

**SEMIPONT™ 5**

## Half Controlled 3-phase Bridge Rectifier

### SKDH 115

Target Data

### Features

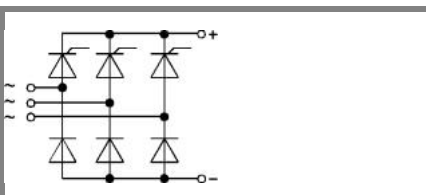
- Compact design
- Two screws mounting
- Heat transfer and isolation through direct copper board (low  $R_{th}$ )
- Low resistance in steady-state and high reliability
- High surge currents
- UL -recognized, file no. E 63 532

### 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; $I_G = A; di_G/dt = A/\mu s$		μs
$t_{gr}$	$V_D = \cdot V_{DRM}$		μs
$(dv/dt)_{cr}$	$T_{vj} = 125$ °C	max. 1000	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**

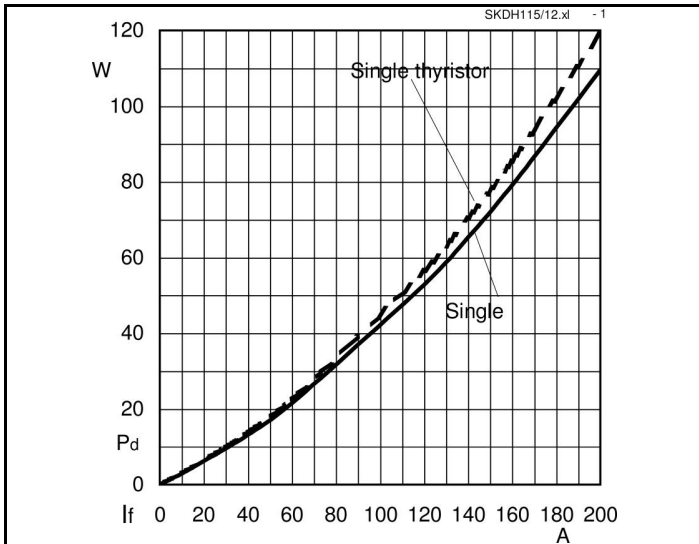


Fig. 1 Power dissipation vs. output current

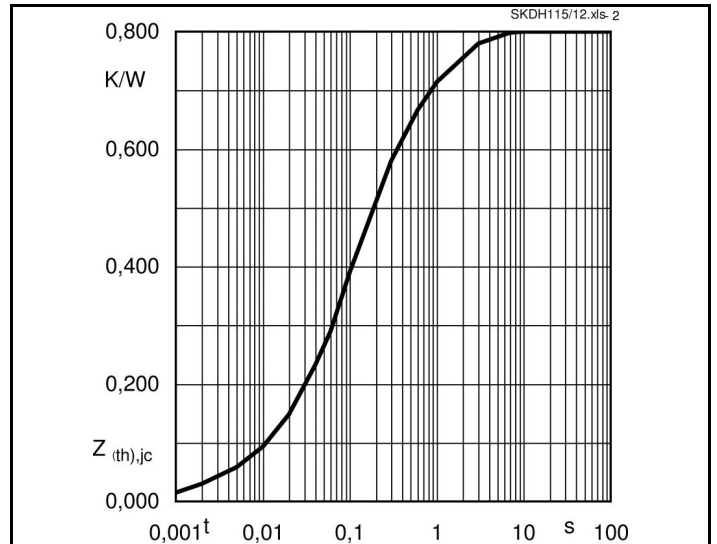


Fig. 2 Transient thermal impedance vs. time

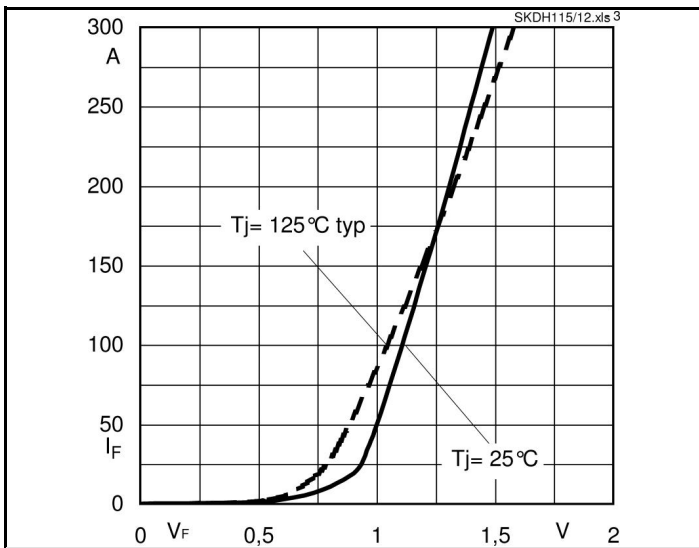


Fig. 3 Single diode on-state characteristic

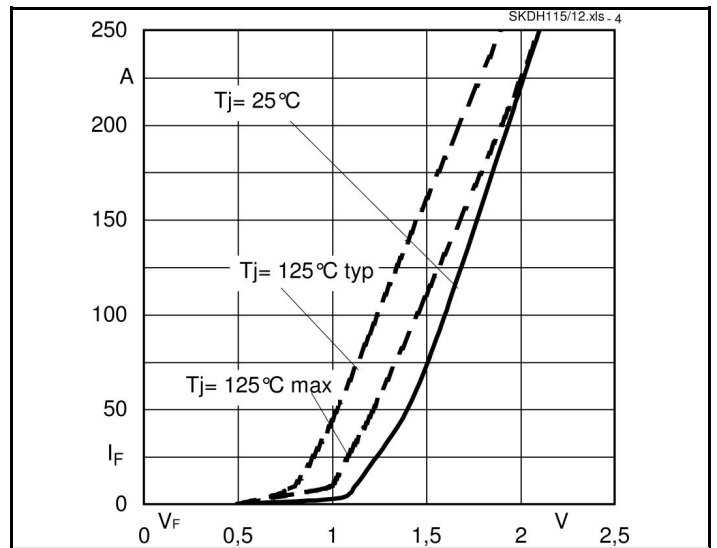


Fig. 4 Single thyristor on-state characteristic

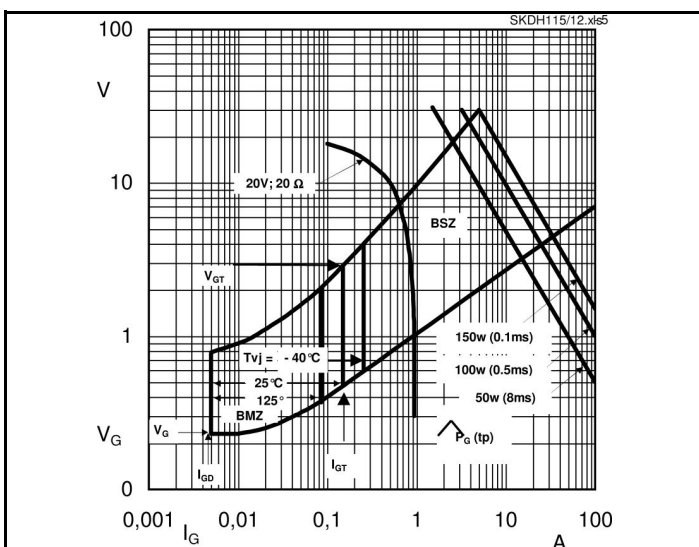
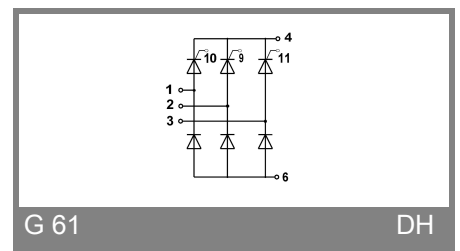
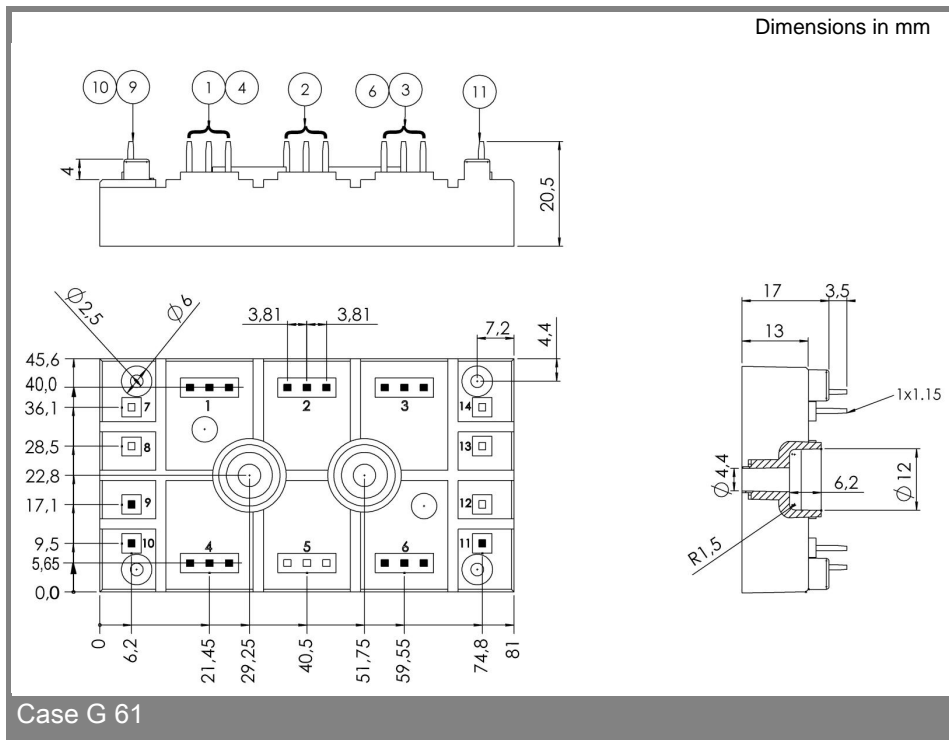


Fig. 5 Gate trigger characteristic

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\* 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 personal.