

# SKKT 430, SKKH 430



**SEMIPACK® 5**

## Thyristor / Diode Modules

**SKKT 430**

**SKKH 430**

### Features

- Heat transfer through aluminium nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability
- UL recognized, file no. E 63 532

### Typical Applications\*

- AC motor softstarters
- Input converters for AC inverter drives
- DC motor control (e. g. for machine tools)
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)

1) See the assembly instructions

$V_{RSM}$ V	$V_{RRM}, V_{DRM}$ V	$I_{TRMS} = 700$ A (maximum value for continuous operation) $I_{TAV} = 430$ A (sin. 180; $T_c = 86$ °C)	
1700	1600	SKKT 430/16E	SKKH 430/16E
2000	2000	SKKT 430/20EH4	SKKH 430/20EH4
2200	2200	SKKT 430/22EH4	SKKH 430/22EH4

Symbol	Conditions	Values	Units
$I_{TAV}$	sin. 180; $T_c = 85$ (100) °C;	440 (305)	A
$I_D$	P16/300F; $T_a = 35$ °C; B6	820	A
$I_{RMS}$	P16/300F; $T_a = 35$ °C; W3C	3 * 630	A
$I_{TSM}$	$T_{vj} = 25$ °C; 10 ms	15000	A
	$T_{vj} = 125$ °C; 10 ms	13000	A
$i^2t$	$T_{vj} = 25$ °C; 8,3 ... 10 ms	1125000	A <sup>2</sup> s
	$T_{vj} = 125$ °C; 8,3 ... 10 ms	845000	A <sup>2</sup> s
$V_T$	$T_{vj} = 25$ °C; $I_T = 1700$ A	max. 1,65	V
$V_{T(TO)}$	$T_{vj} = 125$ °C	max. 0,95	V
$r_T$	$T_{vj} = 125$ °C	max. 0,35	mΩ
$I_{DD}, I_{RD}$	$T_{vj} = 125$ °C; $V_{RD} = V_{RRM}, V_{DD} = V_{DRM}$	max. 150	mA
$t_{gd}$	$T_{vj} = 25$ °C; $I_G = 1$ A; $di_G/dt = 1$ A/μs	1	μs
$t_{gr}$	$V_D = 0,67 * V_{DRM}$	2	μs
$(di/dt)_{cr}$	$T_{vj} = 125$ °C	max. 200	A/μs
$(dv/dt)_{cr}$	$T_{vj} = 125$ °C	max. 1000	V/μs
$t_q$	$T_{vj} = 125$ °C	100 ... 200	μs
$I_H$	$T_{vj} = 25$ °C; typ. / max.	150 / 500	mA
$I_L$	$T_{vj} = 25$ °C; $R_G = 33$ Ω; typ. / max.	300 / 2000	mA
$V_{GT}$	$T_{vj} = 25$ °C; d.c.	min. 3	V
$I_{GT}$	$T_{vj} = 25$ °C; d.c.	min. 200	mA
$V_{GD}$	$T_{vj} = 130$ °C; d.c.	max. 0,25	V
$I_{GD}$	$T_{vj} = 130$ °C; d.c.	max. 10	mA
$R_{th(j-c)}$	cont.; per thyristor / per module	0,065 / 0,032	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,068 / 0,034	K/W
$R_{th(j-c)}$	rec. 120; per thyristors / per module	0,073 / 0,036	K/W
$R_{th(c-s)}$	per thyristor / per module	0,02 / 0,01	K/W
$T_{vj}$		- 40 ... + 125	°C
$T_{stg}$		- 40 ... + 125	°C
$V_{isol}$	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 / 3000	V~
$V_{isol}$	a. c. 50 Hz; r.m.s.; 1 s / 1 min. for SKK ...H4	4800 / 4000	V~
$M_s$	to heatsink	5 ± 15 % <sup>1)</sup>	Nm
$M_t$	to terminal	12 ± 15 %	Nm
$a$		5 * 9,81	m/s <sup>2</sup>
$m$	approx.	1420	g
Case	SKKT	A 60 a	
	SKKH	A 66 a	



**SKKT**

**SKKH**

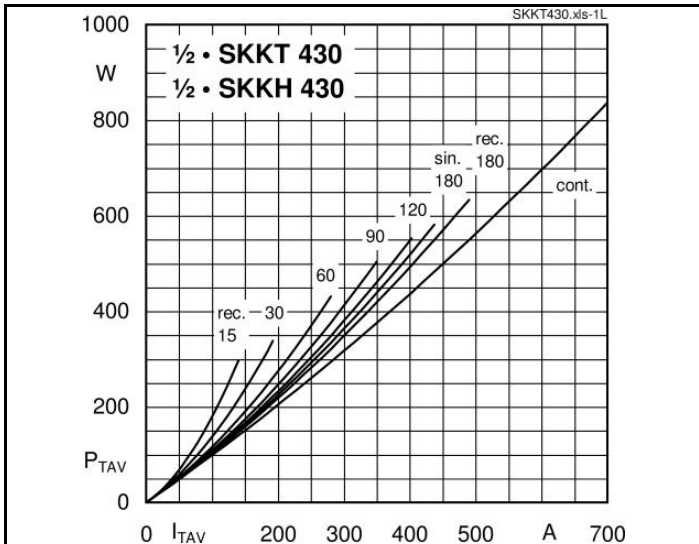


Fig. 1L Power dissipation per thyristor vs. on-state current

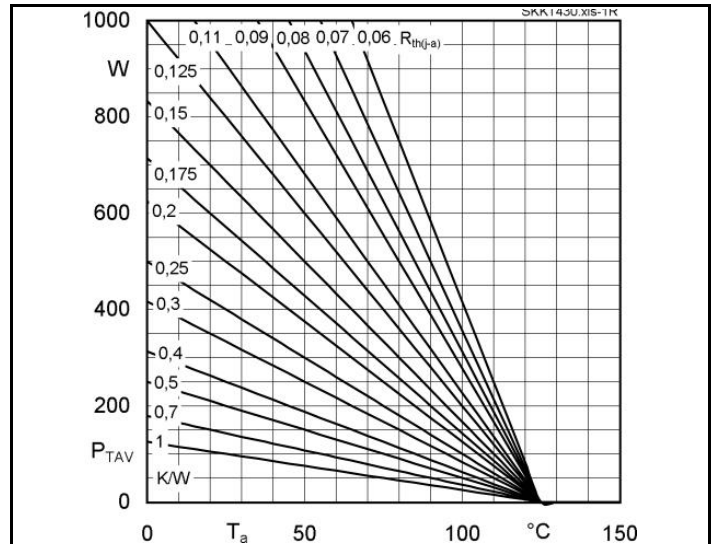


Fig. 1R Power dissipation per thyristor vs. ambient temp.

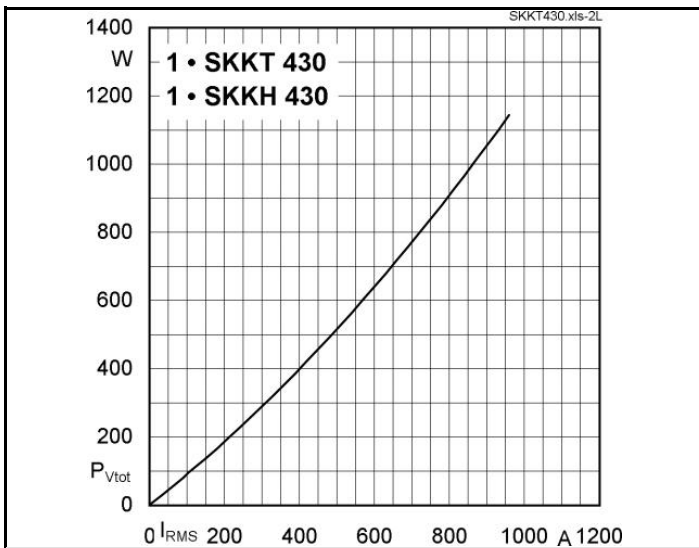


Fig. 2L Power dissipation per module vs. rms current

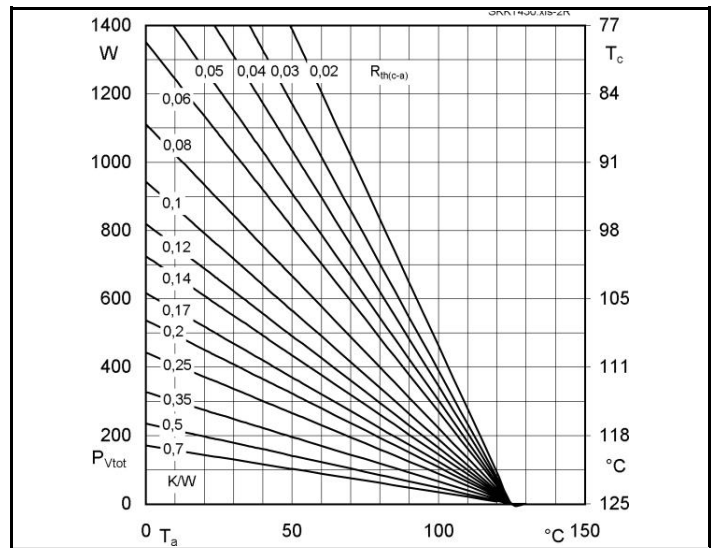


Fig. 2R Power dissipation per module vs. case temp.

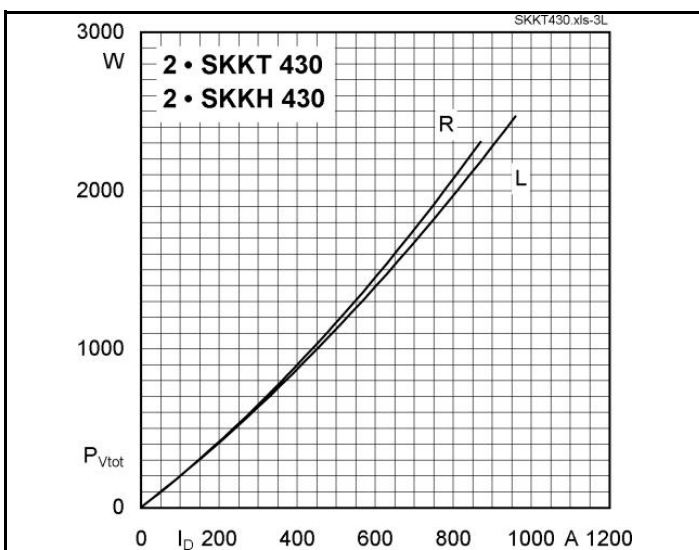


Fig. 3L Power dissipation of two modules vs. direct current

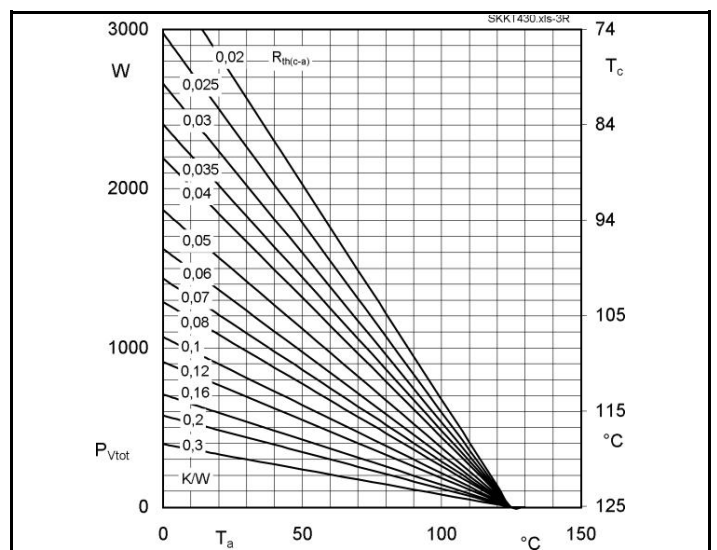
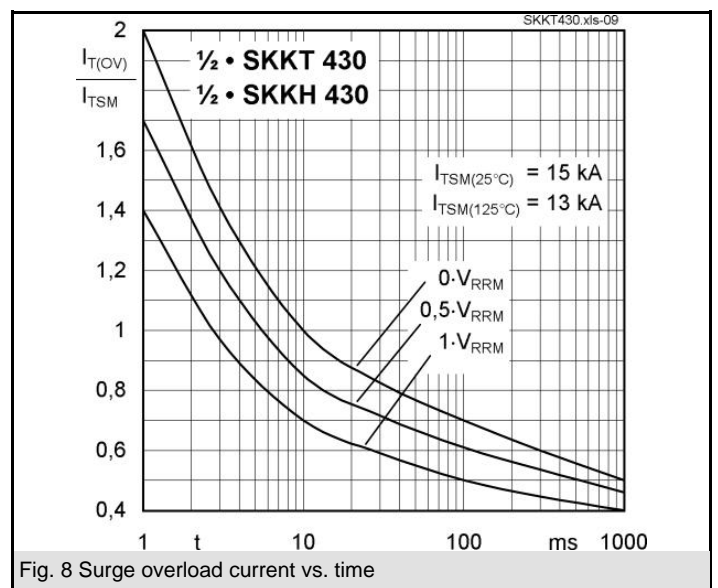
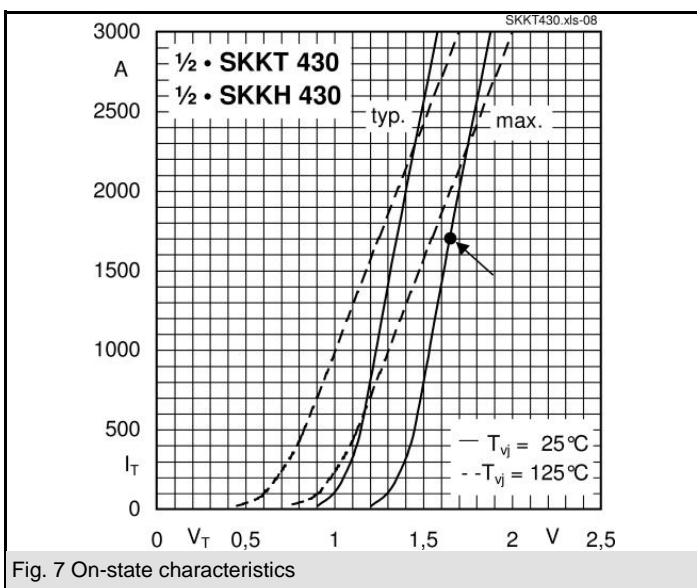
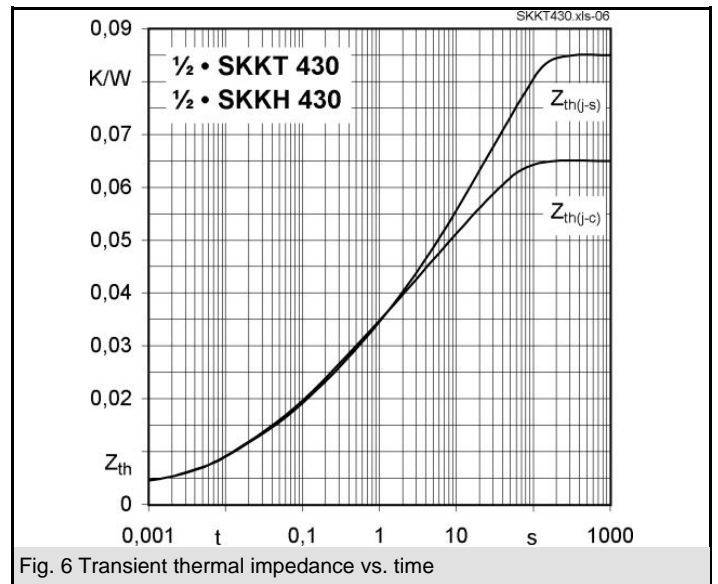
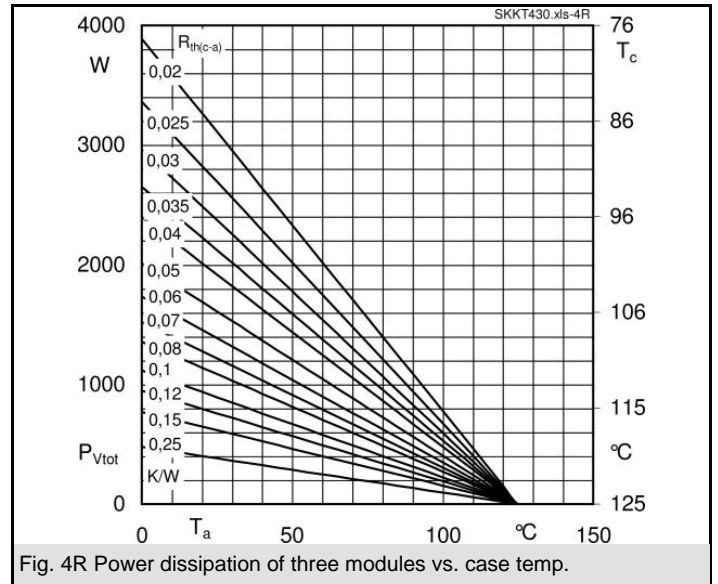
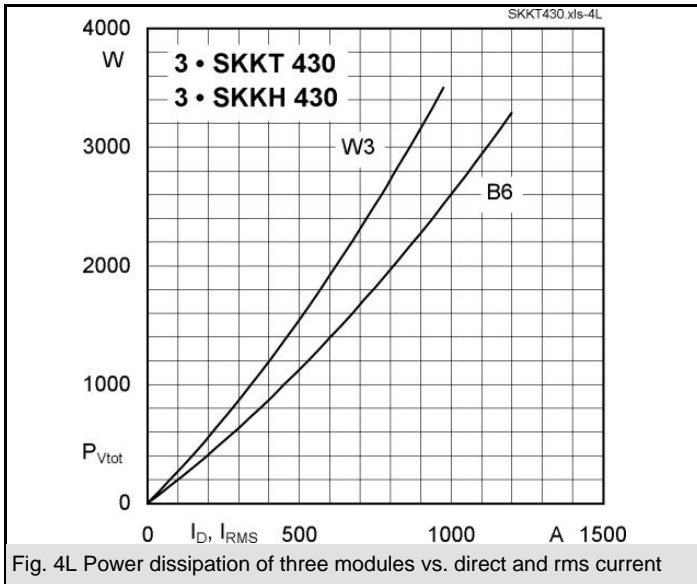


Fig. 3R Power dissipation of two modules vs. case temp.

# SKKT 430, SKKH 430



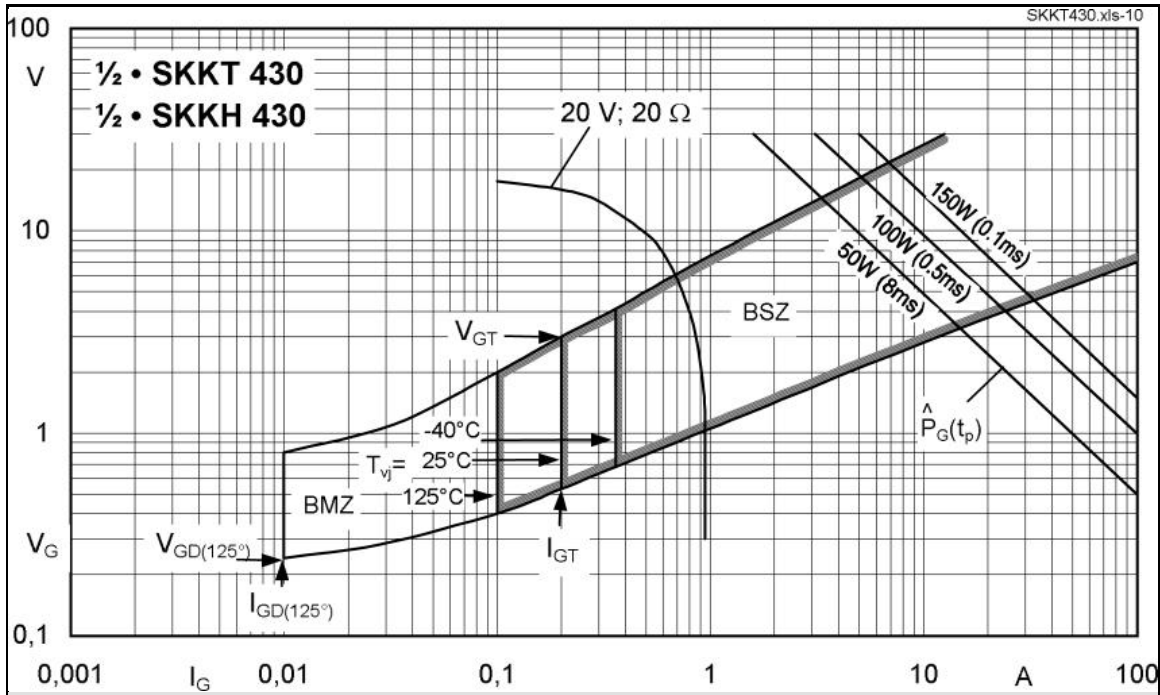
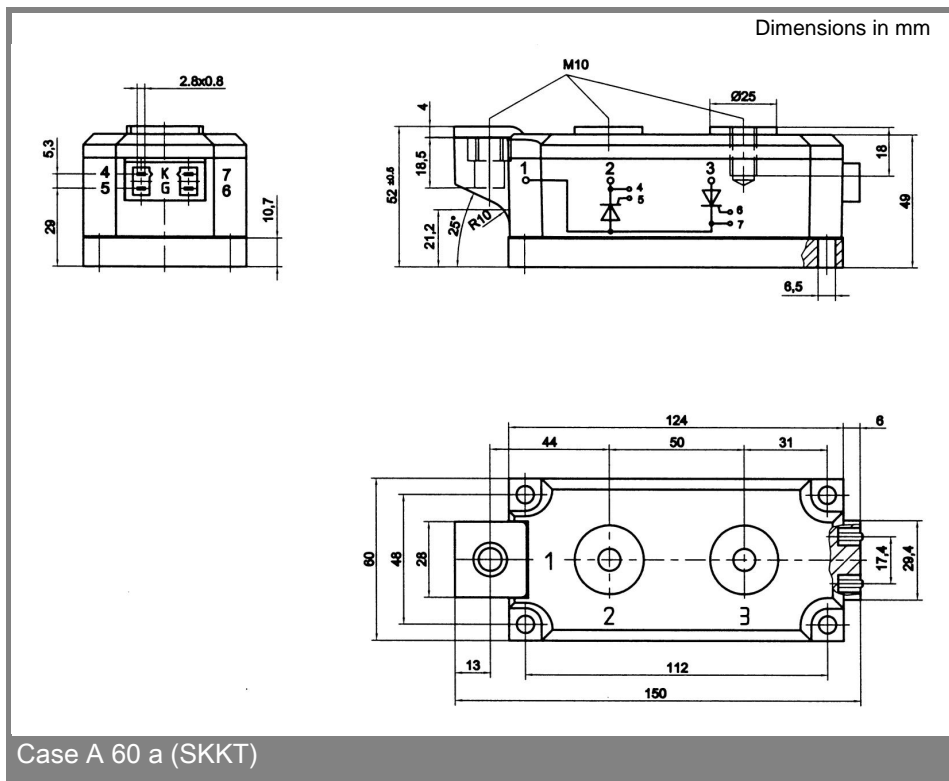
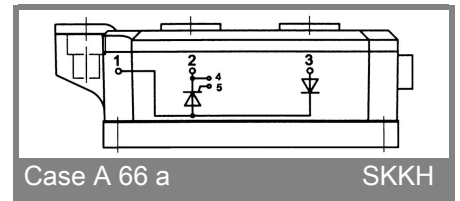


Fig. 9 Gate trigger characteristics



Case A 60 a (SKKT)



Case A 66 a

SKKH

\* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our staff.