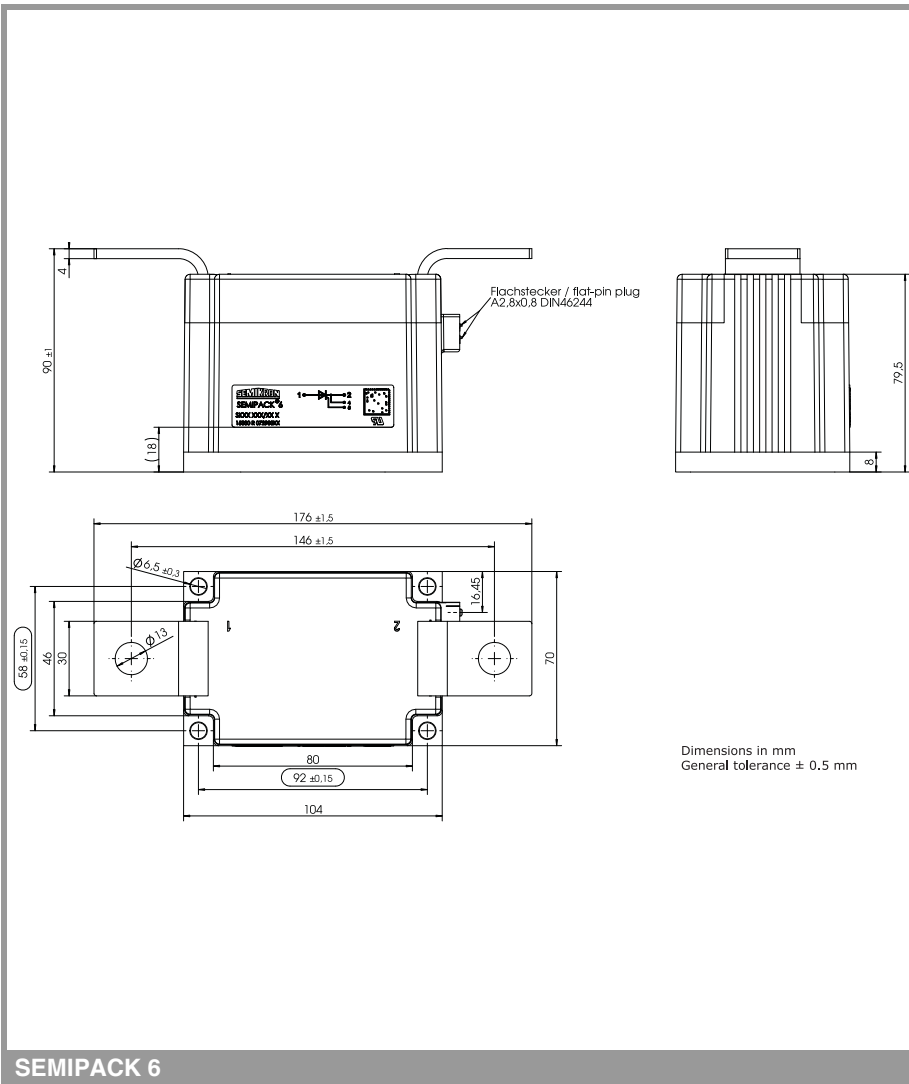


Fig. 9: Gate trigger characteristics



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

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