

SKET 741/22 E



SEMIPACK® 6

Thyristor Modules

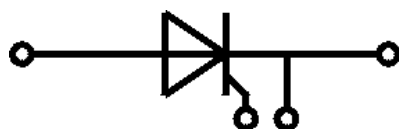
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Features

- 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



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Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
Chip				
I _{T(AV)}	sinus 180°	T _c = 85 °C	819	A
		T _c = 100 °C	564	A
I _{TRMS}	continuous operation		1500	A
I _{TSM}	10 ms	T _j = 25 °C	30000	A
		T _j = 125 °C	26500	A
i ² t	10 ms	T _j = 25 °C	4500000	A ² s
		T _j = 125 °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 °C, I _T = 3000 A				1.51	V
V _{T(TO)}	T _J = 125 °C				0.82	V
r _T	T _J = 125 °C				0.17	mΩ
I _{DD} ;I _{RD}	T _J = 125 °C, V _{DD} = V _{DRM} ; V _{RD} = V _{RRM}				150	mA
t _{gd}	T _J = 25 °C, I _G = 1 A, di _G /dt = 1 A/μs				4	μs
t _q				350		μs
I _H	T _J = 25 °C				500	mA
I _L	T _J = 25 °C, R _G = 33 Ω				2500	mA
V _{GT}	T _J = 25 °C, d.c.		2.2			V
I _{GT}	T _J = 25 °C, d.c.		250			mA
V _{GD}	T _J = 125 °C, d.c.				0.25	V
I _{GD}	T _J = 125 °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

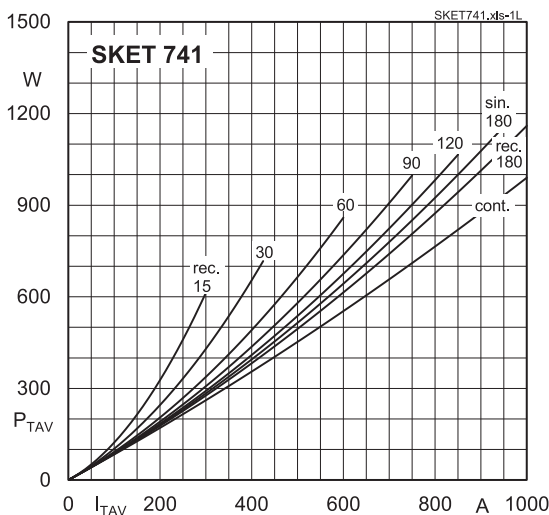


Fig. 1L: Power dissipation per thyristor vs. on-state current

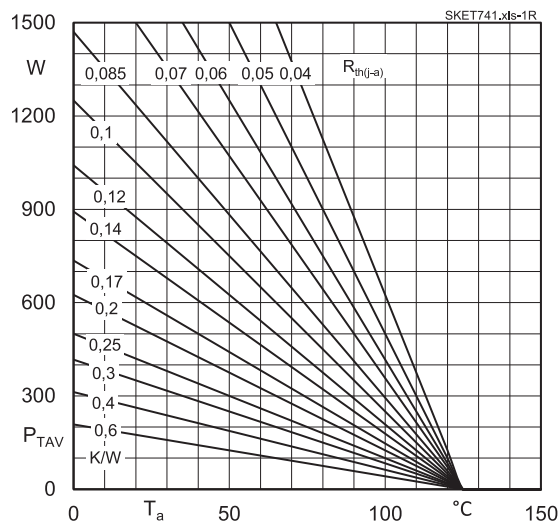


Fig. 1R: Power dissipation per thyristor vs. ambient temperature

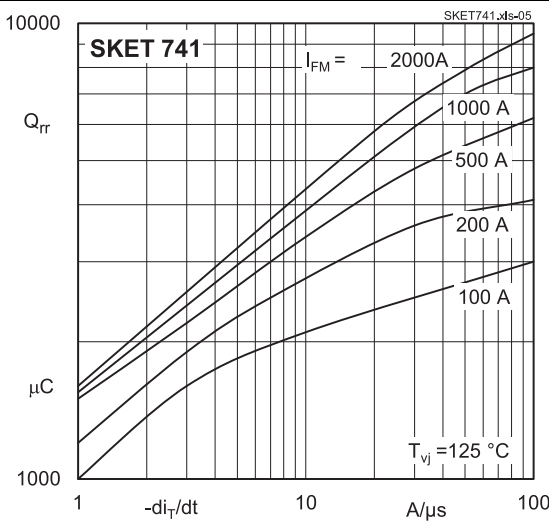


Fig. 5: Recovered charge vs. current decrease

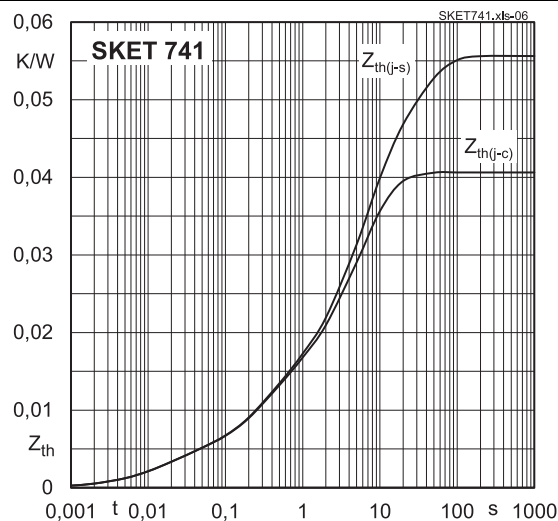


Fig. 6: Transient thermal impedance vs. time

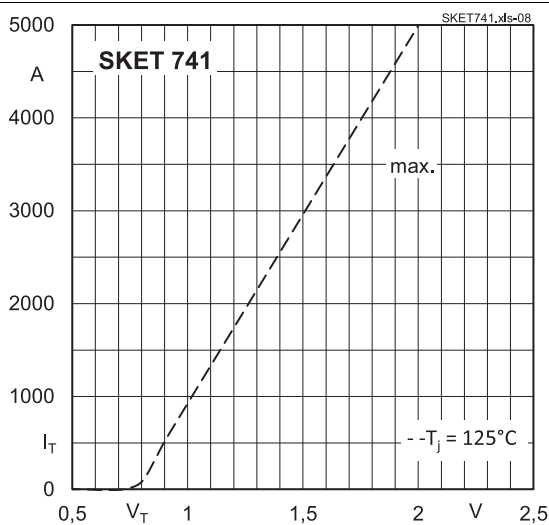


Fig. 7: On-state characteristics

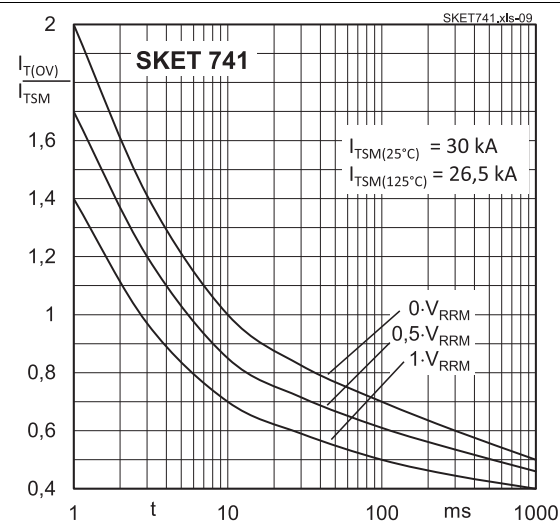


Fig. 8: Surge overload current vs. time

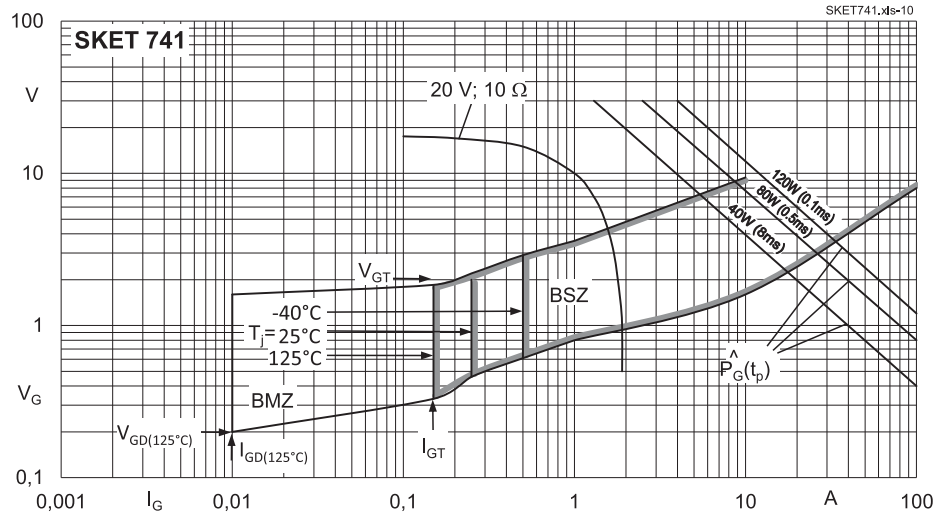
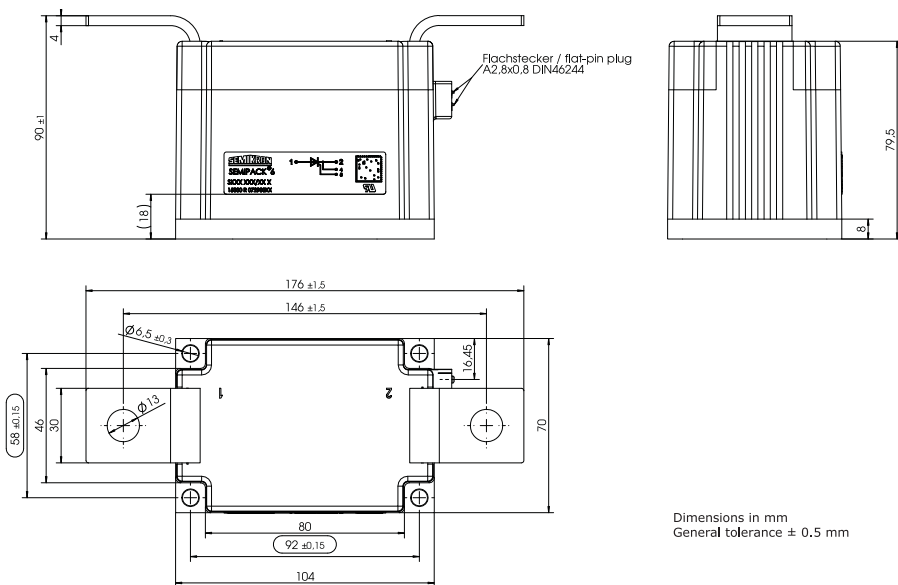
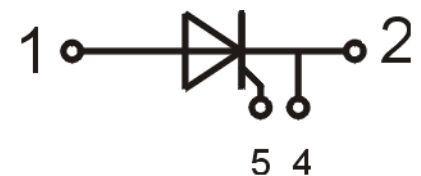


Fig. 9: Gate trigger characteristics



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

*IMPORTANT INFORMATION AND WARNINGS

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