SK 60 DTA



SEMITOP[®] 3

3-phase bridge rectifier+ series thyristor

SK 60 DTA

Preliminary Data

Features

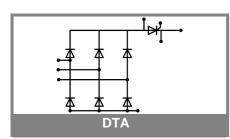
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DBC)
- Glass passivated thyristor chips
- Reverse voltage up to 1600 V
- High surge currents

Typical Applications

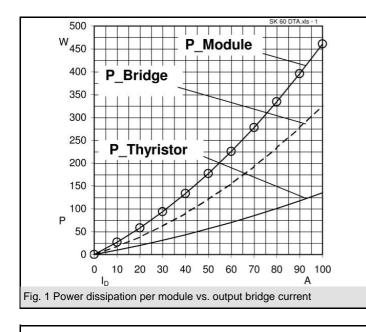
- Soft starters
- Light control
- Temperature control

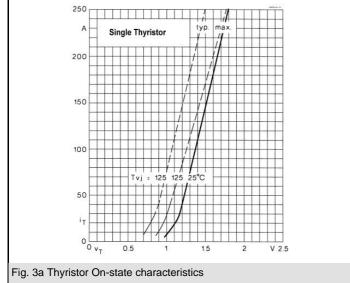
V _{RSM} V	V _{RRM} , V _{DRM} V	I _D = 61 A (T _s = 80 °C)
900	800	SK 60 DTA 08
1300	1200	SK 60 DTA 12
1700	1600	SK 60 DTA 16

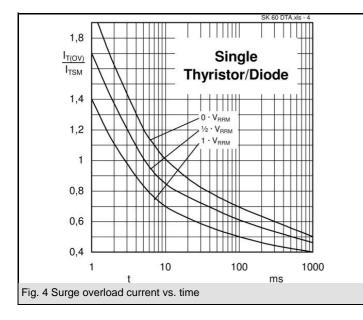
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Characteristics		T _s = 2	25°C unless otherwise	specified
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Symbol	Conditions	1	Values	Units
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	I _D	T _S = 80°C; Ind. load		61	А
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	I _{TAV}	sin. 180°; T _s = 25 (80) °C per thyristor		86 (49)	А
at T _{ij} = 25 (125) °C; 8,3 10 ms 11250 (9100) A*s Fsig -40+125 °C fsolder terminals, 10 s 260 °C Thyristor 260 °C dv/dth _{cr} T _{ij} = 125 °C; f = f = Hz 1000 V/µs q T _{ij} = 125 °C; typ. 120 µs H T _{ij} = 25 °C; typ. / max. 100 / 200 mA L T _{ij} = 25 °C; Te G = 33 Ω; typ. / max. 100 / 200 mA VT(TO) T _{ij} = 25 °C; Q = 33 Ω; typ. / max. 1.8 V Principal Participal Partipal Partipal Participal Partipal Participal Participal Partipal	I _{FAV}	sin. 180°; T _s = 25 (80) °C per diode		65 (45)	А
Fsig -40,+125 °C Γ_{solder} terminals, 10 s 260 °C Thyristor T _{vj} = 125 °C 1000 V/µs q T _{vj} = 125 °C; f = f = Hz 50 A/µs q T _{vj} = 25 °C; typ. / max. 100 / 200 mA L T _{vj} = 25 °C; typ. / max. 100 / 200 mA L T _{vj} = 25 °C; (Ir = 200 A); max. 1,8 V $V_{T(TO)}$ T _{vj} = 125 °C max. 4,5 mQ T_{vj} 125 °C; d.c. 2 V V_{cT} T _{vj} = 25 °C; d.c. 2 V V_{gD} T _{vj} = 125 °C; d.c. 0,6 K/W V_{GT} T _{vj} = 25 °C; d.c. 0,25 V G_{GT} T _{vj} = 125 °C; d.c. 0,8 V V_{gD} T _{vj} = 125 °C; d.c. 0,8 V	I _{TSM} /I _{FSM}	T _{vi} = 25 (125) °C; 10 ms		1500 (1350)	А
	l²t	T _{vi} = 25 (125) °C; 8,3 10 ms		11250 (9100)	A²s
	T _{sta}			-40,+125	°C
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	T _{solder}	terminals, 10 s		260	°C
$ \begin{array}{ccccccccccccccccccccccccccccccc$	Thyristor				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	(dv/dt) _{cr}	T _{vi} = 125 °C		1000	V/µs
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	(di/dt) _{cr}			50	A/µs
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t _q			120	μs
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	I _H	T _{vj} = 25 °C; typ. / max.		100 / 200	mA
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	I _L	T_{vj} = 25 °C; R_G = 33 Ω ; typ. / max.		200 / 500	mA
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	V _T	T _{vi} = 25 °C; (I _T = 200 A); max.		1,8	V
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	V _{T(TO)}			max. 0,9	V
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	r _T	T _{vi} = 125 °C		max. 4,5	mΩ
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	I _{DD} , I _{RD}	$T_{vi}^{''}$ = 125 °C; V_{DD} = V_{DRM} ; V_{RD} = V_{RRM}		max. 20	mA
		Cont. per thyristor		0,6	K/W
	T _{vj}			- 40 + 125	°C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	V _{GT}	T _{vi} = 25 °C; d.c.		2	V
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				100	mA
GD $T_{vj} = 125 ^{\circ}C; d.c.$ 5 mA Diode V V N 1,45 V $V_{(TO)}$ $T_{vj} = 25 ^{\circ}C; (I_F = 75 A); max.$ 1,45 V V $T_{vj} = 125 ^{\circ}C$ 0,8 V N N N N $M_{(TO)}$ $T_{vj} = 125 ^{\circ}C$ 0,8 V N	V _{GD}			0,25	V
	I _{GD}	-		5	mA
	Diode				
	V _F	T _{vi} = 25 °C; (I _F = 75 A); max.	ĺ	1,45	V
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				0,8	V
RD $T_{vj} = 125 \text{ °C}; V_{RD} = V_{RRM}$ 2 mA $R_{th(j,s)}$ per diode 1 K/W Γ_{vj} -40+150 °C Mechanical data 3000 (2500) V M_1 mounting torque 2,5 Nm N 30 g 1	r _T	T _{vi} = 125 °C		4,5	mΩ
$\begin{array}{c c} R_{th(j-s)} & \text{per diode} & 1 & K/W \\ \hline r_{vj} & -40+150 & ^{\circ}C \\ \hline \mbox{Mechanical data} \\ \hline \mbox{V}_{isol} & a. c. 50 \ \mbox{Hz; r.m.s.; 1 s / 1 min} & 3000 \ (2500) & V \\ \hline \mbox{M}_1 & mounting torque} & 2.5 & Nm \\ \hline \mbox{W} & 30 & g \\ \hline \mbox{W} & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & & \\ \hline \mbox{W} & & & & & & \\ \hline \mbox{W} & & & & & & \\ \hline \mbox{W} & & & & & & \\ \hline \mbox{W} & & & \\ \hline \\mbox{W} & & & \\ \hline \mbox{W} & & $	I _{RD}			2	mA
Γ _{vj} -40+150 °C Mechanical data Visol a. c. 50 Hz; r.m.s.; 1 s / 1 min 3000 (2500) V M1 mounting torque 2,5 Nm 300 g				1	K/W
V _{isol} a. c. 50 Hz; r.m.s.; 1 s / 1 min 3000 (2500) V M1 mounting torque 2,5 Nm N 300 g	T _{vi}			-40+150	°C
V _{isol} a. c. 50 Hz; r.m.s.; 1 s / 1 min 3000 (2500) V M1 mounting torque 2,5 Nm N 300 g	Mechanic	cal data			
M ₁ mounting torque 2,5 Nm w 30 g	V _{isol}			3000 (2500)	V
w 30 g	M ₁	mounting torque			Nm
Case SEMITOP® 3 T 45	w			30	g
	Case	SEMITOP [®] 3		T 45	

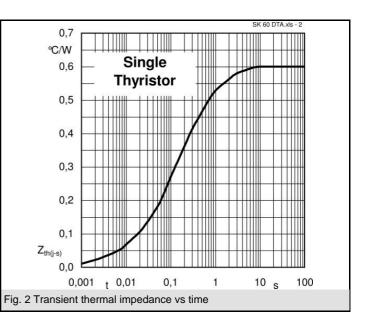


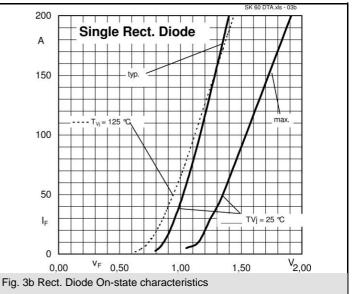
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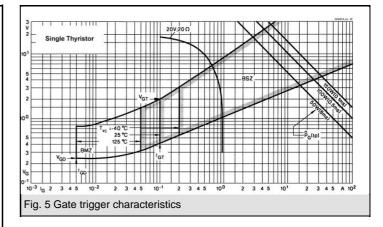






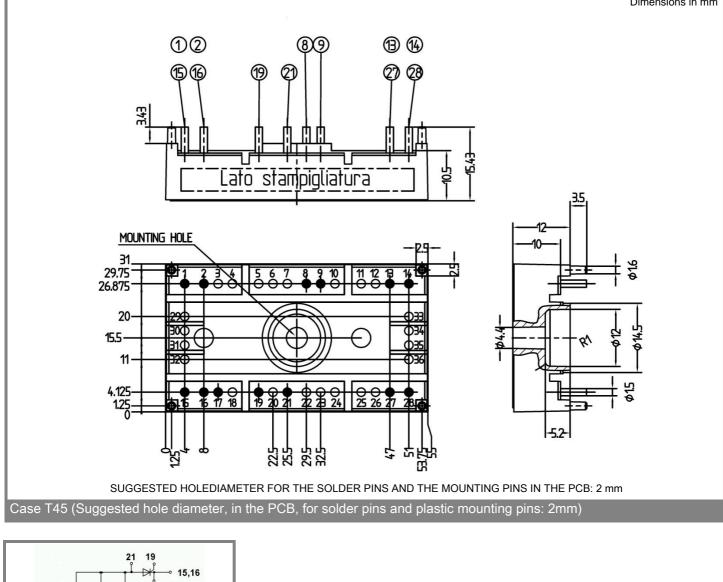


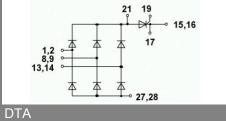




SK 60 DTA

Dimensions in mm





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

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