

SEMIPONT™ 5

Half Controlled 3-phase Bridge Rectifier

SKDH 115

Target Data

Features

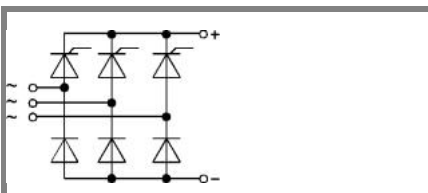
- Compact design
- Two screws mounting
- Heat transfer and isolation through direct copper board (low R_{th})
- Low resistance in steady-state and high reliability
- High surge currents
- UL -recognized, file no. E 63 532

Typical Applications

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

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

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



SKDH

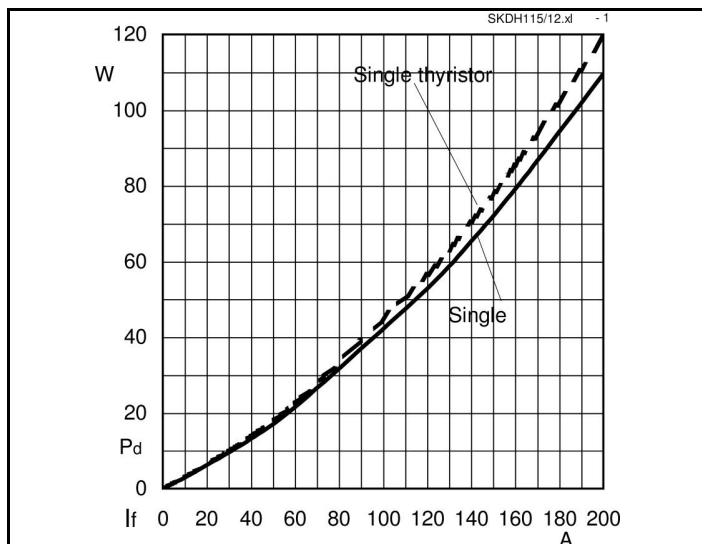


Fig. 1 Power dissipation vs. output current

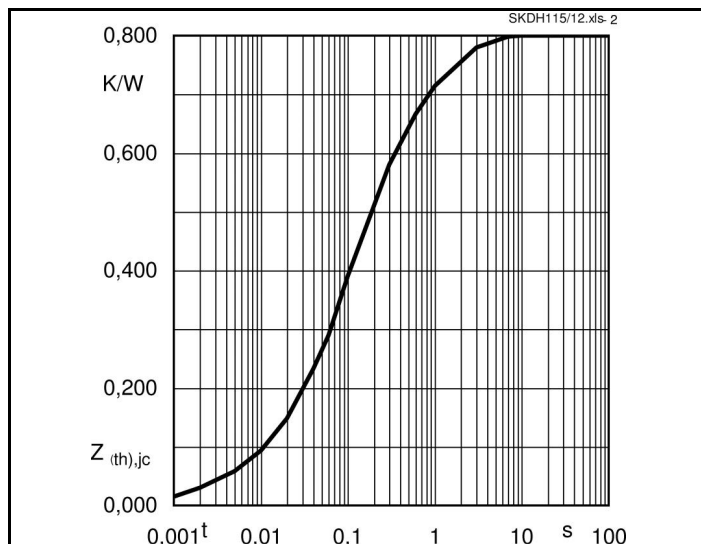


Fig. 2 Transient thermal impedance vs. time

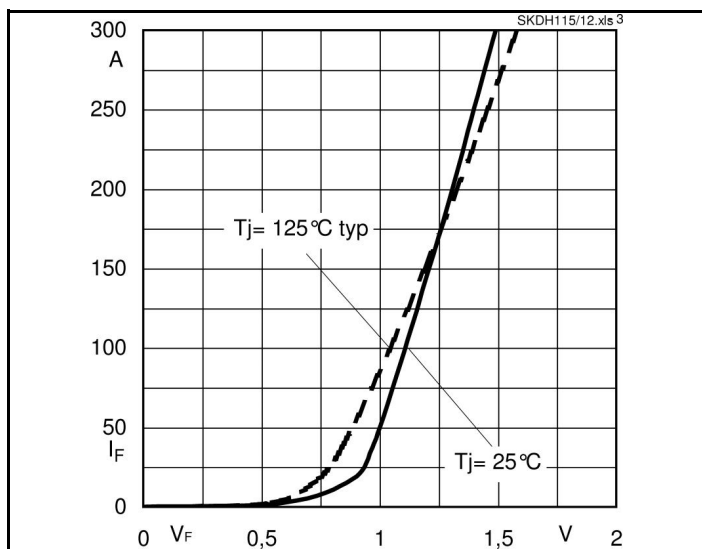


Fig. 3 Single diode on-state characteristic

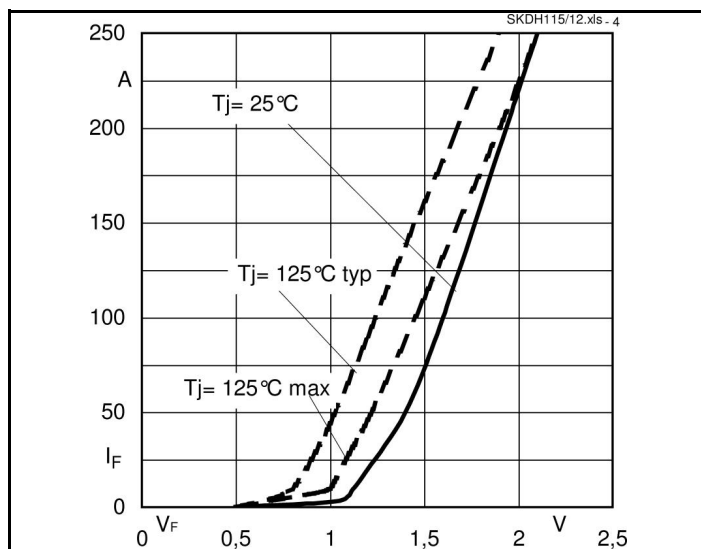


Fig. 4 Single thyristor on-state characteristic

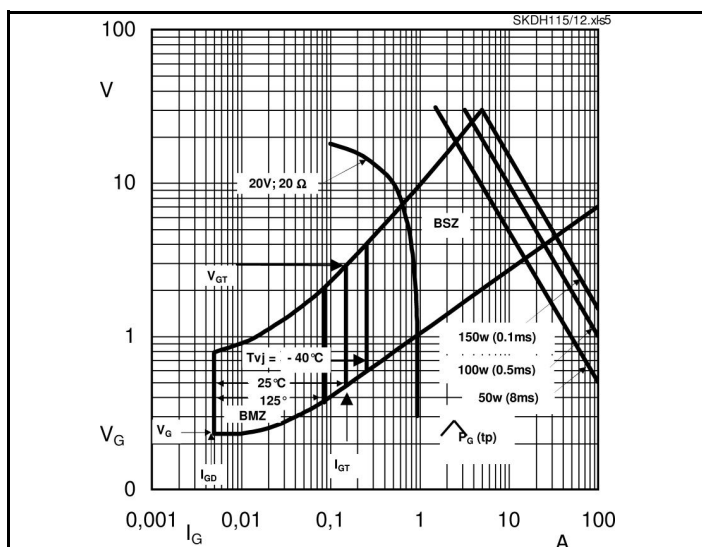
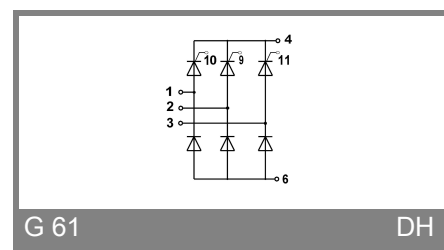
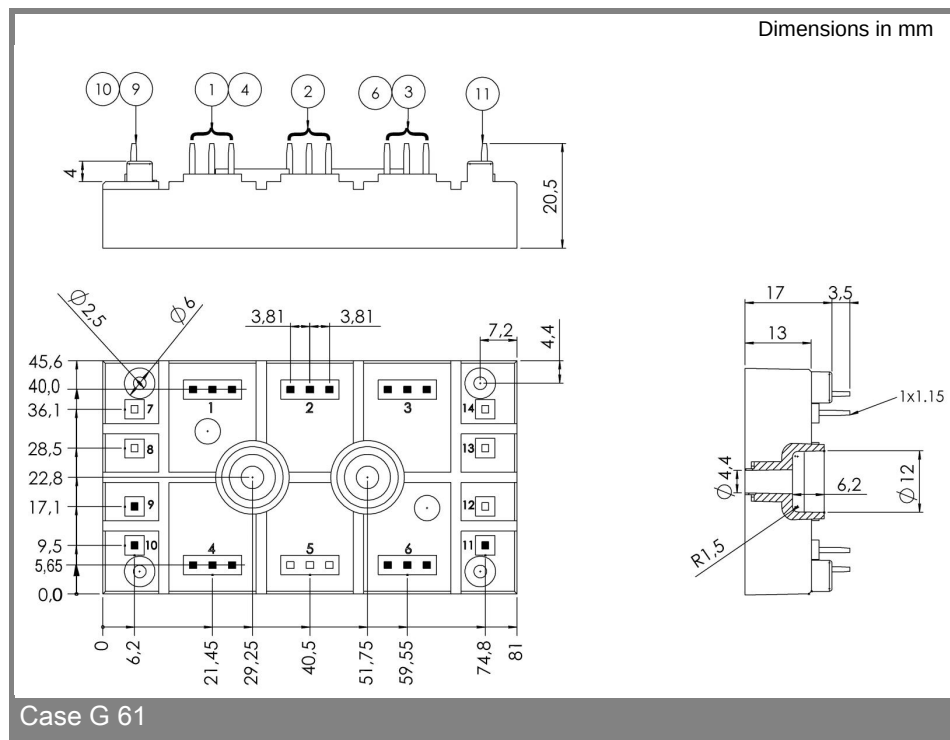


Fig. 5 Gate trigger characteristic



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