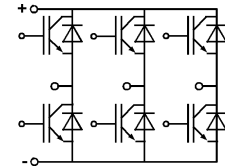


SEMITOP® 3 IGBT Module

SK 8 GD 062

Preliminary Data



GD

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N channel, epitaxial silicon structure (PT Punch-through IGBT)
- High short circuit capability
- Fast and soft inverse CAL-diodes

Typical Applications

- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

1) $T_h = 25\text{ °C}$, unless otherwise specified

2) CAL = Controlled Axial Lifetime Technology (soft and fast recovery)

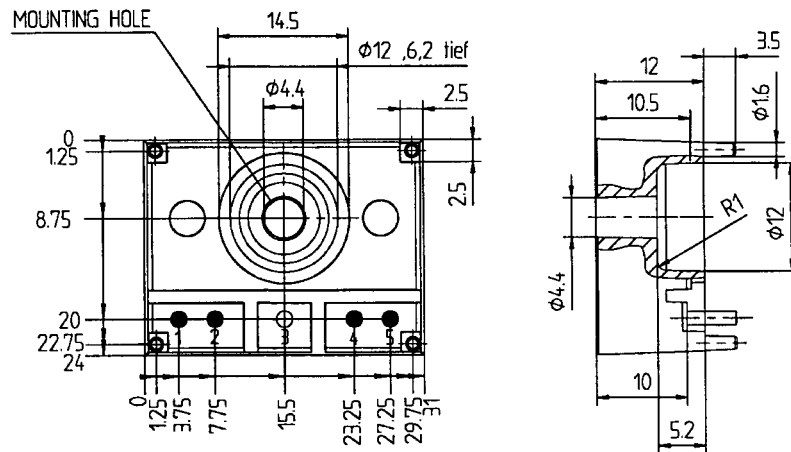
Case → B 17 – 24

Absolute Maximum Ratings			
Symbol	Conditions ¹⁾	Values	Units
V_{CES}		600	V
V_{GES}		± 20	V
I_C	$T_h = 25/80\text{ °C}$	12 / 8	A
I_{CM}	$t_p < 1\text{ ms}; T_h = 25/80\text{ °C}$	24 / 16	A
$I_F = -I_C$	$T_h = 25/80\text{ °C}$	22 / 15	A
$I_{FM} = -I_{CM}$	$t_p < 1\text{ ms}; T_h = 25/80\text{ °C}$	44 / 30	A
$T_j, (T_{stg})$		- 40 ... +(125) 150	°C
T_{sol}	Terminals, 10 s	260	°C
V_{isol}	AC, 1 min	2500	V

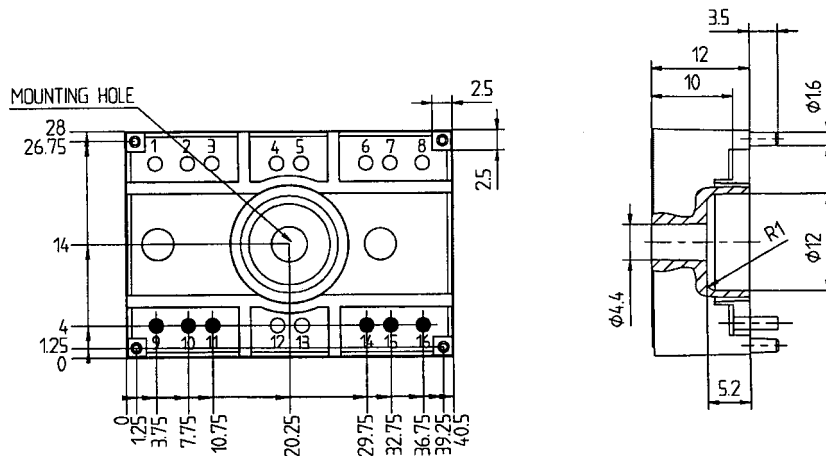
Characteristics					
Symbol	Conditions ¹⁾	min.	typ.	max.	Units
V_{CEsat}	$I_C = 5\text{ A}; T_j = 25\text{ (125) °C}$	–	2,1(2,2)	2,7(2,8)	V
$t_{d(on)}$	$V_{CC} = 300\text{ V}; V_{GE} = \pm 15\text{ V}$	–	70	–	ns
t_r	$I_C = 5\text{ A}, T_j = 125\text{ °C}$	–	40	–	ns
$t_{d(off)}$	$R_{Gon} = R_{Goff} = 200\text{ }\Omega$	–	470	–	ns
t_f	inductive load	–	75	–	ns
$E_{on} + E_{off}$		–	0,53	–	mJ
C_{ies}	$V_{CE} = 25\text{ V}; V_{GE} = 0\text{ V}, 1\text{ MHz}$	–	0,29	–	nF
R_{thjh}	per IGBT	–	–	2,6	K/W
Inverse Diode ²⁾					
$V_F = V_{EC}$	$I_F = 10\text{ A}; T_j = 25\text{ (125) °C}$	–	1,45(1,4)	1,7(1,7)	V
V_{TO}	$T_j = 125\text{ °C}$	–	0,85	0,9	V
r_T	$T_j = 125\text{ °C}$	–	55	80	m Ω
I_{RRM}	$I_F = 10\text{ A}; V_R = 300\text{ V}$	–	13	–	A
Q_{rr}	$di_F/dt = -200\text{ A}/\mu\text{s}$	–	1,5	–	μC
E_{off}	$V_{GE} = 0\text{ V}; T_j = 125\text{ °C}$	–	0,45	–	mJ
R_{thjh}	per Diode	–	–	2,3	K/W
Mechanical Data					
M_1	case to heatsink, SI units	–	–	–	Nm
	US units	–	–	–	lb.in.
w		–	–	–	g
Case	SEMITOP® 3		→ B 17 – 24		

SEMITOR® Cases

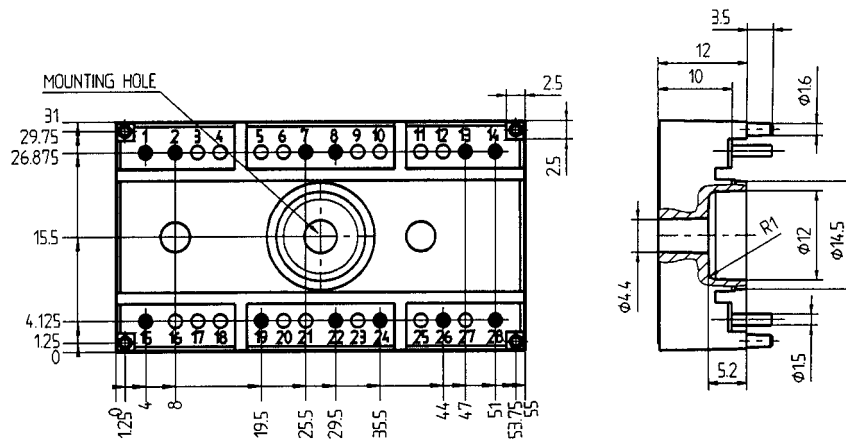
SEMITOR® 1



SEMITOR® 2



SEMITOR® 3



Dimensions in mm