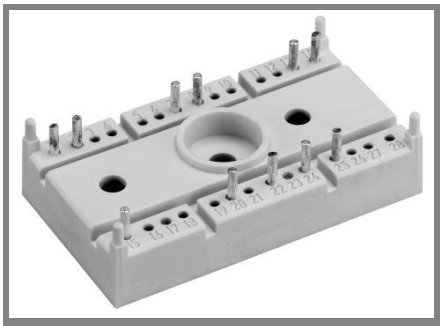
SK 80 DTA



SEMITOP® 3

3-phase bridge rectifier+ series thyristor

SK 80 DTA

Preliminary Data

Features

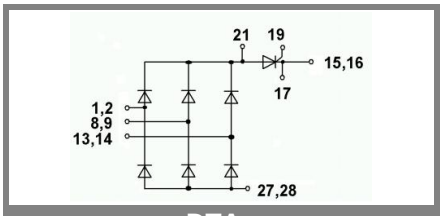
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Reverse voltage up to 1600 V
- High surge currents

Typical Applications

- Soft starters
- Light control
- Temperature control

V_{RSM} V	V_{RRM}, V_{DRM} V	I_D = 81 A (T_s = 80 °C)
900	800	SK 80 DTA 08
1300	1200	SK 80 DTA 12
1700	1600	SK 80 DTA 16

Characteristics		T_s= 25°C unless otherwise specified	
Symbol	**Conditions**	**Values**	**Units**
I_D	T_S = 80°C; Ind. load	81	A
I_{TAV}	sin. 180°; T_s = 25 (80) °C per thyristor	113 (65)	A
I_{FAV}	sin. 180°; T_s = 25 (80) °C per diode	65 (45)	A
I_{TSM}/I_{FSM}	T_{vj} = 25 (125) °C; 10 ms	2000 (1800)	A
I^2t	T_{vj} = 25 (125) °C; 8,3 ... 10 ms	20000 (16200)	A^2s
T_{stg}		-40,...+125	°C
T_{solder}	terminals, 10 s	260	°C
Thyristor			
$(dv/dt)_{cr}$	T_{vj} = 125 °C	1000	V/µs
$(di/dt)_{cr}$	T_{vj} = 125 °C; f = f = Hz	50	A/µs
t_q	T_{vj} = 125 °C; typ.	120	µs
I_H	T_{vj} = 25 °C; typ. / max.	100 / 200	mA
I_L	T_{vj} = 25 °C; R_G = 33 Ω; typ. / max.	200 / 500	mA
V_T	T_{vj} = 25 °C; (I_T = 300 A); max.	1,85	V
$V_{T(TO)}$	T_{vj} = 125 °C	max. 0,9	V
r_T	T_{vj} = 125 °C	max. 3,5	mΩ
I_{DD}; I_{RD}	T_{vj} = 125 °C; V_{DD} = V_{DRM}; V_{RD} = V_{RRM}	max. 20	mA
$R_{th(j-s)}$	Cont. per thyristor	0,45	K/W
T_{vj}		- 40 ... + 125	°C
V_{GT}	T_{vj} = 25 °C; d.c.	2	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
Diode			
V_F	T_{vj} = 25 °C; (I_F = 75 A); max.	1,45	V
$V_{(TO)}$	T_{vj} = 125 °C	0,8	V
r_T	T_{vj} = 125 °C	4,5	mΩ
I_{RD}	T_{vj} = 125 °C; V_{RD} = V_{RRM}	2	mA
$R_{th(j-s)}$	per diode	1	K/W
T_{vj}		-40...+150	°C
Mechanical data			
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min	3000 (2500)	V
M_1	mounting torque	2,5	Nm
w		30	g
Case	SEMITOP® 3	T 45	



DTA

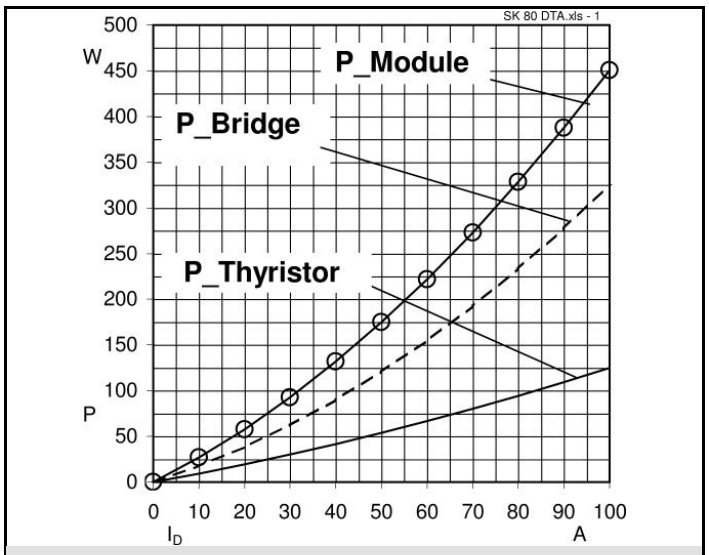


Fig. 1 Power dissipation per module vs. output bridge current

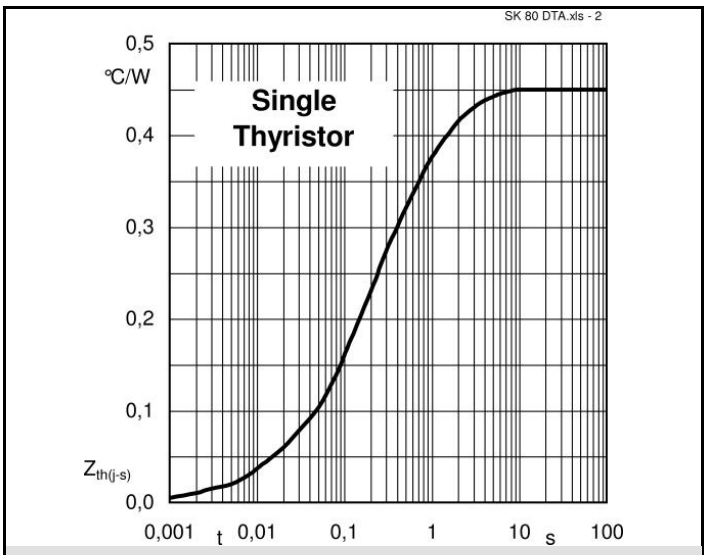


Fig. 2 Transient thermal impedance vs time

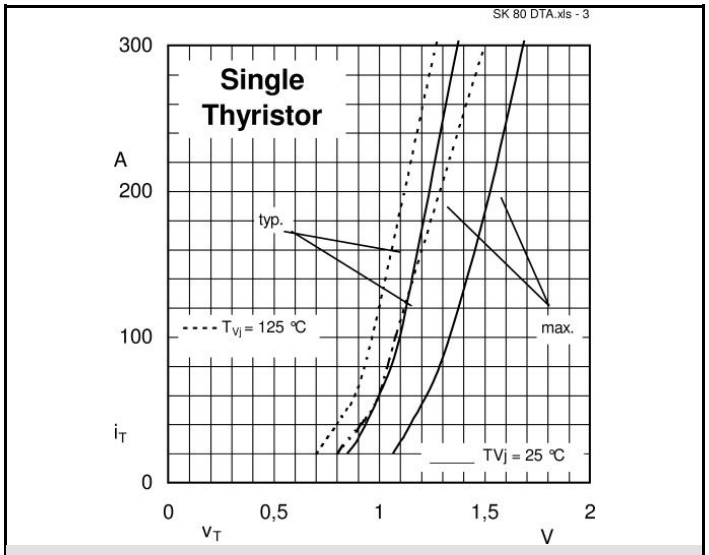


Fig. 3a Thyristor On-state characteristics

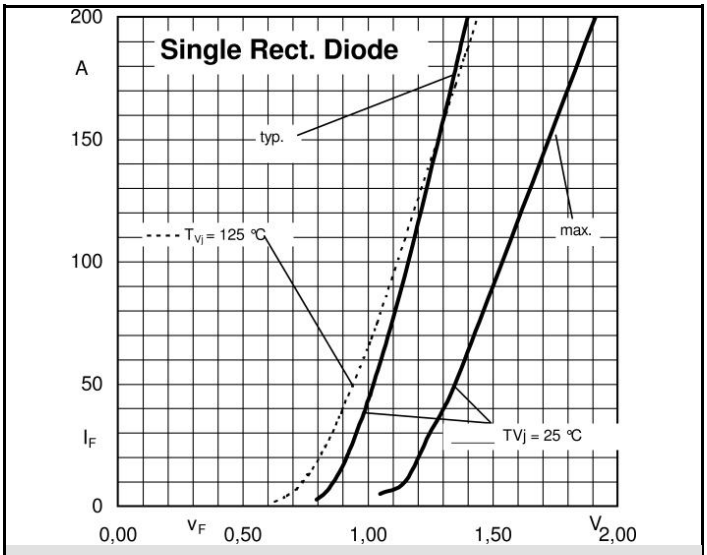


Fig. 3b Rect. Diode On-state characteristics

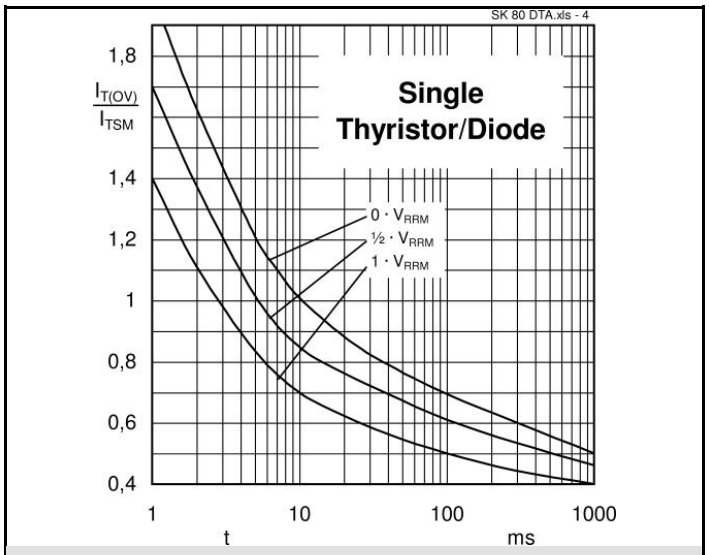


Fig. 4 Surge overload current vs. time

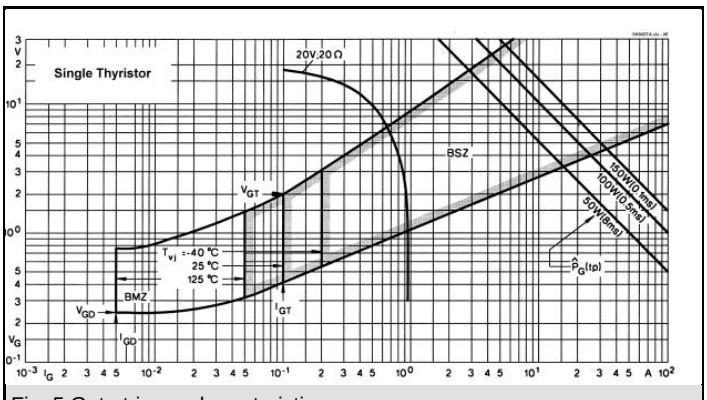


Fig. 5 Gate trigger characteristics

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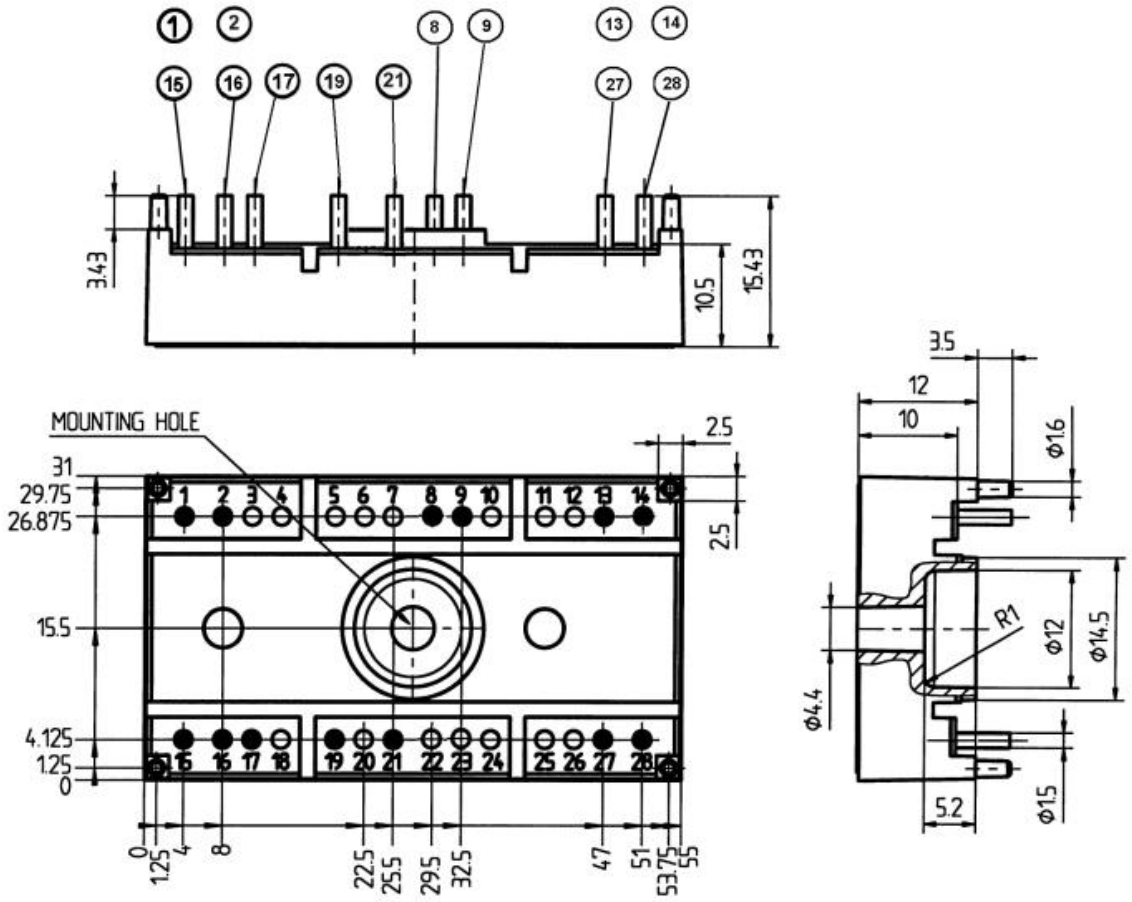
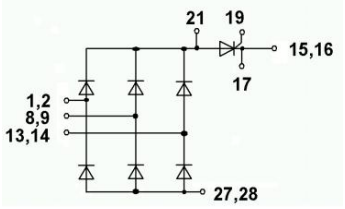
Dimensions in mm



SUGGESTED HOLEDIAMETER FOR THE SOLDER PINS AND THE MOUNTING PINS IN THE PCB: 2 mm

Case T45



DTA

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

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