

Symbol	Conditions	Values	Units
$V_{CEVsus}$	$I_C = 1\text{ A}, V_{BE} = -2\text{ V}$	1200	V
$V_{CEV}$	$V_{BE} = -2\text{ V}$	1200	V
$V_{CBO}$	$I_E = 0$	1200	V
$V_{EBO}$	$I_C = 0$	7	V
$I_C$	D. C.	300	A
$I_F = -I_C$	D. C.	300	A
$I_B$		16	A
$P_{tot}$	$T_{case} = 25\text{ °C}$	1980	W
$T_{vj}$		-40 ... +150	°C
$T_{stg}$		-40 ... +125	°C
$V_{isol}$	a. c. 50 Hz, r.m.s.	2500~	V

Thermal Characteristics

$R_{thjc}$	darlington	0,063	°C/W
$R_{thjc}$	diode	0,3	°C/W
$R_{thch}$	module	0,04	°C/W

Electrical Characteristics<sup>1)</sup>

		min.	typ.	max.	
$I_{CEV}$	$V_{CE} = V_{CEV}, V_{BE} = -2\text{ V}$			4	mA
$I_{EBO}$	$I_C = 0, V_{BE} = -7\text{ V}$			400	mA
$V_{CEsat}^{2)}$	$I_C = 300\text{ A}, I_B = 6\text{ A}$			3	V
$V_{BEsat}^{2)}$	$I_C = 300\text{ A}, I_B = 6\text{ A}$			3,5	V
$h_{21E}^{2)}$	$I_C = 300\text{ A}; V_{CE} = 5\text{ V}$	75			

Switching Characteristics for Resistive Load<sup>1)</sup>

$t_{on}$	$I_C = 300\text{ A}$ $I_{B1} = -I_{B2} = 6\text{ A}$ $V_{CC} = 600\text{ V}$			3	µs
$t_s$				15	µs
$t_f$				3	µs

Inverse Diode Characteristics<sup>1)</sup>

$V_F = -V_{CE}$	$I_F = -I_C = 300\text{ A}$			1,8	V
$I_{FSM} = -I_{Cp}$	sin 180°, 10 ms	3000			A
$I_{RM}$	$I_F = -I_C = 300\text{ A}, -di_F/dt = 100\text{ A/µs}$ $V_{BE} = -3\text{ V}, V_R = V_{CE} = 400\text{ V},$ $T_{vj} = 125\text{ °C}$			50	A
$Q_{rr}$				25	µC

Mechanical Data

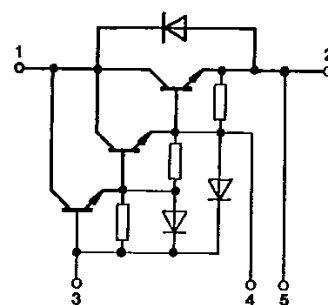
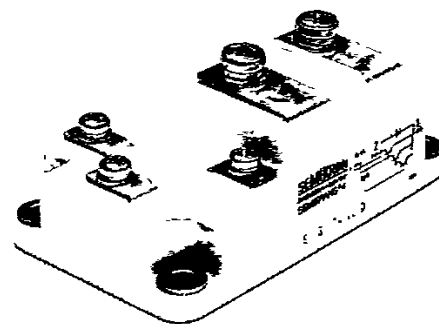
$M_1$	Case to heatsink	SI units	3		6	Nm	
		US units	27		53	lb. in.	
$M_2$	Busbars to	terminals 1, 2	SI units	2,5		5	Nm
			US units	22		44	lb. in.
		terminals 3 ... 5	SI units	1,1		2	Nm
			US units	10		18	lb. in.
$w$				475		g	
Case				D 18			

<sup>1)</sup>  $T_{case} = 25\text{ °C}$  unless otherwise stated  
<sup>2)</sup>  $t_p \leq 300\text{ µs}, D \leq 1,5\%$

SEMITRANS® 4 NPN  
 Power Darlington Modules  
 300 A, 1200 V

SK 300 DA 120 D

T.33-35



Features

- Isolated baseplate (ease of mounting of one or several modules on one heatsink)
- All electrical connections on top (ease of interconnecting of modules with busbars)
- Large clearances and creepage distances
- Parallel connected fast recovery inverse diode
- UL recognized, file no. E 63 532

Typical Applications

- Uninterruptible power supplies (UPS)
- DC drives
- AC motor controls

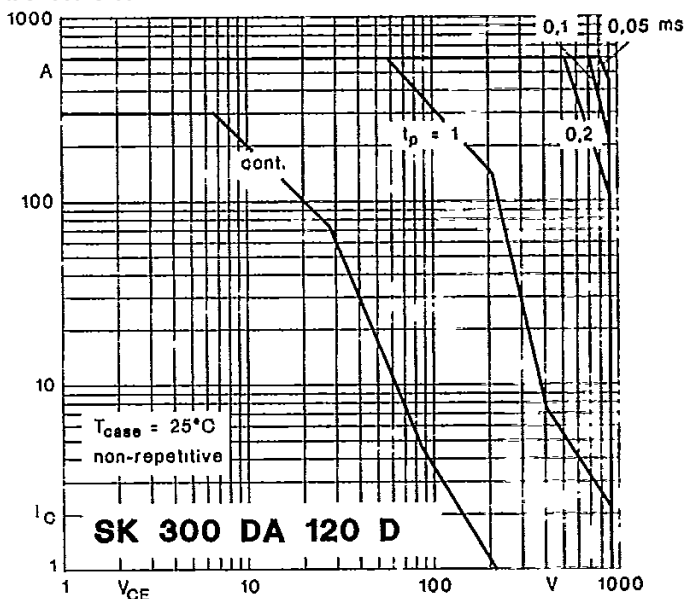


Fig. 1 Forward biased safe operating area (FBSOA)

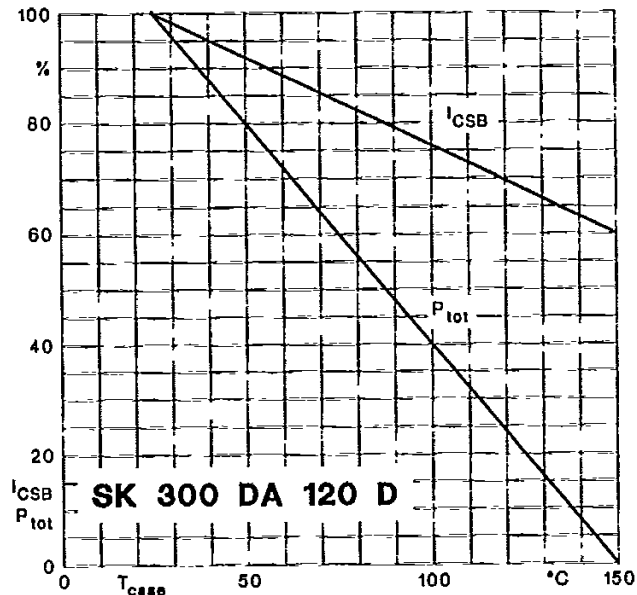


Fig. 2 Shifting the limits of the FBSOA with temperature

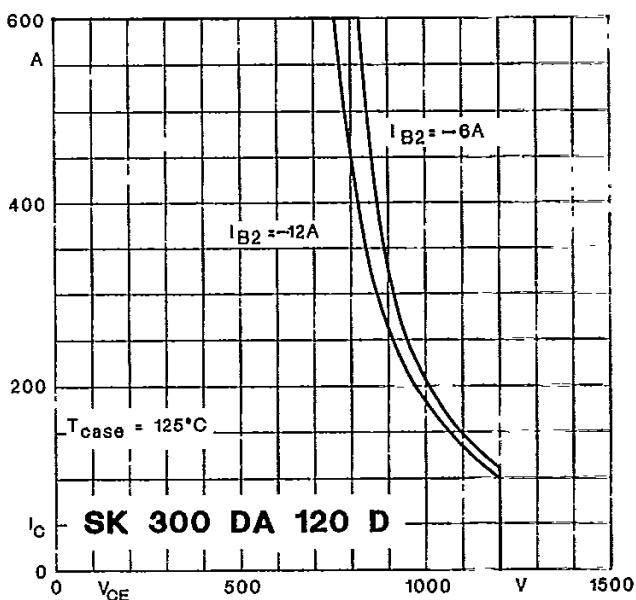


Fig. 3 Reverse biased safe operating area (RBSOA)

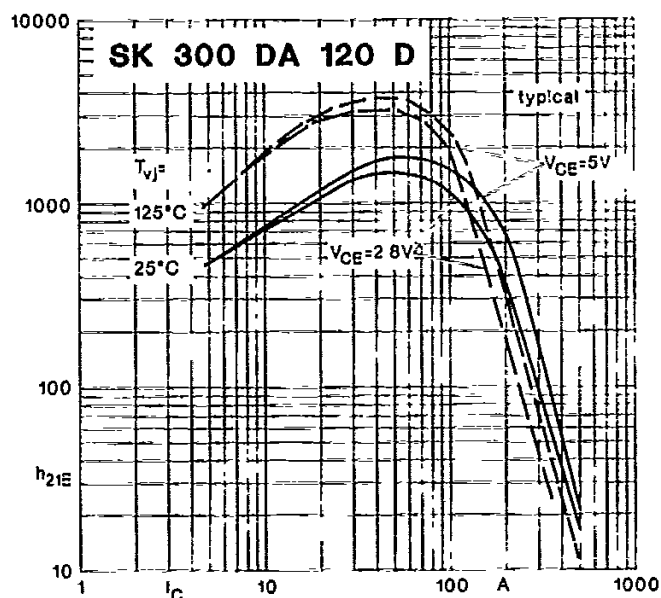


Fig. 4 Forward current transfer ratio vs. coll. current

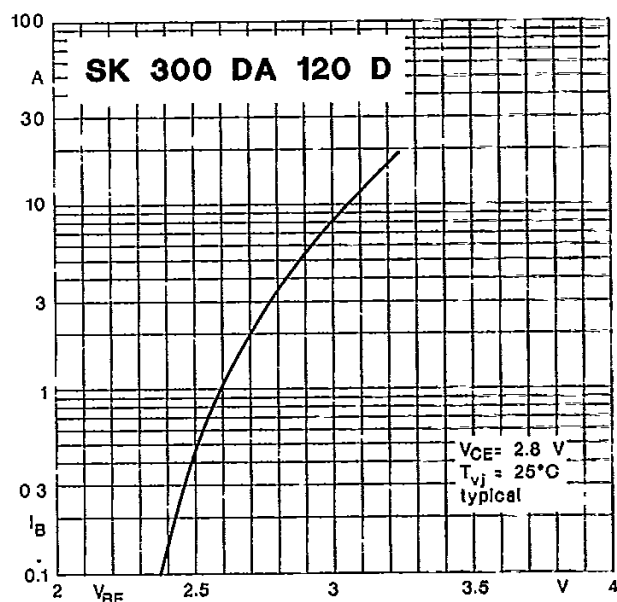


Fig. 5 Base current/voltage characteristic

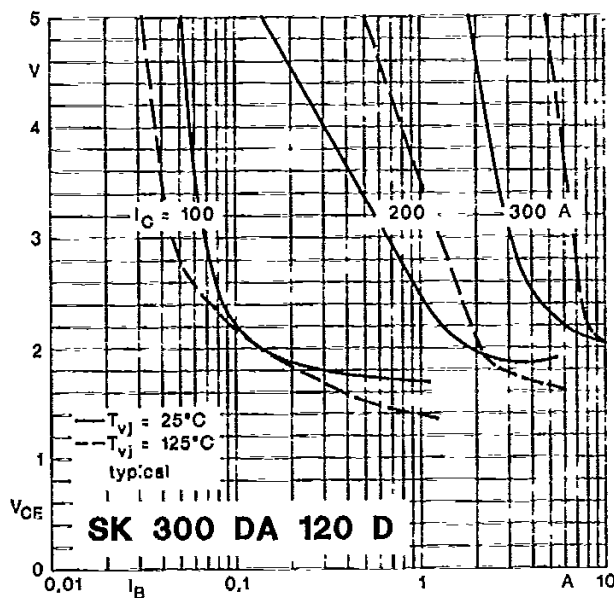


Fig. 6 Collector-emitter voltage vs. base current

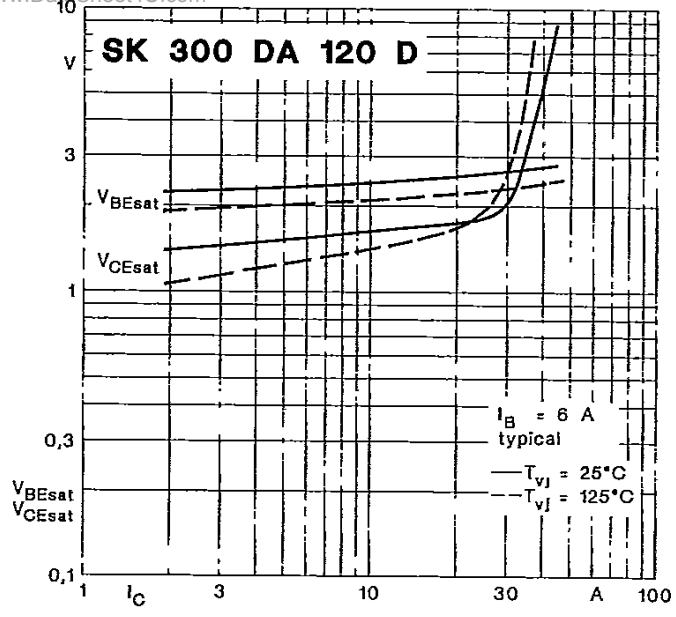


Fig. 7 Saturation voltages vs. collector current

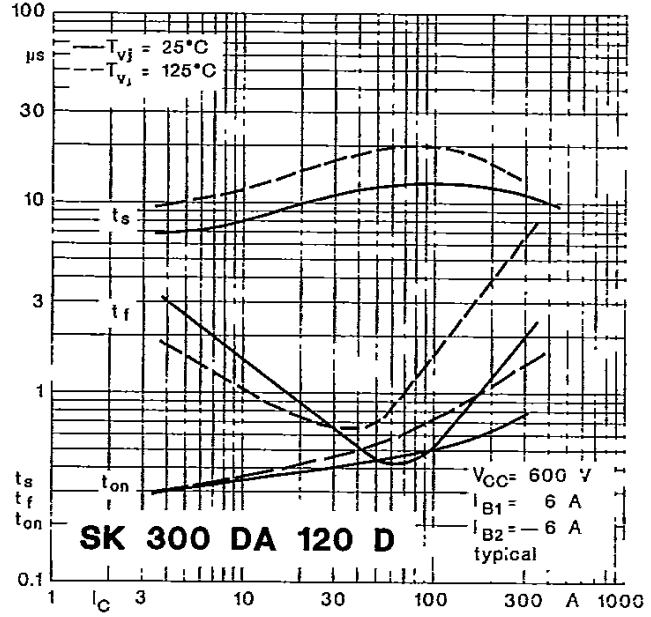


Fig. 8 Switching times vs. collector current

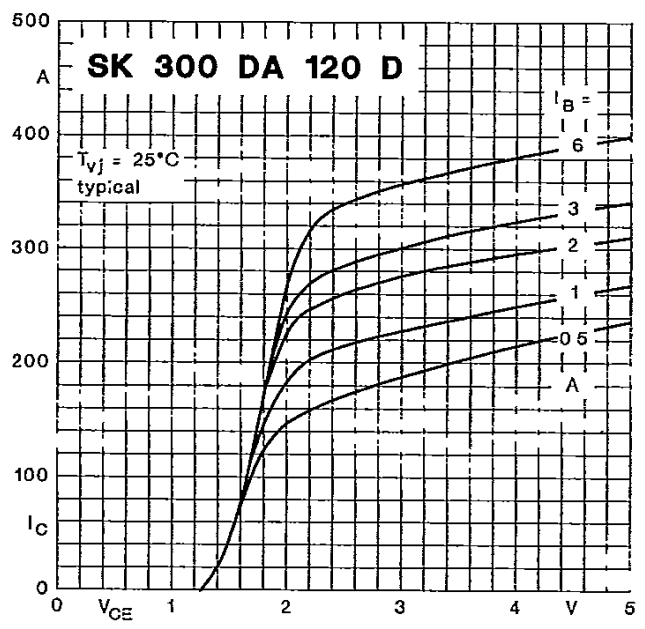


Fig. 9 Collector current/voltage characteristics

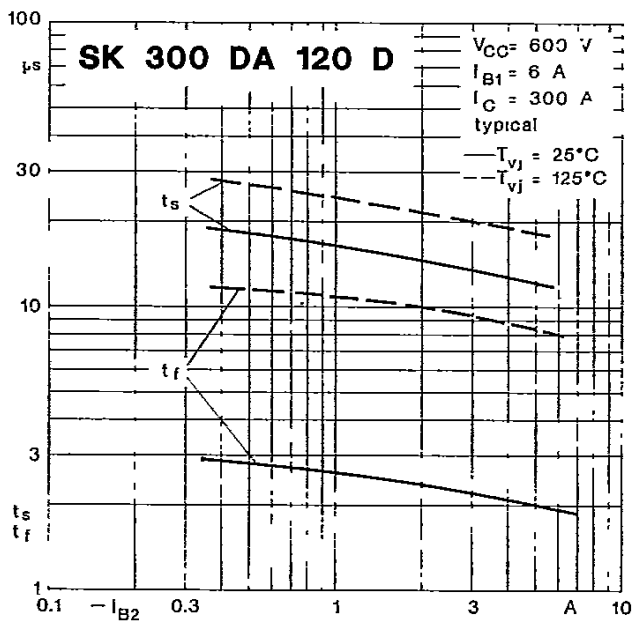


Fig. 10 Turn-off times vs. negative base current

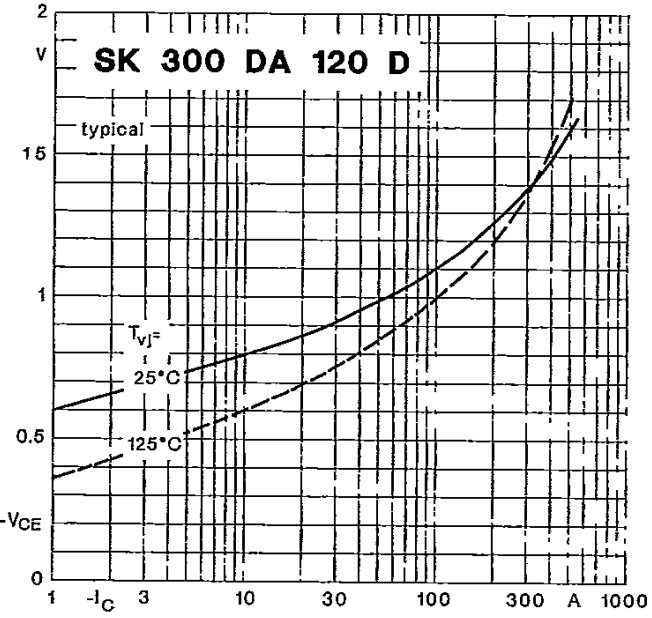


Fig. 11 Inverse diode forward characteristics

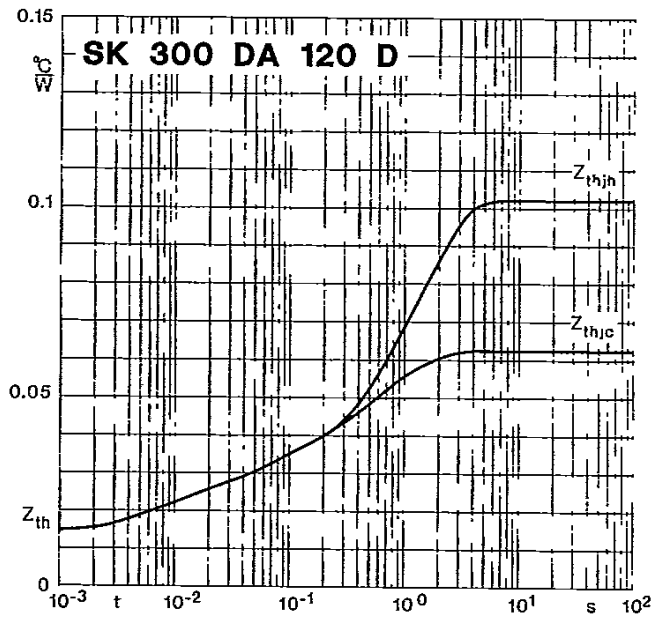


Fig. 12 Transient thermal impedance vs. time

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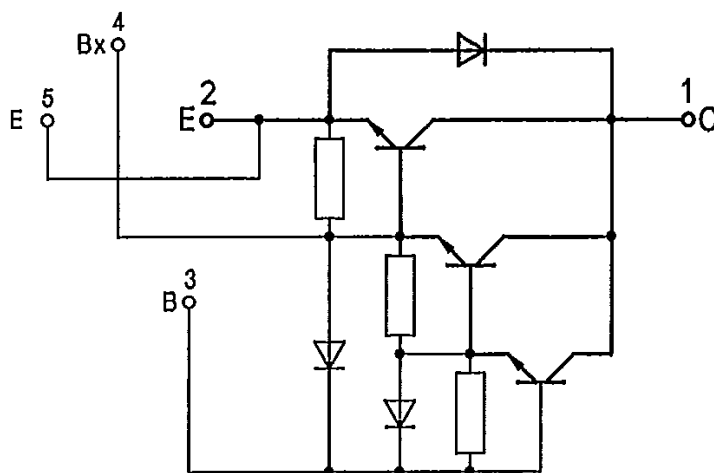
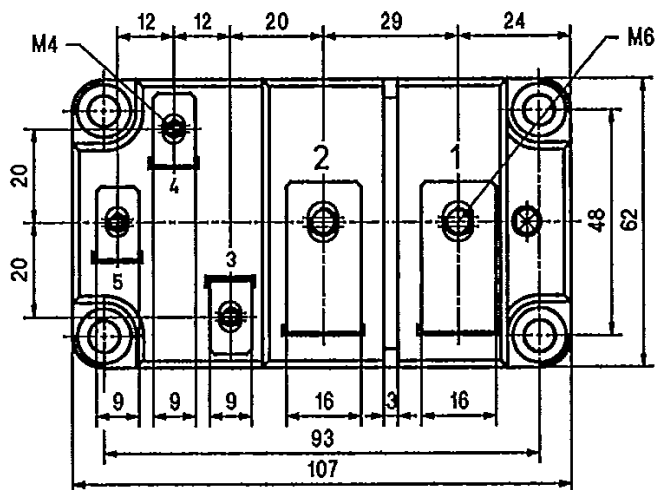
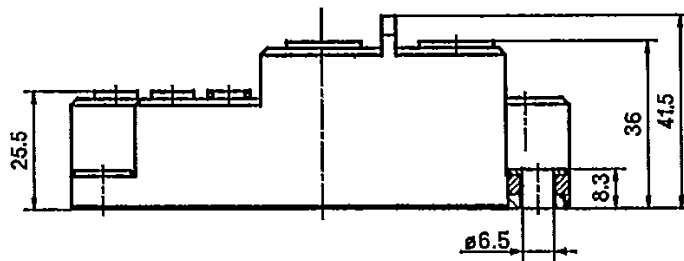
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# SK 300 DA 120 D

Case D 18

SEMITRANS<sup>®</sup> 4

UL recognized, file no. E 63 532



Dimensions in mm