



SEMIPACK® 2

Thyristor / Diode Modules

SKKH 172

SKKT 172

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*

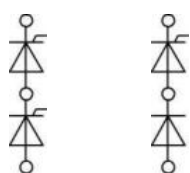
- DC motor control (e.g. for machine tools)
- AC motor soft starters

1) Characteristic values

2) See the assembly instructions

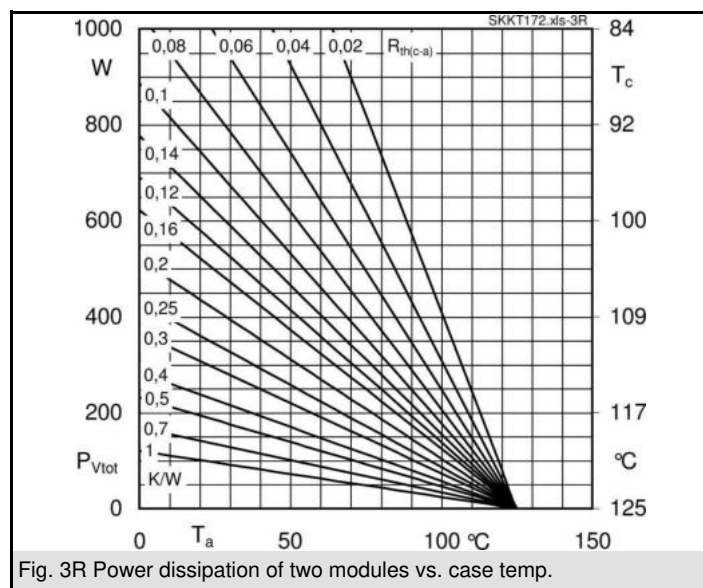
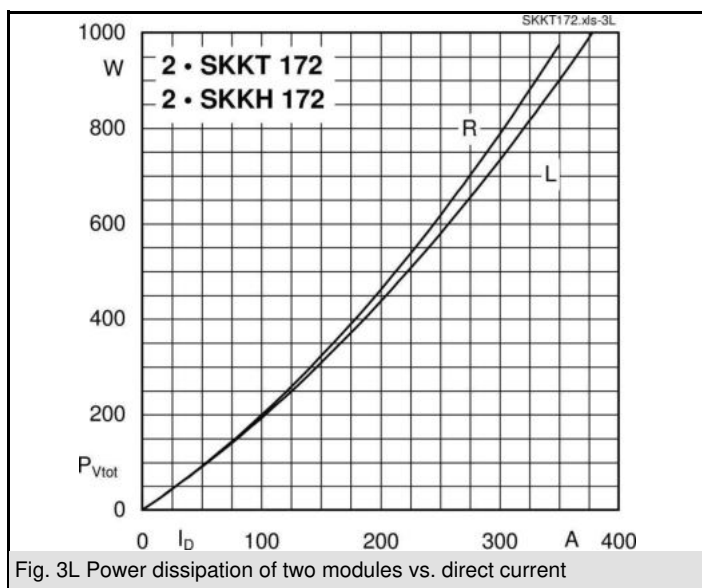
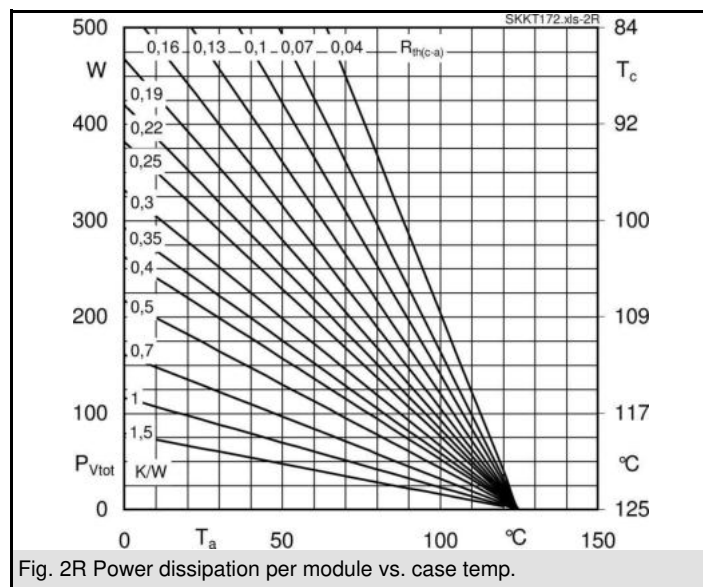
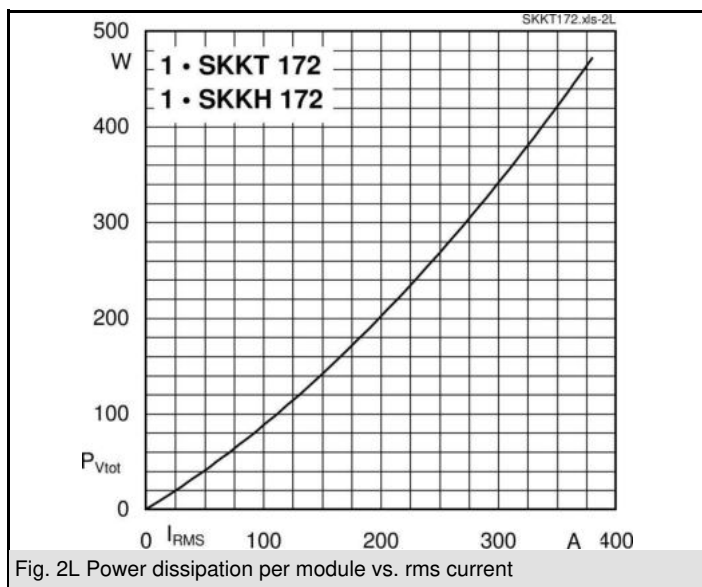
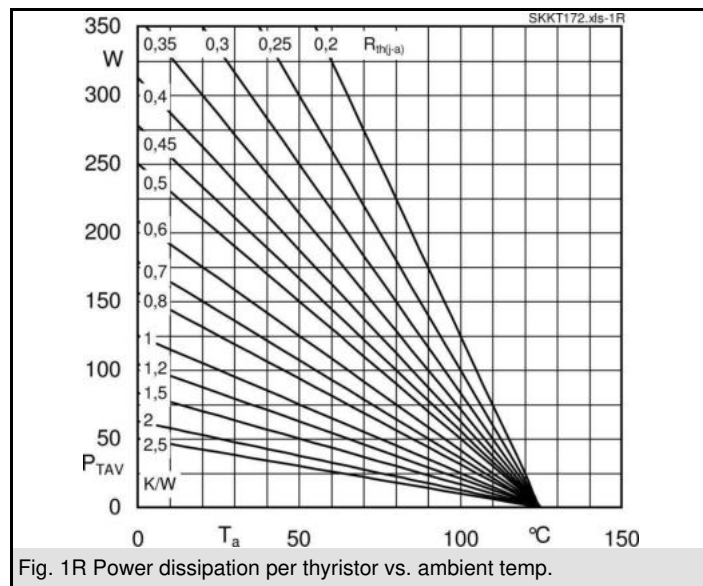
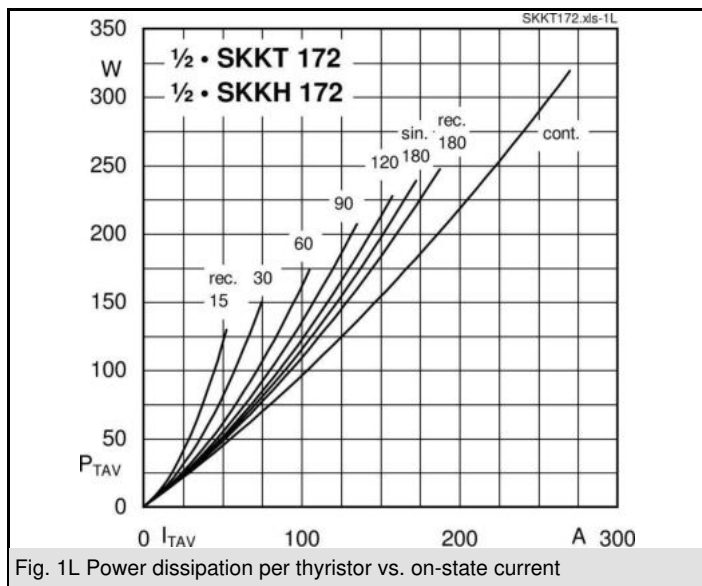
V_{RSM} V	V_{RRM}, V_{DRM} V	$I_{TRMS} = 275$ A (maximum value for continuous operation) $I_{TAV} = 172$ A (sin.180; $T_c = 86$ °C)		
1500	1400	SKKT 172/14E		
1700	1600	SKKT 172/16E	SKKH 172/16E	
1900	1800	SKKT 172/18E	SKKH 172/18E	

Symbol	Conditions	Values	Units
I_{TAV}	sin. 180; $T_c = 85$ (100) °C;	175 (124)	A
I_{TSM}	$T_{vj} = 25$ °C; 10 ms $T_{vj} = 125$ °C; 10 ms	5400 5000	A A
i^2t	$T_{vj} = 25$ °C; 8,3 ... 10 ms $T_{vj} = 125$ °C; 8,3 ... 10 ms	145000 125000	A²s A²s
V_T	$T_{vj} = 25$ °C; $I_T = 500$ A	max. 1,41	V
$V_{T(TO)}$	$T_{vj} = 125$ °C	max. 0,83	V
r_T	$T_{vj} = 125$ °C	max. 1,3	mΩ
$V_{T(TO)(typ.)}^{1)}$	$T_{vj} = 125$ °C	0,8	V
$r_{T(typ.)}^{1)}$	$T_{vj} = 125$ °C	1,2	mΩ
I_{DD}, I_{RD}	$T_{vj} = 125$ °C; $V_{RD} = V_{RRM}; V_{DD} = V_{DRM}$	max. 40	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 ,	typ. 175	μs
I_H	$T_{vj} = 25$ °C; typ. / max.	150 / 400	mA
I_L	$T_{vj} = 25$ °C; $R_G = 33$ Ω; typ. / max.	300 / 1000	mA
V_{GT}	$T_{vj} = 25$ °C; d.c.	min. 2	V
I_{GT}	$T_{vj} = 25$ °C; d.c.	min. 150	mA
V_{GD}	$T_{vj} = 125$ °C; d.c.	max. 0,25	V
I_{GD}	$T_{vj} = 125$ °C; d.c.	max. 10	mA
$R_{th(j-c)}$	cont.; per thyristor / per module	0,155 / 0,078	K/W
$R_{th(j-c)}$	sin. 180; per thyristor / per module	0,164 / 0,082	K/W
$R_{th(j-c)}$	rec. 120; per thyristor / per module	0,18 / 0,09	K/W
$R_{th(c-s)}$	per thyristor / per module	0,1 / 0,05	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~
M_s	to heatsink	5 ± 15 % ²⁾	Nm
M_t	to terminal	5 ± 15 %	Nm
a		5 * 9,81	m/s²
m	approx.	165	g
Case	SKKT SKKH	A 21 A 22	



SKKT

SKKH



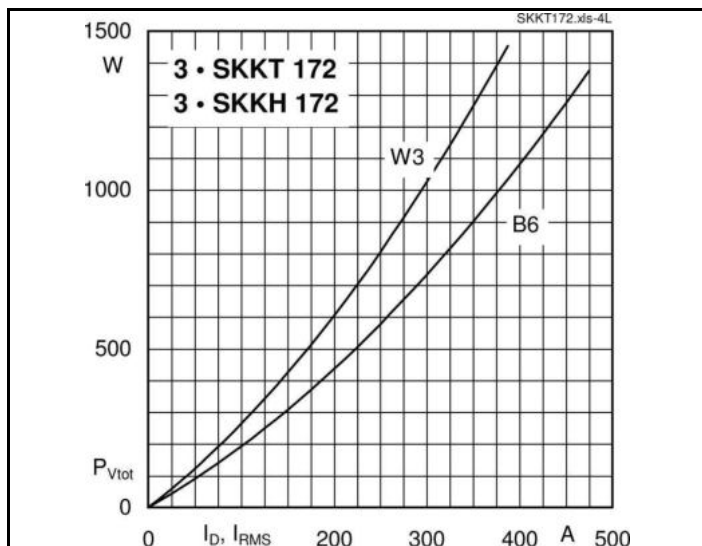


Fig. 4L Power dissipation of three modules vs. direct and rms current

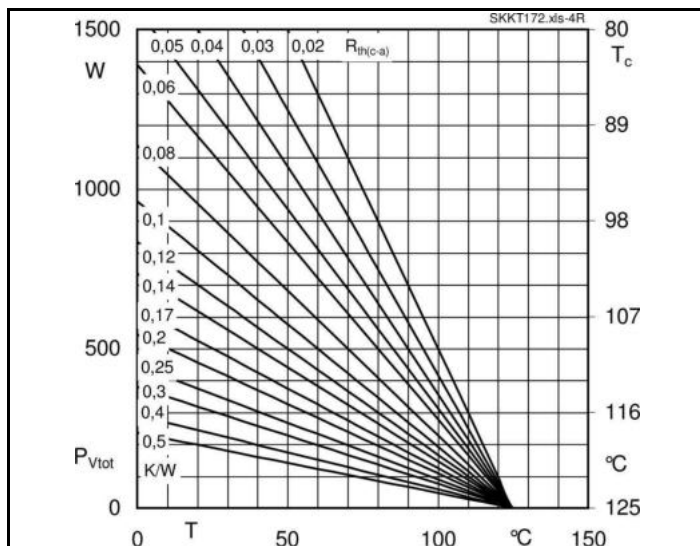


Fig. 4R Power dissipation of three modules vs. case temp.

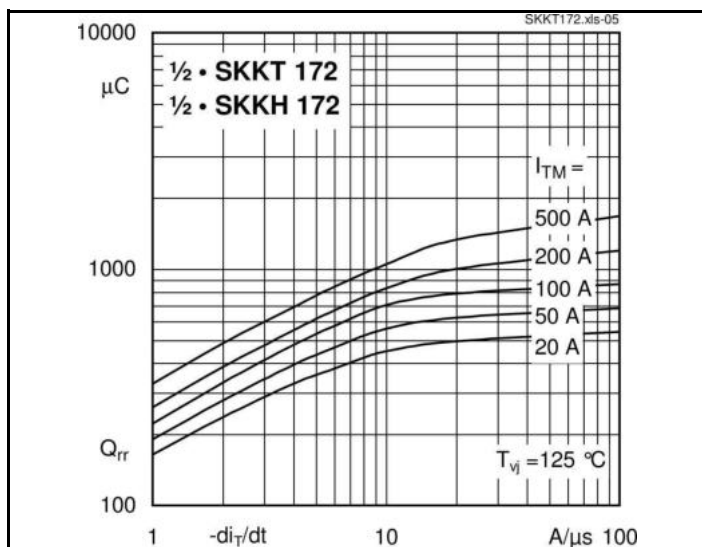


Fig. 5 Recovered charge vs. current decrease

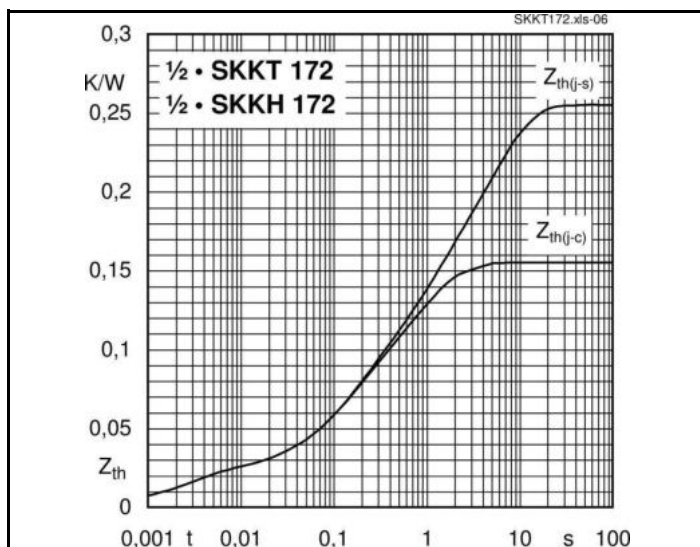


Fig. 6 Transient thermal impedance vs. time

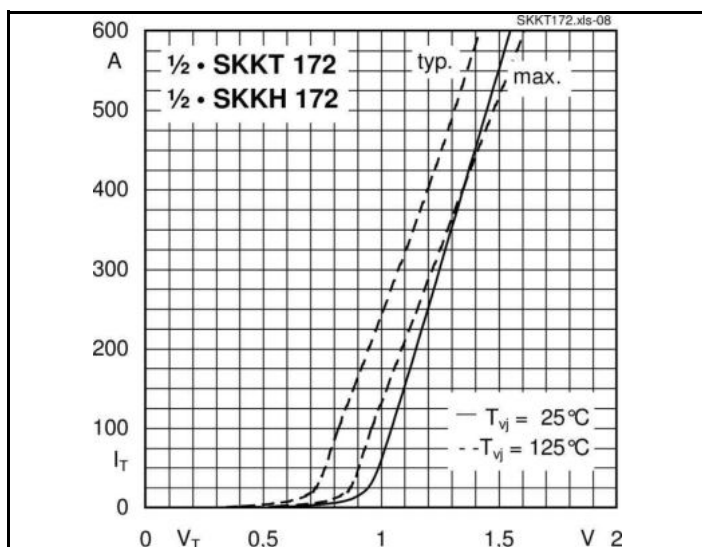


Fig. 7 On-state characteristics

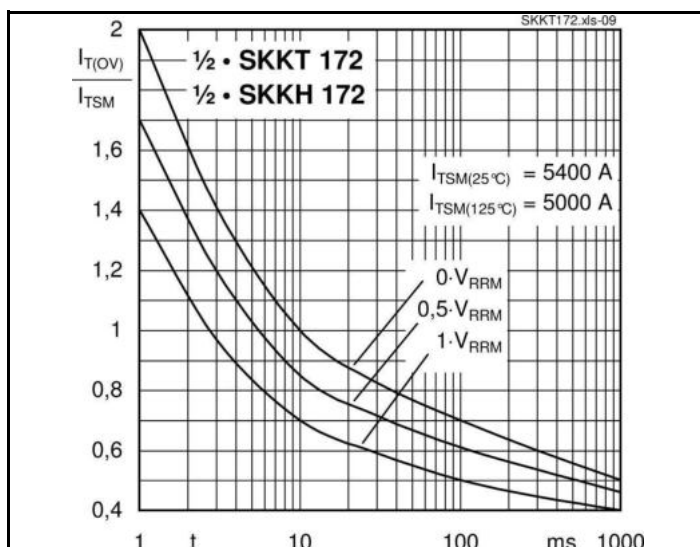
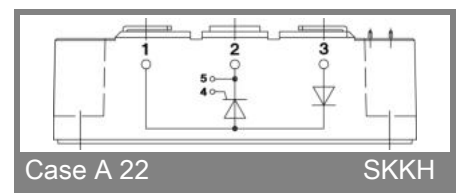
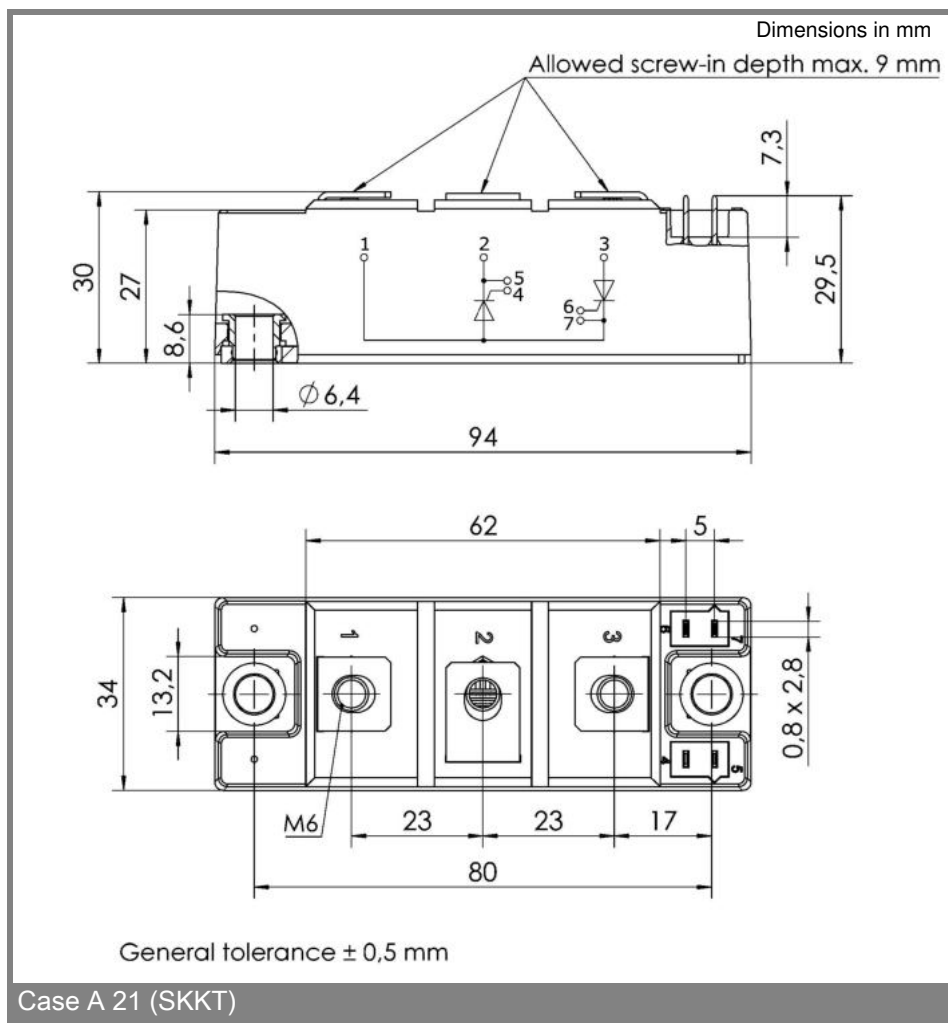
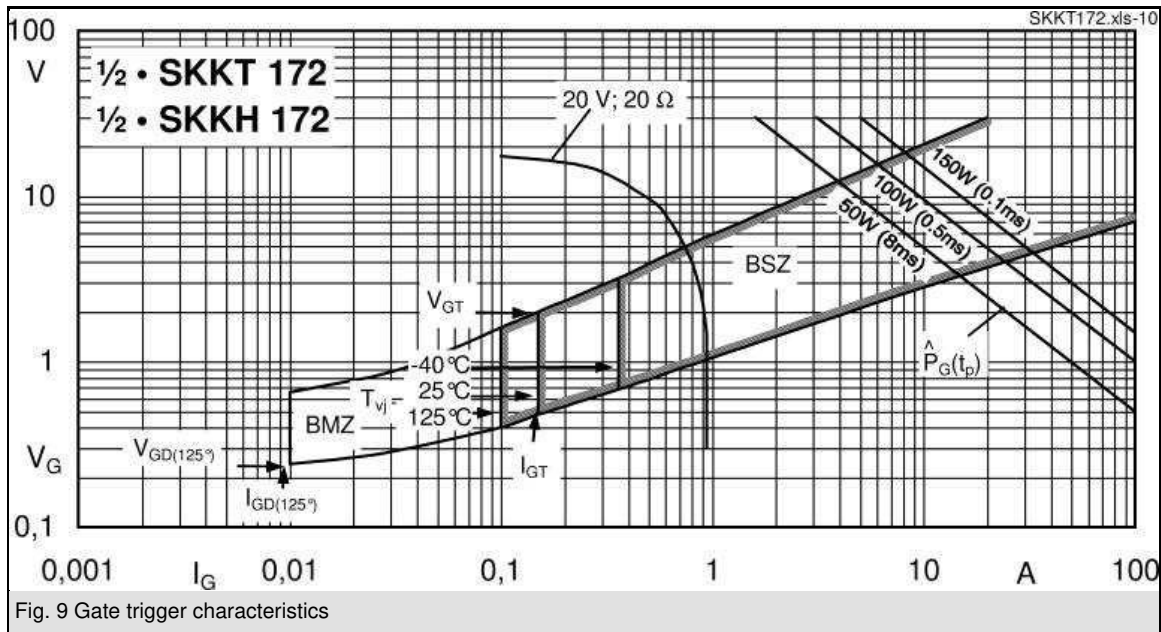


Fig. 8 Surge overload current vs. time



This is an electrostatic discharge sensitive device (ESDS) due to international standard IEC 61340.

***IMPORTANT INFORMATION AND WARNINGS**

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