

**SEMITOP® 2**

**1-phase bridge rectifier with one diode arm and one thyristor arm**  
**SK 35 BZ**

Target 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\*

- Field regulator

1)  $V_F$ ,  $V_T$ ,  $V_{T(TO)}$ ,  $V_{T(TO)}$ ,  $r_{diode}$ ,  $r_{thy}$  = chip level value

$V_{RSM}$ V	$V_{RRM}$ , $V_{DRM}$ V	$I_F = 35$ A ( $T_s = 80$ °C)
900	800	SK35BZ08
1300	1200	SK35BZ12
1700	1600	SK35BZ16

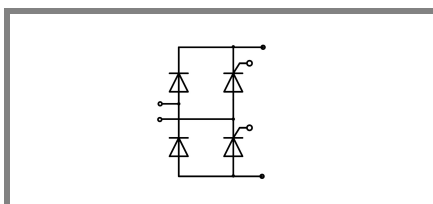
**Characteristics**  $T_s = 25$  °C unless otherwise specified

Symbol	Conditions	Values	Units
$I_F$	$T_s = 80$ °C per diode	35	A
$I_T$	$T_s = 80$ °C per thyristor	25	A
$I_{FAV}$	sin. 180°; $T_s = 25$ (80) °C per diode	35 (25)	A
$I_{TSM}/I_{FSM}$	$T_{vj} = 25$ (125) °C; 10 ms	370 (270)	A
$I^2t$	$T_{vj} = 25$ (125) °C; 8,3 ... 10 ms	685 (365)	A <sup>2</sup> s
$T_{stg}$		-40,...+125	°C
$T_{solder}$	terminals, 10 s	260	°C

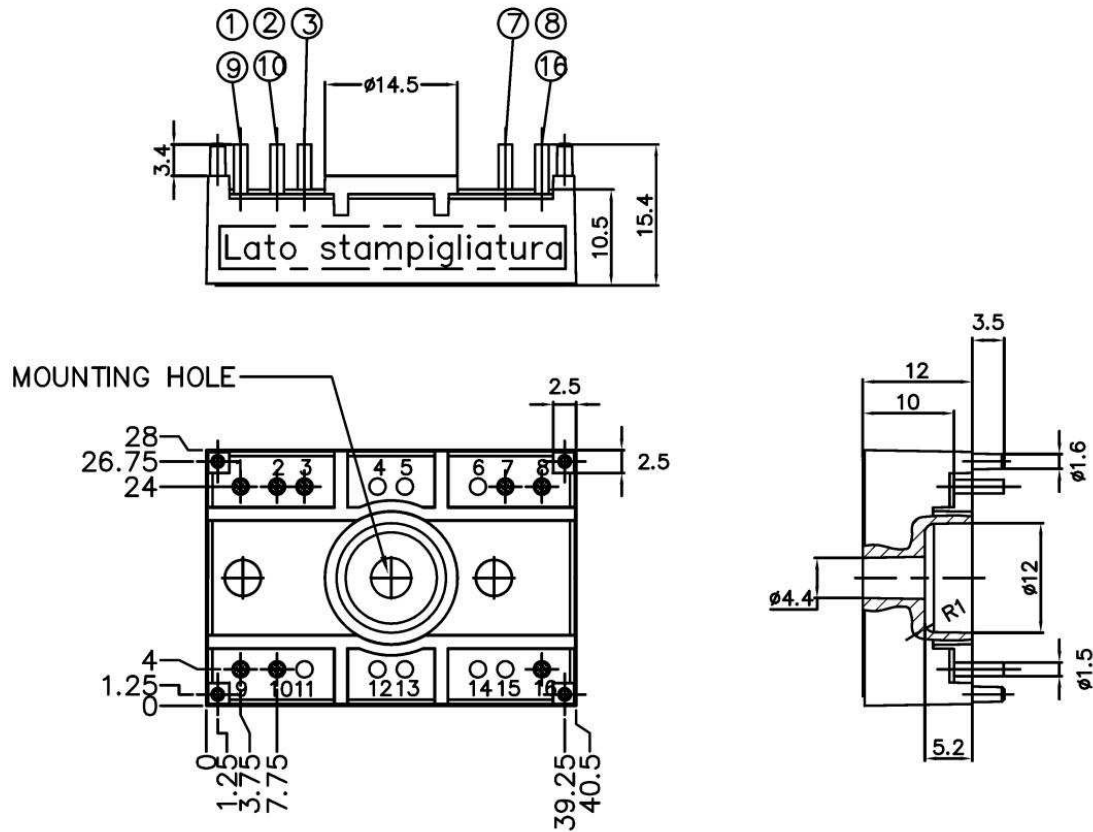
<b>Thyristor</b>			
$(dv/dt)_{cr}$	$T_{vj} = 125$ °C	1000	V/μs
$(di/dt)_{cr}$	$T_{vj} = 125$ °C; $f = 50 \dots 60$ Hz	50	A/μs
$t_q$	$T_{vj} = 125$ °C; typ.	150	μs
$I_H$	$T_{vj} = 25$ °C; typ. / max.	80 / 165	mA
$I_L$	$T_{vj} = 25$ °C; $R_G = 33$ Ω; typ. / max.	150 / 330	mA
$V_T$	$T_{vj} = 125$ °C; ( $I_T = 25$ A); max.	1,2	V
$V_{T(TO)}$	$T_{vj} = 125$ °C	max. 0,85	V
$r_T$	$T_{vj} = 125$ °C	max. 14	mΩ
$I_{DD}$ ; $I_{RD}$	$T_{vj} = 125$ °C; $V_{DD} = V_{DRM}$ ; $V_{RD} = V_{RRM}$	max. 8	mA
$R_{th(j-s)}$	Cont. per thyristor	1,7	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.	3	mA

<b>Diode</b>			
$V_F$	$T_{vj} = 125$ °C; ( $I_F = 15$ A); max.	1,1	V
$V_{T(TO)}$	$T_{vj} = 125$ °C	0,83	V
$r_T$	$T_{vj} = 125$ °C	13	mΩ
$I_{RD}$	$T_{vj} = 150$ °C; $V_{RD} = V_{RRM}$	4	mA
$R_{th(j-s)}$	per diode	1,7	K/W
$T_{vj}$		-40...+150	°C

<b>Mechanical data</b>			
$V_{isol}$	a. c. 50 Hz; r.m.s.; 1 s / 1 min	3000 (2500)	V
$M_1$	mounting torque	2	Nm
w		19	g
Case	SEMITOP® 2	T 91	

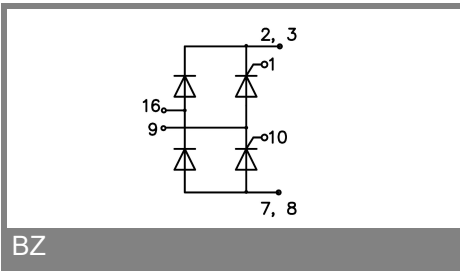


**BZ**



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

Case T91 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



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

\* 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 personal.