

**SEMIPONT™ 5**

## Half Controlled 3-phase Bridge Rectifier

### SKDH 115

Target Data

### Features

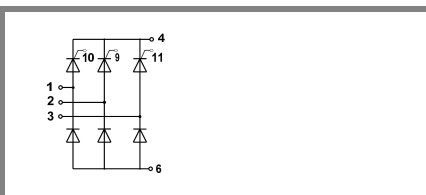
- Compact design
- Two screws mounting
- Heat transfer and isolation through direct copper board (low  $R_{th}$ )
- Low resistance in steady-state and high reliability
- High surge currents
- UL -recognized, file no. E 63 532

### 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 <sup>2</sup> s A <sup>2</sup> s
$V_T, V_F$	$T_{vj} = 25$ °C; $I_T, I_F = 120$ A	max. 1,8	V
$V_{T(TO)} / V_{F(TO)}$	$T_{vj} = 125$ °C;	max. 1,1	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
$t_{gd}$	$T_{vj} = 25$ °C; $I_G = 1$ A; $di_G/dt = 1$ A/μs		μs
$t_{gr}$	$V_D = \cdot V_{DRM}$		μs
$(dv/dt)_{cr}$	$T_{vj} = 125$ °C	max. 500	V/μs
$(di/dt)_{cr}$	$T_{vj} = 125$ °C; $f = 50...60$ Hz	max. 50	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
$V_{GT}$	$T_{vj} = 25$ °C; d.c.	min. 3	V
$I_{GT}$	$T_{vj} = 25$ °C; d.c.	min. 150	mA
$V_{GD}$	$T_{vj} = 125$ °C; d.c.	max. 0,25	V
$I_{GD}$	$T_{vj} = 125$ °C; d.c.	max. 5	mA
$R_{th(j-s)}$	per thyristor / diode	0,84	K/W K/W K/W
$T_{vj}$		- 40 ... + 125	°C
$T_{stg}$		- 40 ... + 125	°C
$T_{solder}$	terminals	260	°C
$V_{isol}$	a. c. 50 Hz; r.m.s.; 1 s / 1 min. to heatsink	3600 ( 3000 )	V
$M_s$		2,5	Nm
$M_t$			Nm
$m$	approx.	75	g
Case	SEMIPONT 5	G 61	



**SKDH**

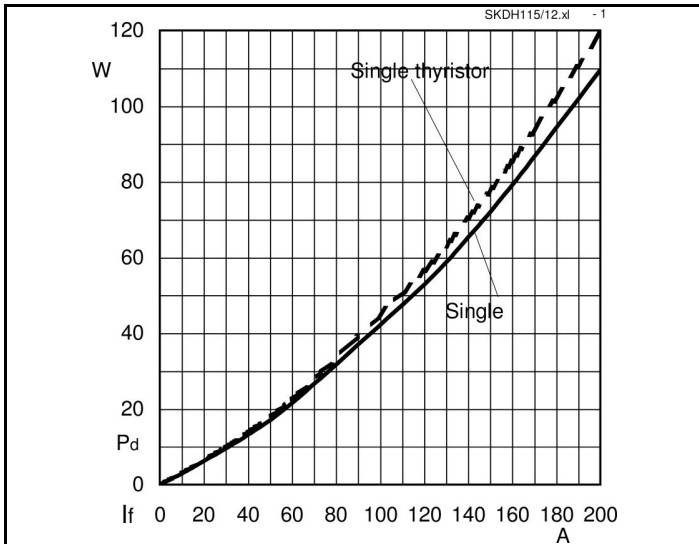


Fig. 1 Power dissipation vs. output current

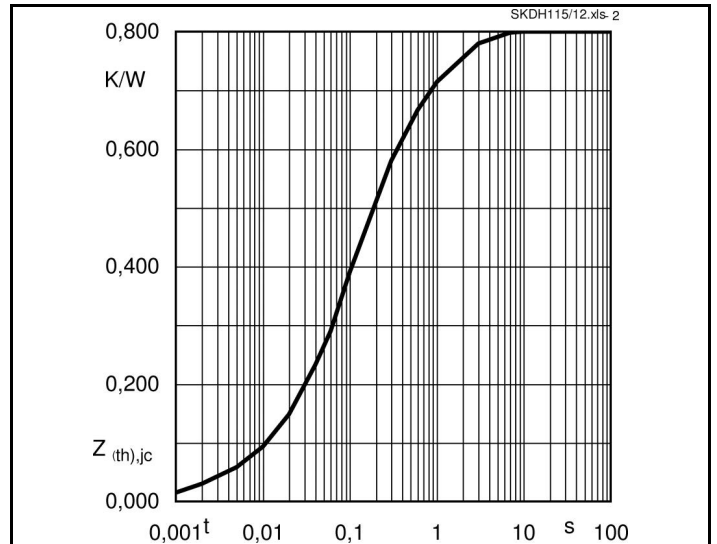


Fig. 2 Transient thermal impedance vs. time

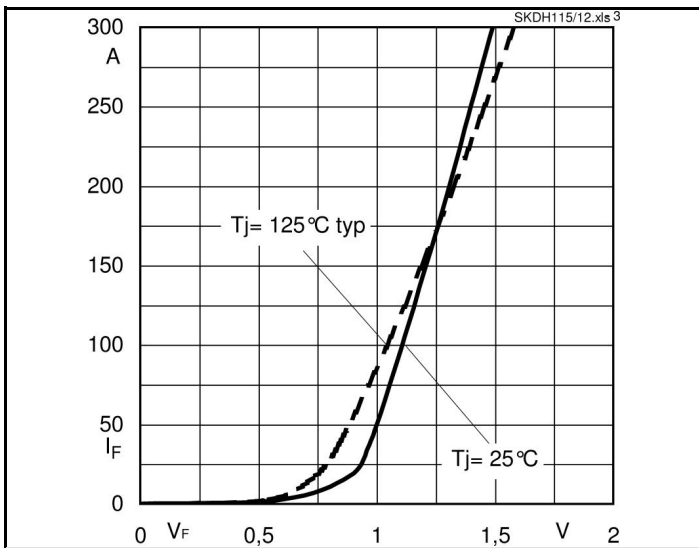


Fig. 3 Single diode on-state characteristic

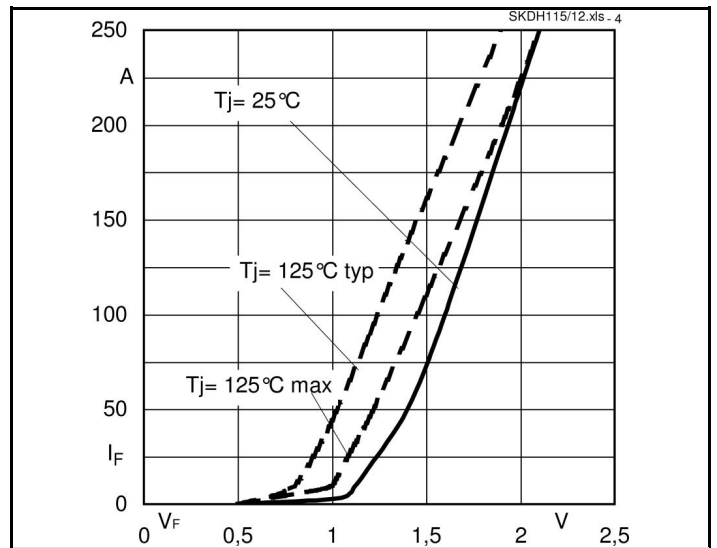


Fig. 4 Single thyristor on-state characteristic

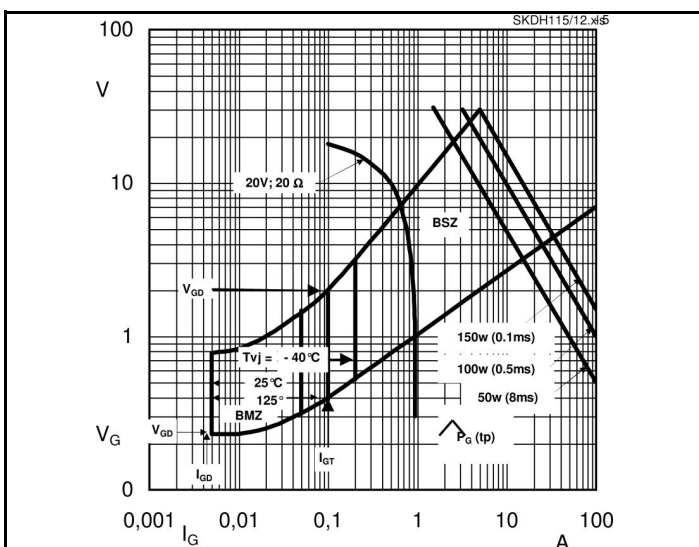
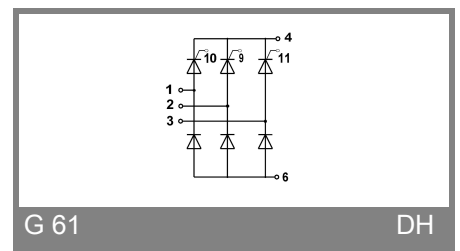
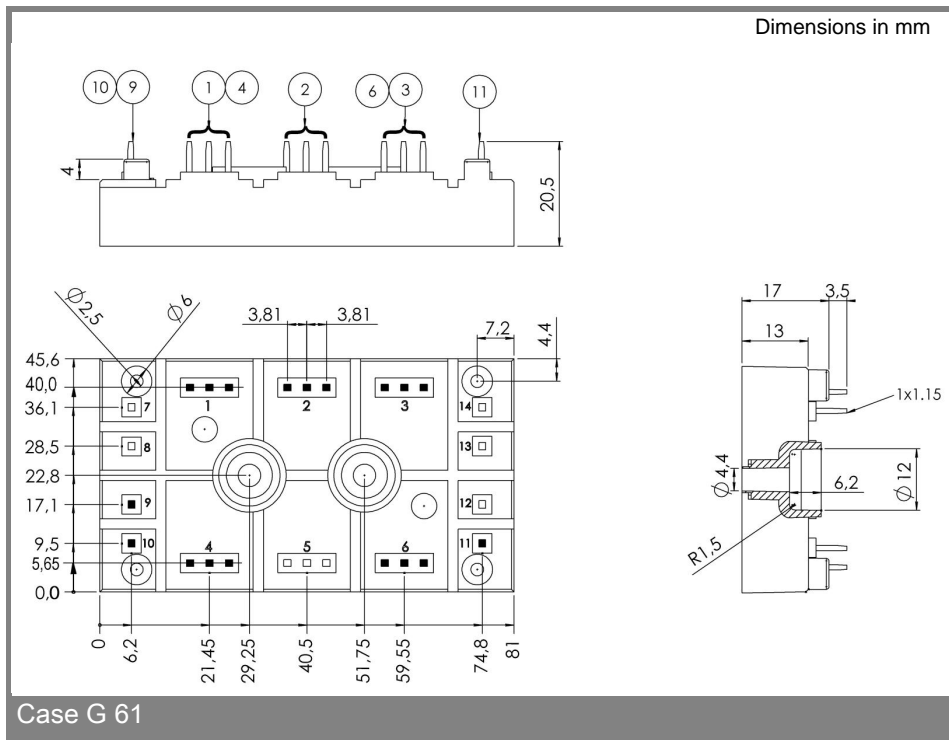


Fig. 5 Gate trigger characteristic



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