

SEMITOP® 3

3-phase bridge rectifier + brake chopper

SK 55 DGL 126

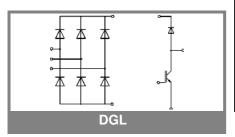
Preliminary Data

Features

- · Compact design
- · One screw mounting
- Heat transfer and isolation through direct copper bonded alumium oxide ceramic (DCB)
- Trench IGBT technology
- CAL Technology FWD

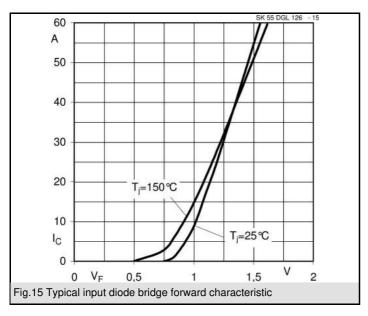
Typical Applications*

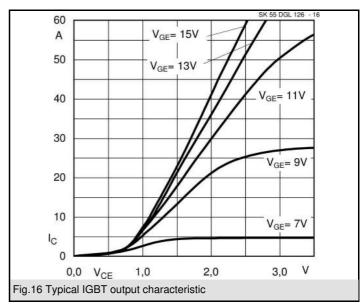
Rectifier

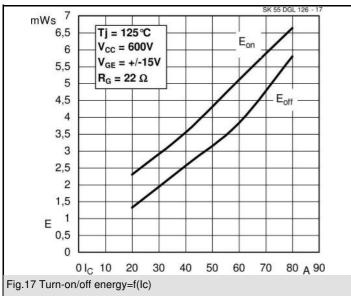


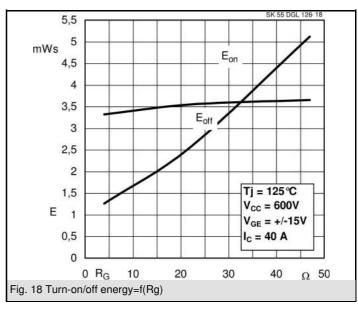
Absolute Maximum Ratings T _s = 25°C, unless otherwise specifications				
Symbol	Conditions	Values	Units	
IGBT - Chopper				
V_{CES}		1200	V	
I _C	T _s = 25 (80) °C	40 (32)	Α	
I _{CRM}	$I_{CRM} = 2 \times I_{Cnom}, t_p = 1 \text{ ms}$	70	Α	
V_{GES}		±20	V	
T _j		-40 + 150	°C	
Diode - Chopper				
I _F	T _s = 25 (80) °C	45 (35)	Α	
I _{FRM}	$I_{FRM} = 2xI_{Fnom}, t_p = 1 \text{ ms}$	100	Α	
T _j	·	-40 + 150	°C	
Rectifier				
V_{RRM}		1600	V	
I _D	T _s = 80 °C	55	Α	
I _{FSM} / I _{TSM}	$t_p = 10 \text{ ms}$, $\sin 180 ^{\circ}$, $T_i = 25 ^{\circ}$ C	370	Α	
I ² t	t _p = 10 ms , sin 180 ° ,T _i = 25 °C	685	A²s	
T _j	,	-40 + 150	°C	
T _{sol}	Terminals, 10s	260	°C	
T _{stg}		-40 + 125	°C	
V _{isol}	AC, 1 min. / 1s	2500 / 3000	V	

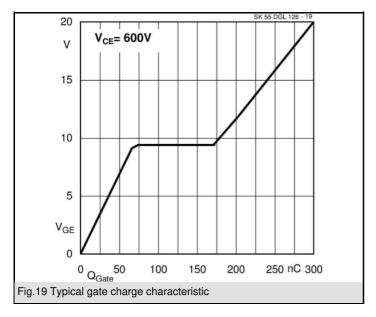
	2,1 6,5 1,2 26	Units			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	6,5 1,2	V			
$V_{GE(th)}$ $V_{GE} = V_{CE}$, $I_{C} = 1.5 \text{ mA}$ 5 5.8	6,5 1,2	V			
$V_{GE(th)}$ $V_{GE} = V_{CE}, I_{C} = 1,5 \text{ mA}$ 5 5,8	1,2				
$V_{CE(TO)}$ $T_i = 25 °C (125) °C$ 1 (0,9)		1/			
	26	V			
r_T $T_j = 25 °C (125) °C$ 20 (31)		mΩ			
$V_{CE} = 25 V_{GE} = 0 V, f = 1 MHz$ 2,4		nF			
$V_{CE} = 25 V_{GE} = 0 V, f = 1 MHz$ 0,5		nF			
$V_{CE} = 25 V_{GE} = 0 V, f = 1 MHz$ 0,4		nF			
R _{th(j-s)} per IGBT	1,05	K/W			
$t_{d(on)}$ under following conditions 85		ns			
t_r $V_{CC} = 600 \text{ V}, V_{GE} = \pm 15 \text{ V}$ 30		ns			
$I_{c} = 30 \text{ A}, T_{j} = {}^{\circ}\text{C}$		ns			
$R_{Gon} = R_{Goff} = 22 \Omega$		ns			
E _{on} inductive load 4,6		mJ			
E _{off} 4,3		mJ			
Diode - Chopper					
$V_F = V_{EC}$ $I_F = 45 \text{ A}, T_j = () ^{\circ}\text{C}$ 1,5 (1,5)	1,77 (1,77)	V			
$V_{(TO)} \qquad T_j = {^{\circ}C} (125) {^{\circ}C} $ (0,92)		V			
$ \mathbf{r}_{T} = {^{\circ}\mathbf{C}} (125) {^{\circ}\mathbf{C}} $ (13,4)		mΩ			
R _{th(j-s)} per diode	1,2	K/W			
I _{RRM} under following conditions 30		Α			
$ Q_{rr} $ $ I_F = 50 \text{ A}, V_R = 600 \text{ V}$ 10		μC			
$V_{GE} = 0 \text{ V}, T_j = {}^{\circ}\text{C}$		mJ			
di _{F/dt} = 500 A/μs					
Diode rectifier					
V_F $I_F = 25 \text{ A}, T_j = () ^{\circ}\text{C}$	1,25	V			
$V_{(TO)}$ $T_j = 150 ^{\circ}\text{C}$ 0,8		V			
$ r_T T_j = 150 ^{\circ}C $ 13		mΩ			
R _{th(j-s)} per diode 2		K/W			
Temperatur sensor					
$R_{ts} \qquad \qquad \%, T_r = () °C \qquad \qquad ()$		Ω			
Mechanical data					
w 30		g			
M _s Mounting torque	2,5	Nm			

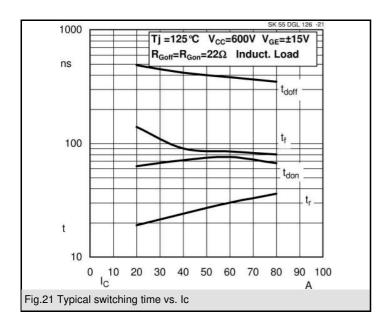


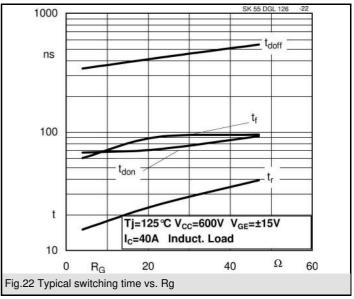


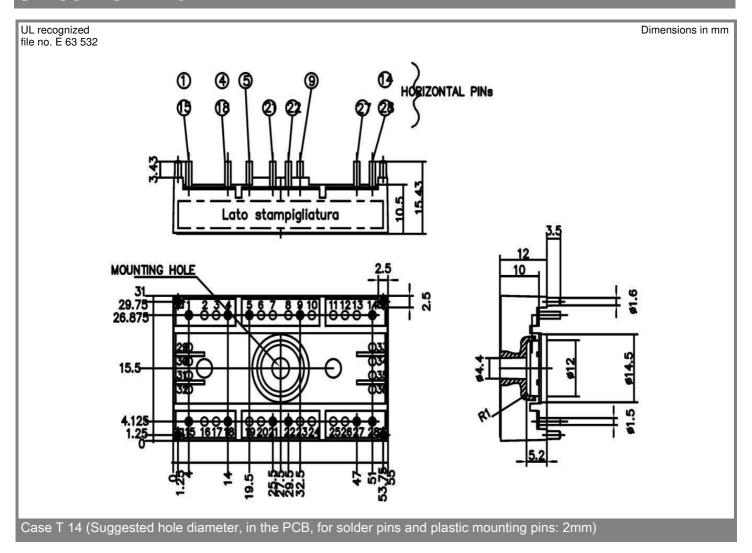


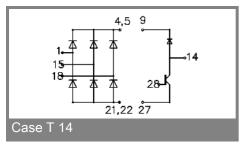












This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* 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 staff.