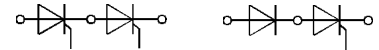
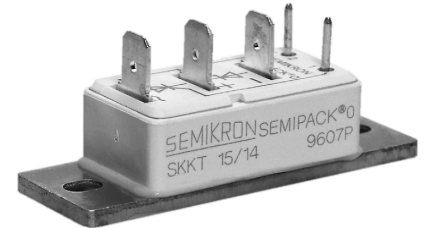


SEMIPACK® 0 Thyristor / Diode Modules

SKKT 15 SKKH 15



SKKT

SKKH

Features

- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- 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)
- Professional light dimming (studios, theaters)

V_{RSM}	V_{RRM} V_{DRM}	$(dv/dt)_{cr}$	I_{TRMS} (maximum values for continuous operation)	
			24 A ¹⁾ ; 30 A ²⁾	24 A ¹⁾ ; 45 A ²⁾
V	V	V/ μ s	I_{TAV} (sin. 180; $T_{case} = 65$ °C)	
			17,5 A ²⁾	17,5 A ²⁾
500	400	500	SKKT 15/04 D	SKKH 15/04 D
700	600	500	SKKT 15/06 D	SKKH 15/06 D
900	800	500	SKKT 15/08 D	SKKH 15/08 D
1300	1200	1000	SKKT 15/12 E	SKKH 15/12 E
1500	1400	1000	SKKT 15/14 E	SKKH 15/14 E
1700	1600	1000	SKKT 15/16 E	SKKH 15/16 E

Symbol	Conditions	SKKT 15 SKKH 15	Units
I_{TAV}	sin. 180; $T_{case} = 65$ °C $T_{case} = 75$ °C	17,5 ²⁾ 15 ¹⁾	A
I_D	B2/B6 $T_{amb} = 45$ °C; P 13A/100	14 / 17	A
I_{RMS}	W1/W3 $T_{amb} = 45$ °C; P 13A/100	21 / 3 x 12	A
I_{TSM}	$T_{vj} = 25$ °C; 10 ms $T_{vj} = 125$ °C; 10 ms	320 280	A
i^2t	$T_{vj} = 25$ °C; 8,3 ... 10 ms $T_{vj} = 125$ °C; 8,3 ... 10 ms	510 390	A ² s A ² s
t_{gd}	$T_{vj} = 25$ °C $I_G = 1$ A $di_G/dt = 1$ A/ μ s	1	μ s
t_{gr}	$V_D = 0,67 \cdot V_{DRM}$	1	μ s
$(di/dt)_{cr}$	$T_{vj} = 125$ °C	100	A/ μ s
t_q	$T_{vj} = 125$ °C	typ. 80	μ s
I_H	$T_{vj} = 25$ °C; typ./max.	80 / 150	mA
I_L	$T_{vj} = 25$ °C; $R_G = 33$ Ω ; typ./max.	150 / 300	mA
V_T	$T_{vj} = 25$ °C; $I_T = 75$ A	max. 2,45	V
$V_{T(TO)}$	$T_{vj} = 125$ °C	1,1	V
r_T	$T_{vj} = 125$ °C	20	m Ω
I_{DD} ; I_{RD}	$T_{vj} = 125$ °C; $V_{RD} = V_{RRM}$ $V_{DD} = V_{DRM}$	max. 8	mA
V_{GT}	$T_{vj} = 25$ °C; d.c.	3	V
I_{GT}	$T_{vj} = 25$ °C; d.c.	100	mA
V_{GD}	$T_{vj} = 125$ °C; d.c.	0,25	V
I_{GD}	$T_{vj} = 125$ °C; d.c.	5	mA
R_{thjh}	cont. } sin. 180 } per thyristor / rec. 120 } per module	1,6 / 0,8 1,7 / 0,9 1,8 / 0,9	$^{\circ}$ C/W $^{\circ}$ C/W $^{\circ}$ C/W
R_{thch}		0,2 / 0,1	$^{\circ}$ C/W
T_{vj}		- 40 ... + 125	$^{\circ}$ C
T_{stg}		- 40 ... + 125	$^{\circ}$ C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s/1 min	3600 / 3000	V~
M_1	Case to heatsink; SI (US) units	1,5 (13 lb. in.) \pm 15 % ³⁾	Nm
a		5 - 9,81	m/s ²
w	approx.	50	g
Case	→ page B 1 – 30	SKKT 15: A 1 SKKH 15: A 2	

1) Using tin plated connectors with flexible leads of 6 mm² for the main terminals

2) Flexible leads of 6 mm² soldered to the main terminals

3) See the assembly instructions

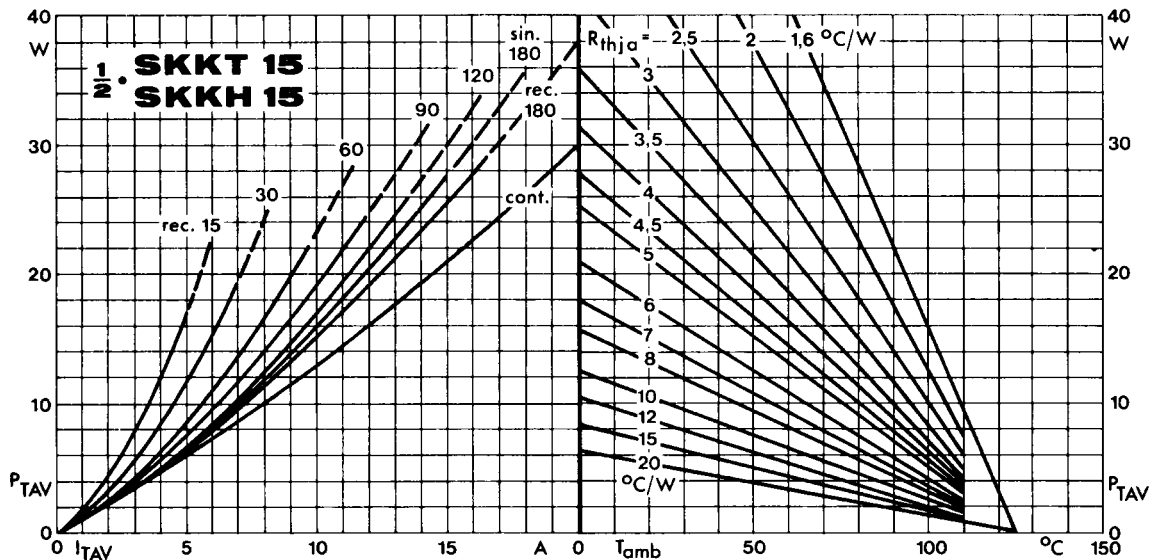


Fig. 1 Power dissipation per thyristor vs. on-state current and ambient temperature

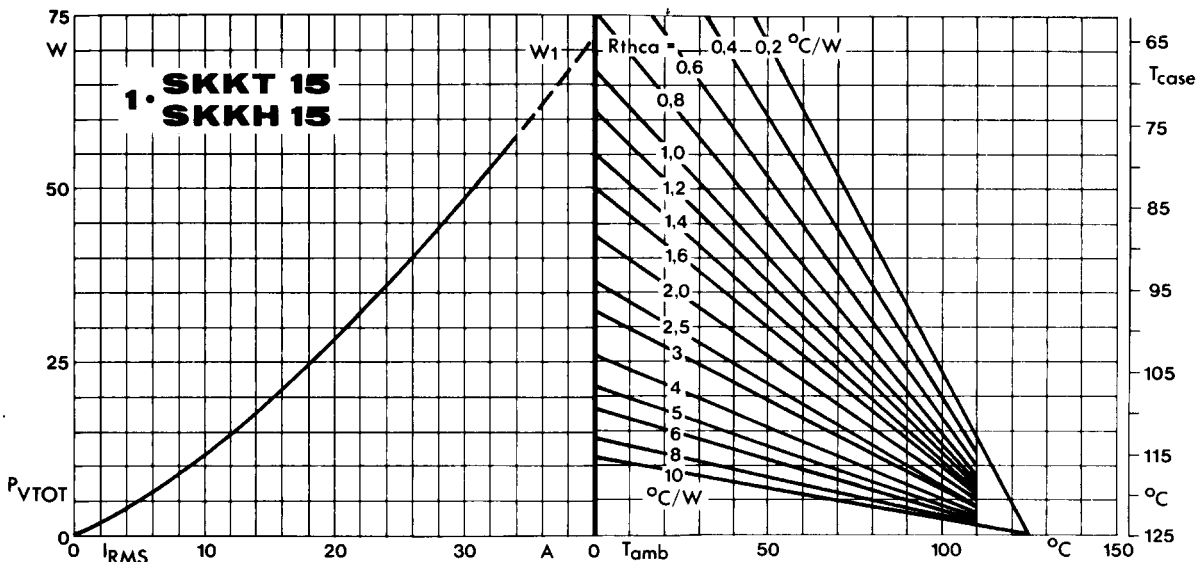


Fig. 2 Power dissipation per module vs. rms current and case temperature

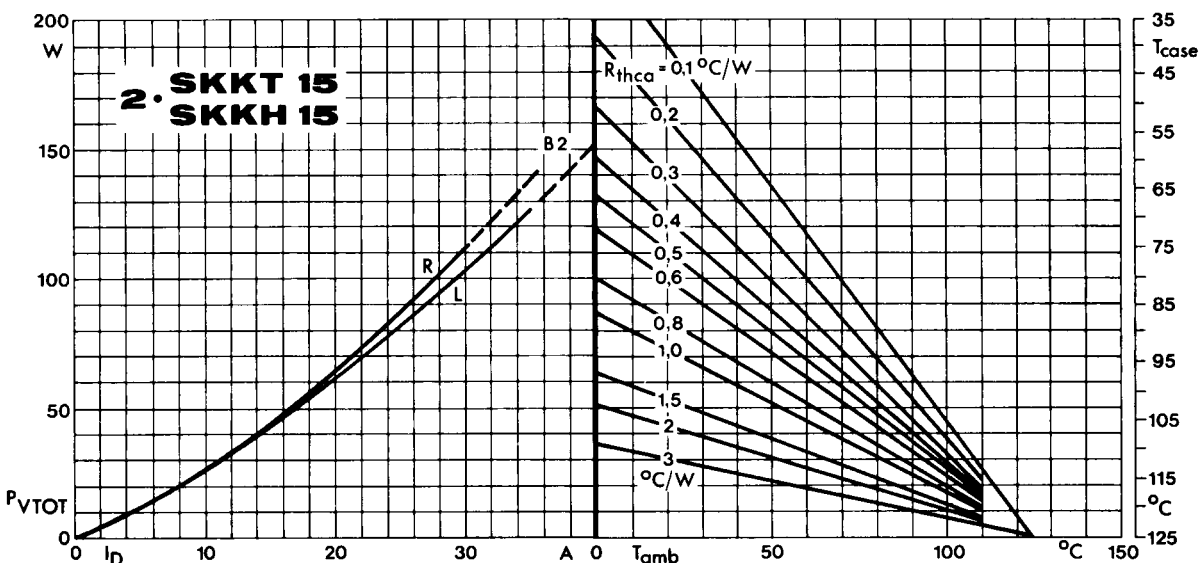


Fig. 3 Power dissipation of two modules vs. direct current and case temperature

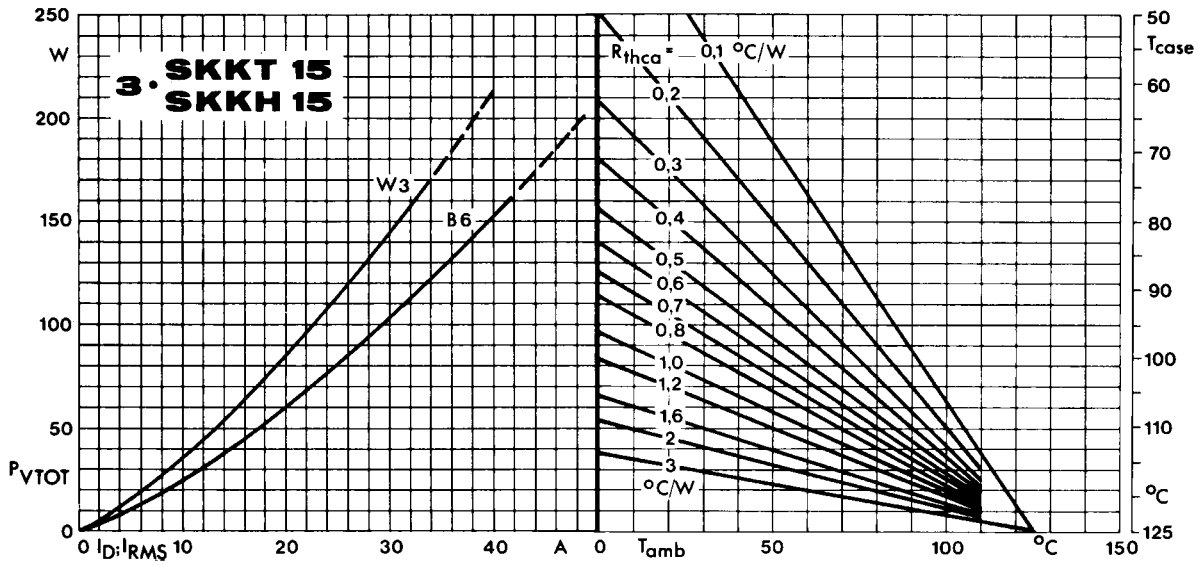


Fig. 4 Power dissipation of three modules vs. direct and rms current and case temperature

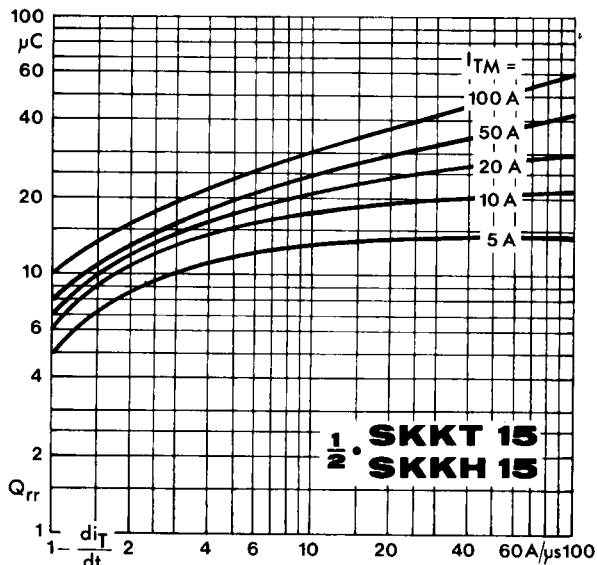


Fig. 5 Recovered charge vs. current decrease

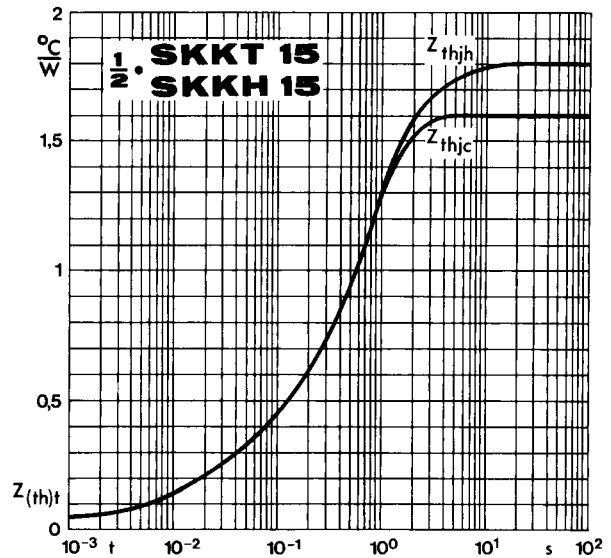


Fig. 6 Transient thermal impedance vs. time

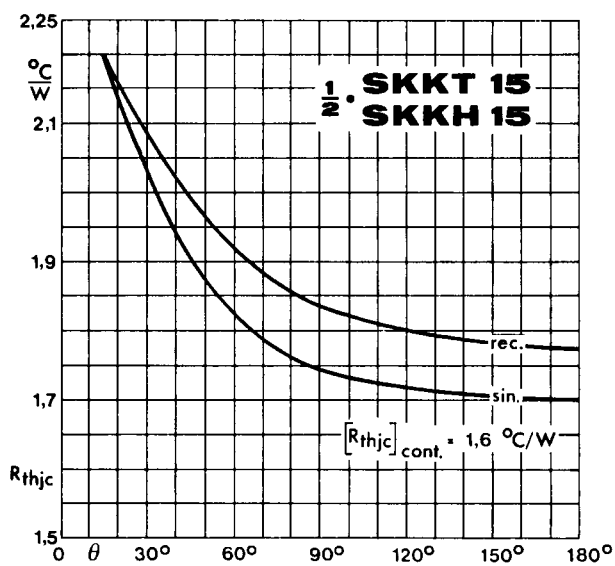


Fig. 7 Thermal resistance vs. conduction angle

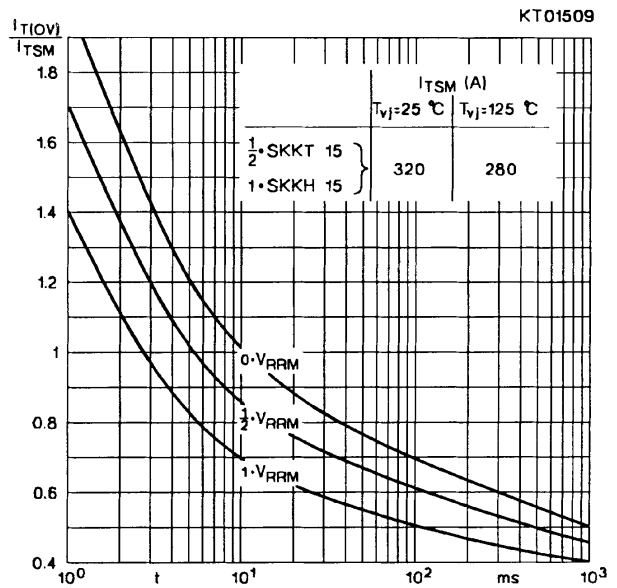
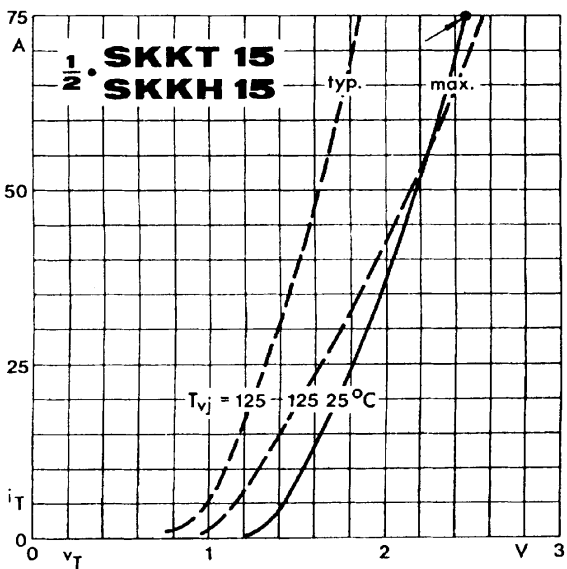


Fig. 8 On-state characteristics

Fig. 9 Surge overload current vs. time

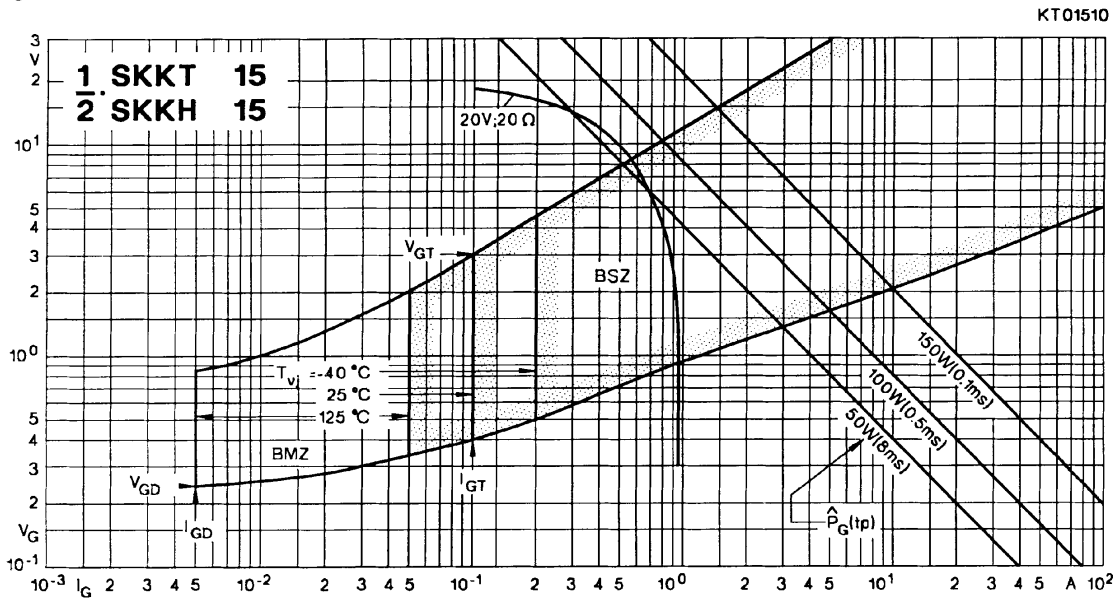


Fig. 10 Gate trigger characteristics

