



Power Bridge Rectifiers

SKD 51

Features

- Glass passivated silicon chips
- Fast-on terminals for pcb solder or plug on connections
- Sturdy insulated metal base plate
- Low thermal impedance through use of direct copper bonded aluminum substrate
- Blocking voltage up to 1800V
- High surge currents
- UL recognized, file no. E63 532

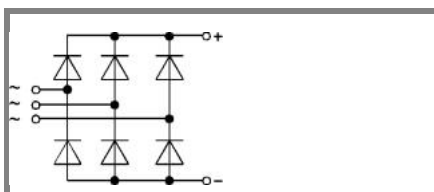
Typical Applications

- Three phase rectifier for power supplies
- Input rectifier for variable frequency drives
- Rectifier for DC motor field supplies
- Battery charger rectifiers
- Recommended snubber network:
RC: 0.1 μ F, 50 Ω ($P_R = 1$ W)

1) For solder connection. Permissible current for plug connection see DIN IEC 760E and DIN 46249 part 1

2) Freely suspended or mounted on an insulator

3) Mounted on a painted metal sheet of min. 250 x 250 x 1 mm



SKD

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_D = 50^{(1)}$ A (full conduction) ($T_c = 127^\circ\text{C}$)
500	400	SKD 51/04
900	800	SKD 51/08
1300	1200	SKD 51/12
1500	1400	SKD 51/14
1700	1600	SKD 51/16
1900	1800	SKD 51/18

Symbol	Conditions	Values	Units
I_D	$T_c = 127^\circ\text{C}$	50	A
	$T_a = 45^\circ\text{C}$; isolated ²⁾	7	A
	$T_a = 45^\circ\text{C}$; chassis ³⁾	18	A
	$T_a = 45^\circ\text{C}$; R4A/120	27	A
	$T_a = 45^\circ\text{C}$; P5A/100	31	A
I_{FSM}	$T_{vj} = 25^\circ\text{C}$; 10 ms	775	A
	$T_{vj} = 150^\circ\text{C}$; 10 ms	700	A
i^2t	$T_{vj} = 25^\circ\text{C}$; 8,3 ... 10 ms	3000	A ² s
	$T_{vj} = 150^\circ\text{C}$; 8,3 ... 10 ms	2450	A ² s
V_F	$T_{vj} = 25^\circ\text{C}$; $I_F = 75$ A	max. 1,45	V
$V_{(TO)}$	$T_{vj} = 150^\circ\text{C}$	0,8	V
r_T	$T_{vj} = 150^\circ\text{C}$	8,5	m Ω
I_{RD}	$T_{vj} = 25^\circ\text{C}$; $V_{DD} = V_{DRM}$; $V_{RD} = V_{RRM}$	max. 0,2	mA
	$T_{vj} = 150^\circ\text{C}$; $V_{RD} = V_{RRM}$	4	mA
t_{rr}	$T_{vj} = 25^\circ\text{C}$; $I_F = I_R = 1$ A	5	μ s
$R_{th(j-c)}$	per diode	1,1	K/W
	total	0,183	K/W
	$R_{th(c-s)}$ total	0,1	K/W
	$R_{th(j-a)}$ isolated ²⁾ (chassis ³⁾)	9 (3,15)	K/W
	T_{vj}	- 40 ... +150	$^\circ\text{C}$
T_{stg}	- 40 ... +125	$^\circ\text{C}$	
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min. to heatsink	3600 (3000)	V
M_s		4,5 \pm 15 %	Nm
M_t			
m		97	g
Case		G 51	

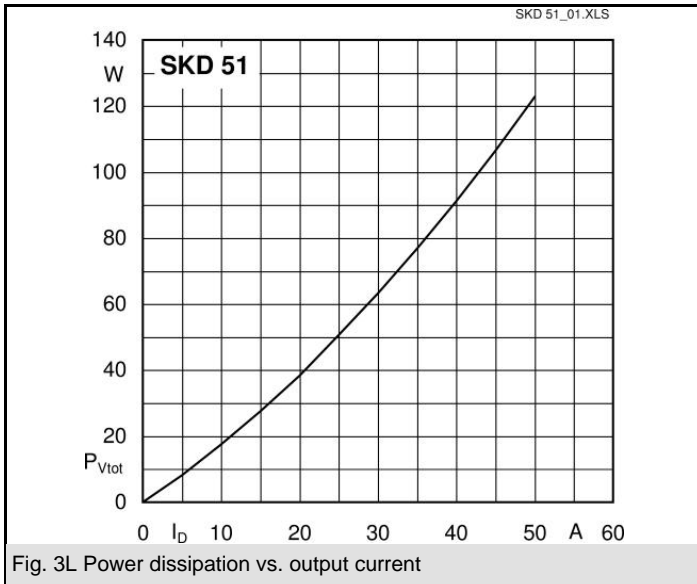


Fig. 3L Power dissipation vs. output current

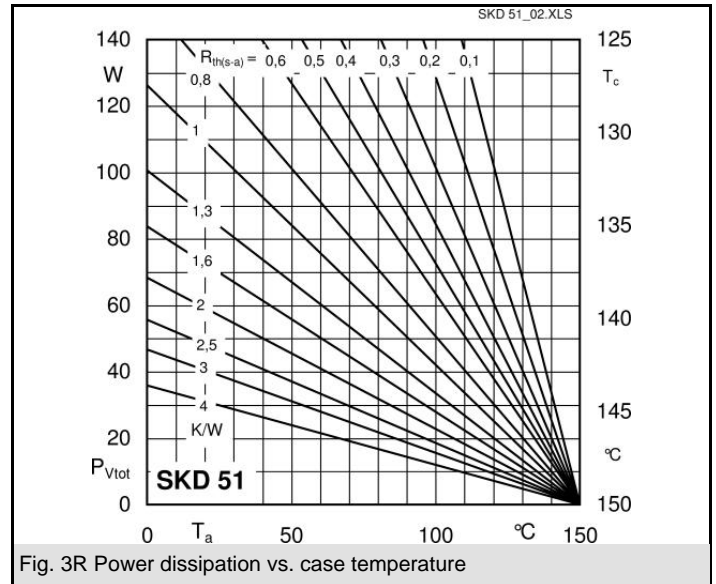


Fig. 3R Power dissipation vs. case temperature

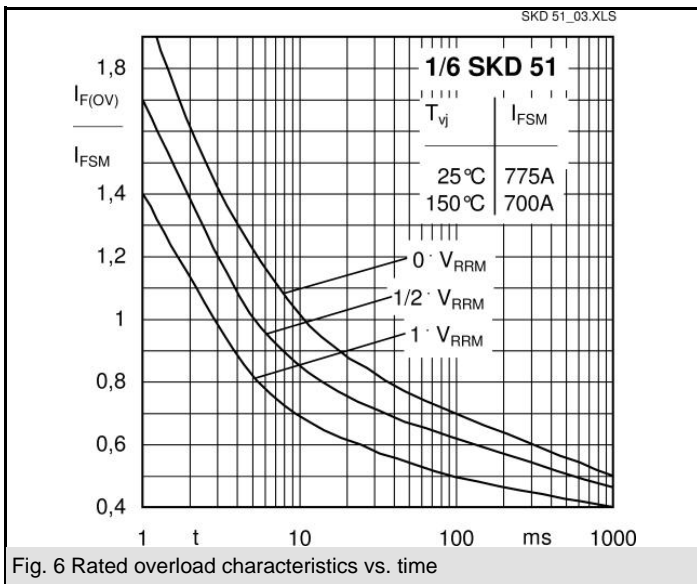
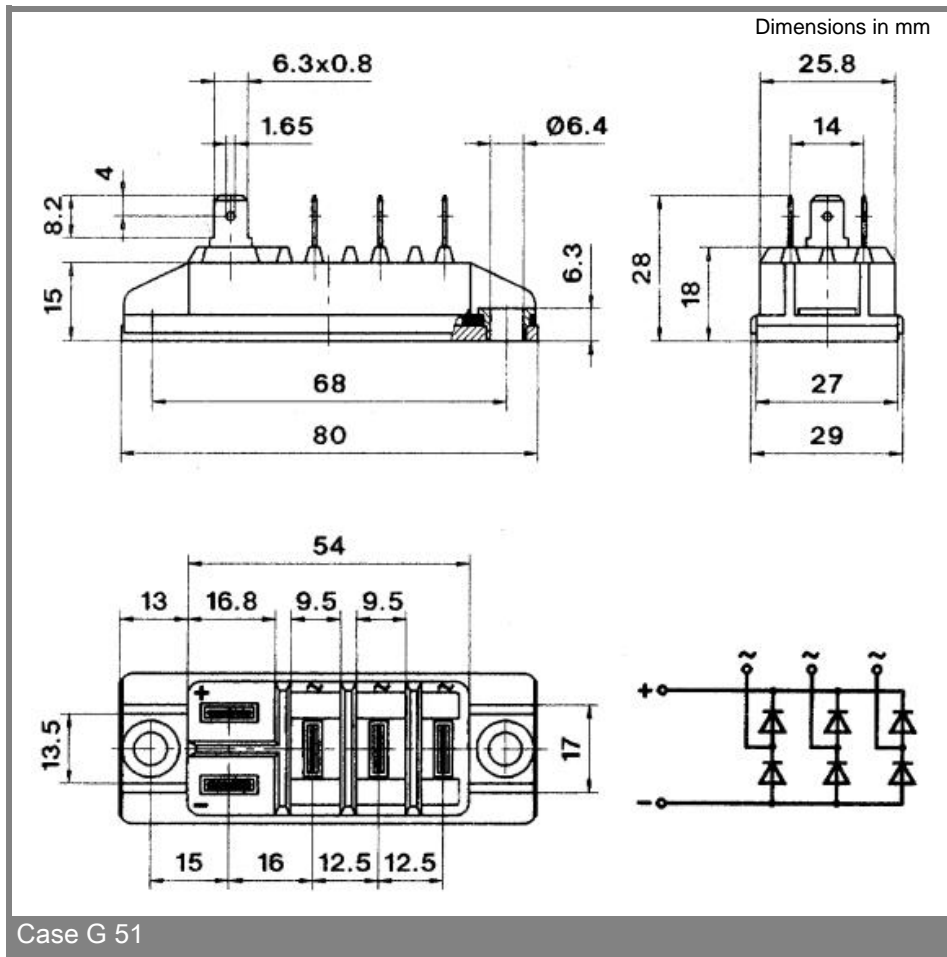


Fig. 6 Rated overload characteristics vs. time



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