

SEMIPONT™ 5

Half Controlled 3-phase Bridge Rectifier

SKDH 115

Target Data

Features

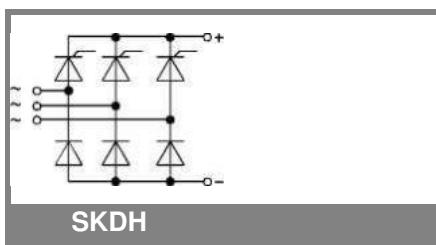
- Compact design
- Two screws mounting
- Heat transfer and isolation through direct copper board (low R_{th})
- Low resistance in steady-state and high reliability
- High surge currents
- UL -recognized, file no. E 63 532

Typical Applications*

- For DC drives with a fixed direction of rotation
- Controlled field rectifier for DC motors
- Controlled battery charger

V_{RSM}	V_{RRM}, V_{DRM}	$I_D = 110 \text{ A (full conduction)}$ ($T_s = 80^\circ\text{C}$)
V	V	$(T_s = 80^\circ\text{C})$ SKDH 115/12
1200	1200	SKDH 115/16
1600	1600	

Symbol	Conditions	Values	Units
I_D	$T_s = 80^\circ\text{C}$	110	A
I_{TSM}, I_{FSM}	$T_{vj} = 25^\circ\text{C}; 10 \text{ ms}$ $T_{vj} = 125^\circ\text{C}; 10 \text{ ms}$	1050 950	A
i^2t	$T_{vj} = 25^\circ\text{C}; 8,3 \dots 10 \text{ ms}$ $T_{vj} = 125^\circ\text{C}; 8,3 \dots 10 \text{ ms}$	5500 4500	A^2s A^2s
V_T, V_F	$T_{vj} = 25^\circ\text{C}; I_T, I_F = 120\text{A}$	max. 1,8	V
$V_{T(TO)} / V_{F(TO)}$	$T_{vj} = 125^\circ\text{C};$	max. 1,1	V
r_T	$T_{vj} = 125^\circ\text{C}$	max. 6	$\text{m}\Omega$
I_{DD}, I_{RD}	$T_{vj} = 125^\circ\text{C}; V_{DD} = V_{DRM}; V_{RD} = V_{RRM}$	max. 20	mA
t_{gd}	$T_{vj} = 0^\circ\text{C}; I_G = A; di_G/dt = A/\mu\text{s}$		μs
t_{gr}	$V_D = \cdot V_{DRM}$		μs
$(dv/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}$	max. 1000	$\text{V}/\mu\text{s}$
$(di/dt)_{cr}$	$T_{vj} = 125^\circ\text{C}; f = 50 \dots 60 \text{ Hz}$	max. 50	$\text{A}/\mu\text{s}$
t_q	$T_{vj} = 125^\circ\text{C}; \text{typ.}$	150	μs
I_H	$T_{vj} = 25^\circ\text{C}; \text{typ. / max.}$	- / 200	mA
I_L	$T_{vj} = 25^\circ\text{C}; R_G = 33 \Omega$	- / 400	mA
V_{GT}	$T_{vj} = 25^\circ\text{C}; \text{d.c.}$	min. 3	V
I_{GT}	$T_{vj} = 25^\circ\text{C}; \text{d.c.}$	min. 150	mA
V_{GD}	$T_{vj} = 125^\circ\text{C}; \text{d.c.}$	max. 0,25	V
I_{GD}	$T_{vj} = 125^\circ\text{C}; \text{d.c.}$	max. 5	mA
$R_{th(j-s)}$	per thiristor / diode	0,84	K/W
T_{vj}		- 40 ... + 125	$^\circ\text{C}$
T_{stg}		- 40 ... + 125	$^\circ\text{C}$
T_{solder}	terminals	260	$^\circ\text{C}$
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 (3000)	V
M_s	to heatsink	2,5	Nm
M_t		75	Nm
m	approx.		g
Case	SEMIPONT 5	G 61	



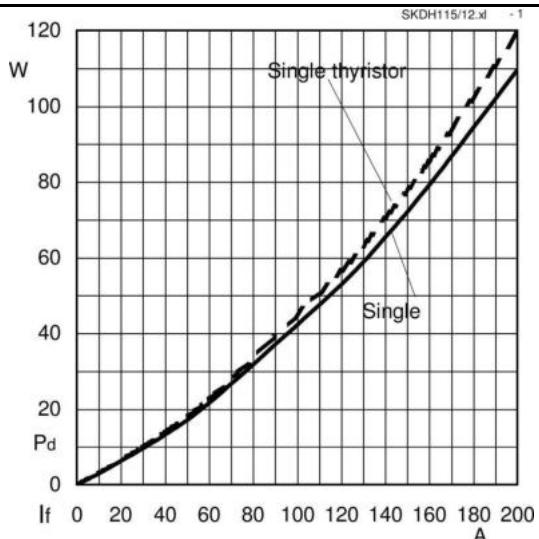


Fig. 1 Power dissipation vs. output current

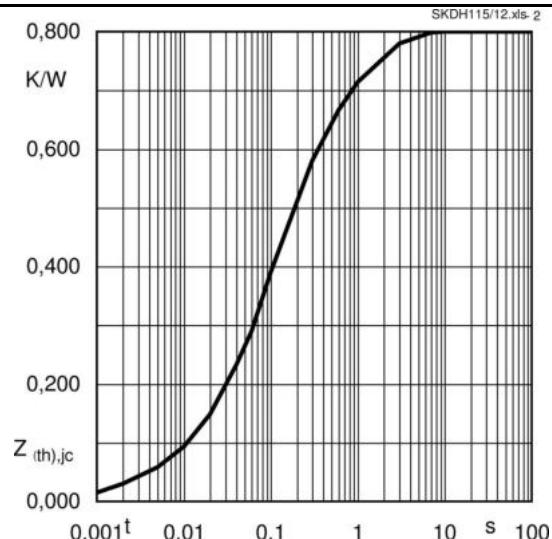


Fig. 2 Transient thermal impedance vs. time

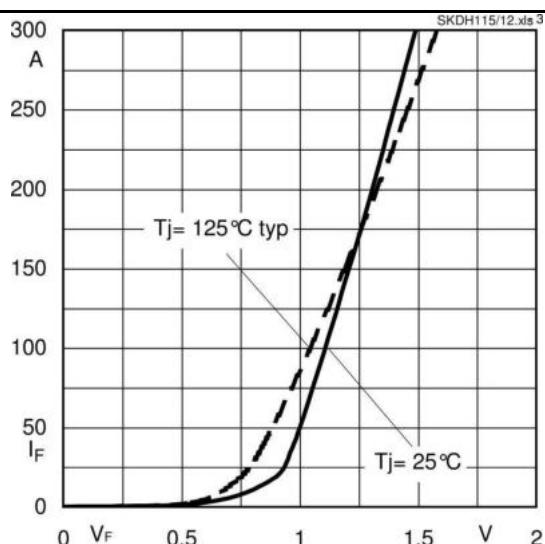


Fig. 3 Single diode on-state characteristic

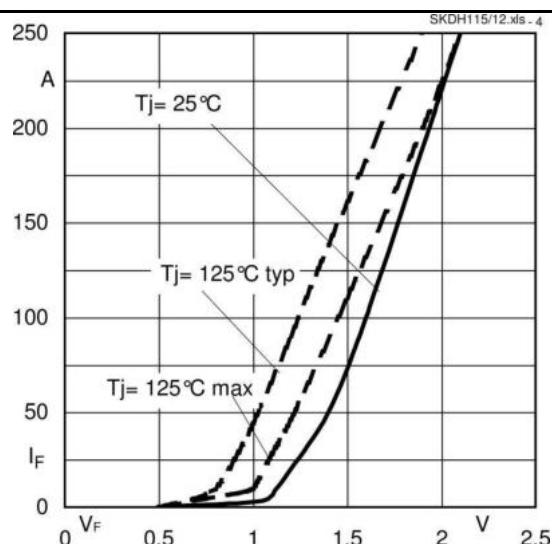


Fig. 4 Single thyristor on-state characteristic

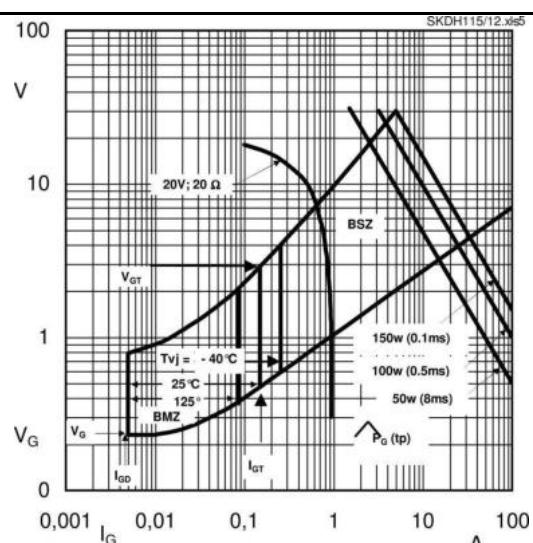


Fig. 5 Gate trigger characteristic

