

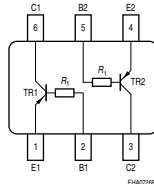
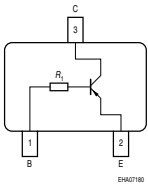
**PNP Silicon Digital Transistor**

- Switching circuit, inverter, interface circuit, driver circuit.
- Built in bias resistor ( $R_1 = 10k\Omega$ )
- For 6-PIN packages: two (galvanic) internal isolated transistors with good matching in one package



**BCR179F/L3  
BCR179T**

**SEMB4**



Type	Marking	Pin Configuration						Package
		1=B	2=E	3=C	-	-	-	
BCR179F	WWs	1=B	2=E	3=C	-	-	-	TSFP-3
BCR179L3	WW	1=B	2=E	3=C	-	-	-	TSLP-3-4
BCR179T	WWs	1=B	2=E	3=C	-	-	-	SC75
SEMB4	WW	1=E1	2=B1	3=C2	4=E2	5=B2	6=C1	SOT666

**Maximum Ratings**

Parameter	Symbol	Value	Unit
Collector-emitter voltage	$V_{CEO}$	50	V
Collector-base voltage	$V_{CBO}$	50	
Emitter-base voltage	$V_{EBO}$	5	
Input on voltage	$V_{i(on)}$	20	
Collector current	$I_C$	100	mA
Total power dissipation	$P_{tot}$		mW
BCR179F, $T_S \leq 128^\circ\text{C}$			
BCR179L3, $T_S \leq 135^\circ\text{C}$			
BCR179T, $T_S \leq 109^\circ\text{C}$			
SEMB4, $T_S \leq 75^\circ\text{C}$			
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	150 ... -65	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$		K/W
BCR179F			
BCR179L3			
BCR179T			
SEMB4			

<sup>1</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

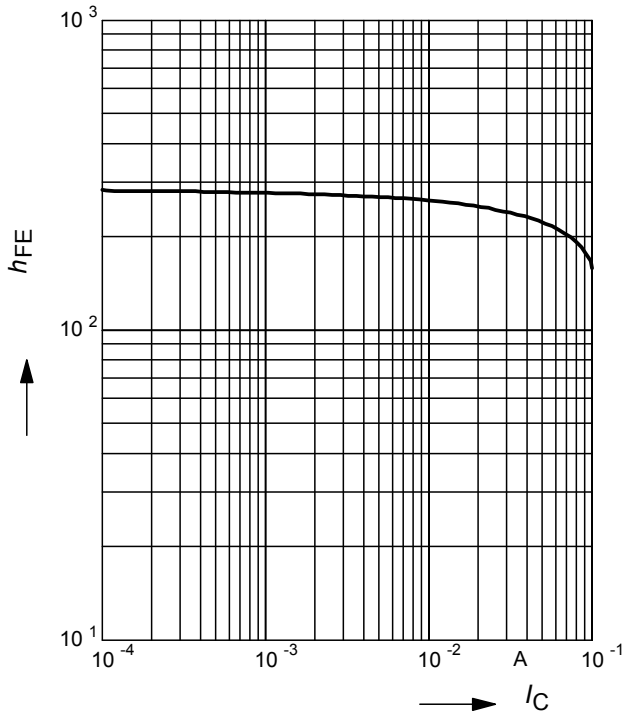
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Collector-emitter breakdown voltage $I_C = 100 \mu\text{A}, I_B = 0$	$V_{(BR)CEO}$	50	-	-	V
Collector-base breakdown voltage $I_C = 10 \mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	50	-	-	
Emitter-base breakdown voltage $I_E = 10 \mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	5	-	-	
Collector-base cutoff current $V_{CB} = 40 \text{ V}, I_E = 0$	$I_{CBO}$	-	-	100	nA
DC current gain <sup>1)</sup> $I_C = 5 \text{ mA}, V_{CE} = 5 \text{ V}$	$h_{FE}$	120	-	630	-
Collector-emitter saturation voltage <sup>1)</sup> $I_C = 10 \text{ mA}, I_B = 0,5 \text{ mA}$	$V_{CEsat}$	-	-	0,3	V
Input off voltage $I_C = 100 \mu\text{A}, V_{CE} = 5 \text{ V}$	$V_{i(off)}$	0,4	-	1	
Input on voltage $I_C = 2 \text{ mA}, V_{CE} = 0,3 \text{ V}$	$V_{i(on)}$	0,5	-	1,1	
Input resistor	$R_1$	7	10	13	k $\Omega$
<b>AC Characteristics</b>					
Transition frequency $I_C = 10 \text{ mA}, V_{CE} = 5 \text{ V}, f = 100 \text{ MHz}$	$f_T$	-	150	-	MHz
Collector-base capacitance $V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$	$C_{cb}$	-	1,2	-	pF

<sup>1)</sup>Pulse test:  $t < 300 \mu\text{s}; D < 2\%$

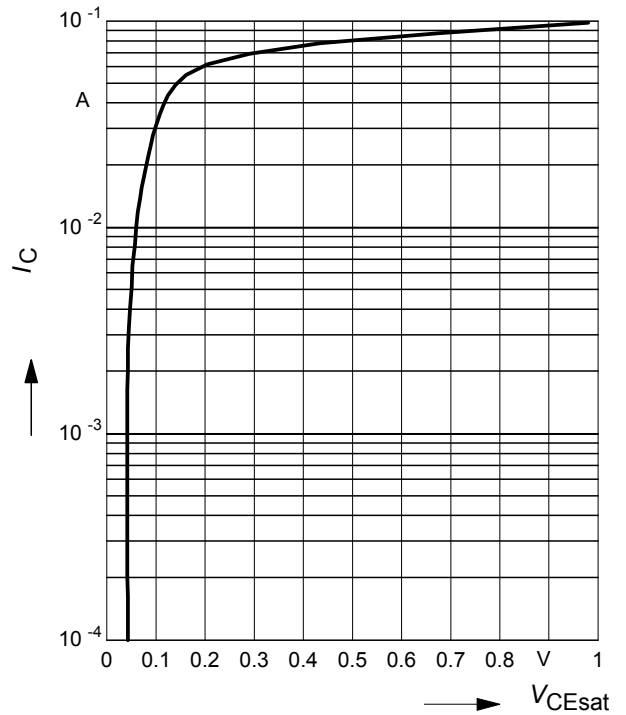
**DC current gain  $h_{FE} = f(I_C)$**

$V_{CE} = 5\text{ V}$  (common emitter configuration)



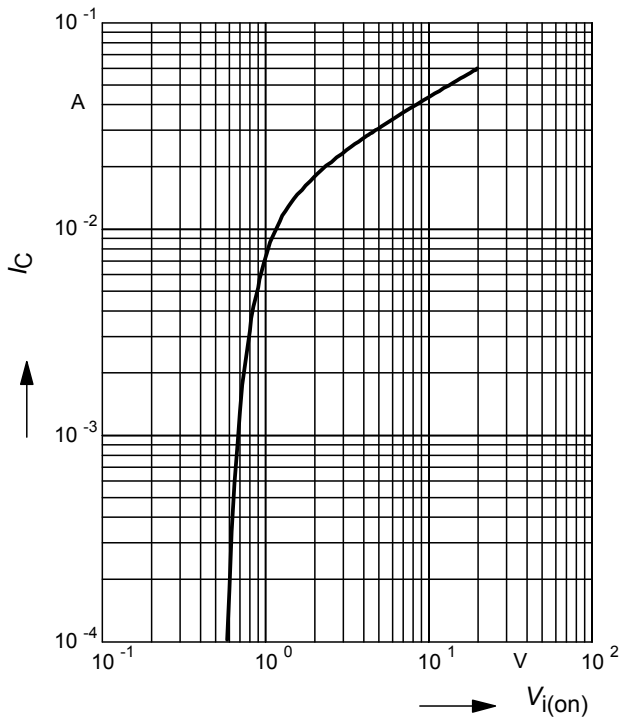
**Collector-emitter saturation voltage**

$V_{CEsat} = f(I_C), h_{FE} = 20$



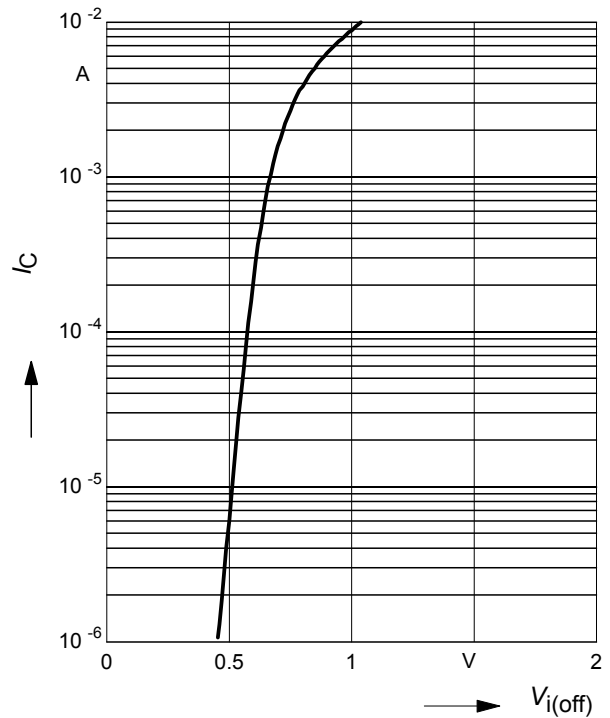
**Input on Voltage  $V_{i(on)} = f(I_C)$**

$V_{CE} = 0.3\text{ V}$  (common emitter configuration)



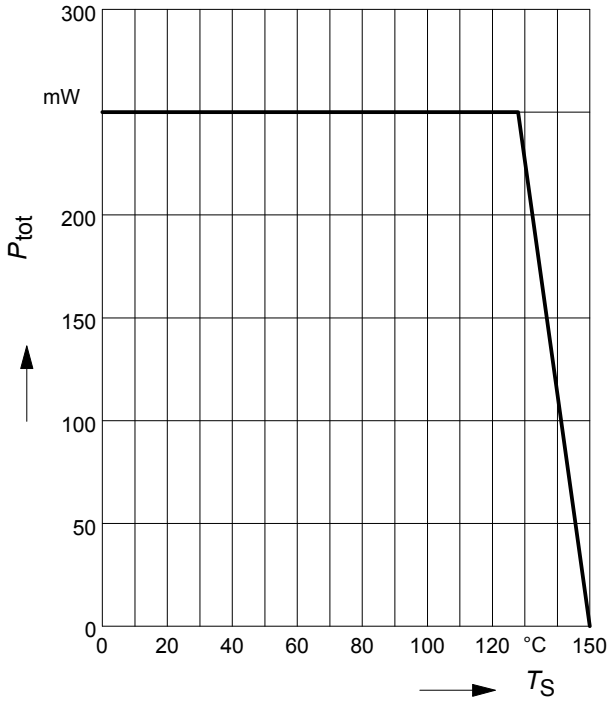
**Input off voltage  $V_{i(off)} = f(I_C)$**

$V_{CE} = 5\text{ V}$  (common emitter configuration)



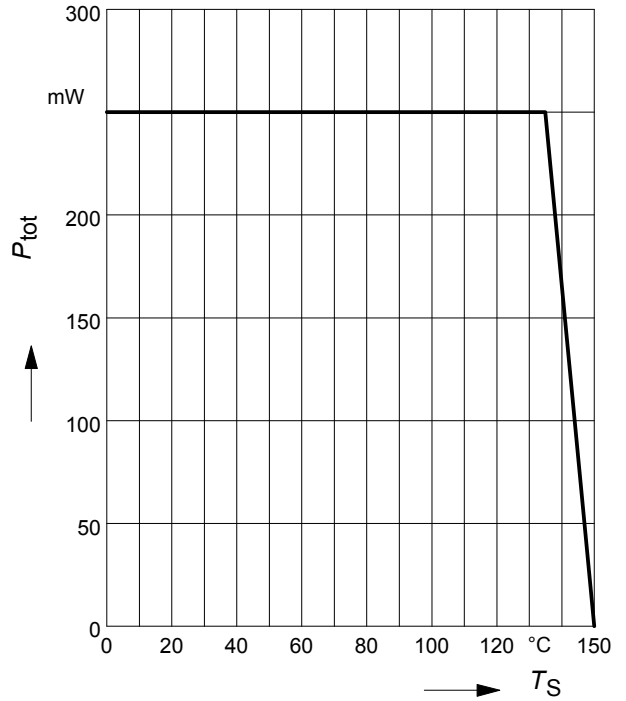
**Total power dissipation  $P_{tot} = f(T_S)$**

BCR179F



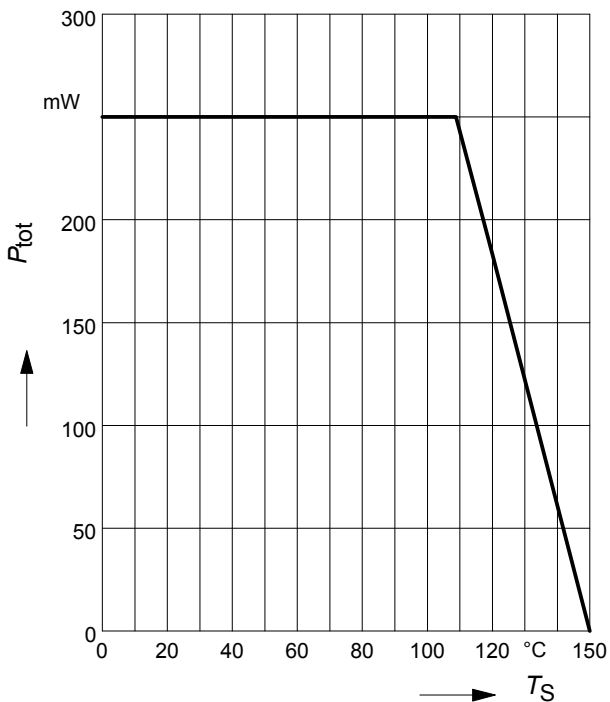
**Total power dissipation  $P_{tot} = f(T_S)$**

BCR179L3



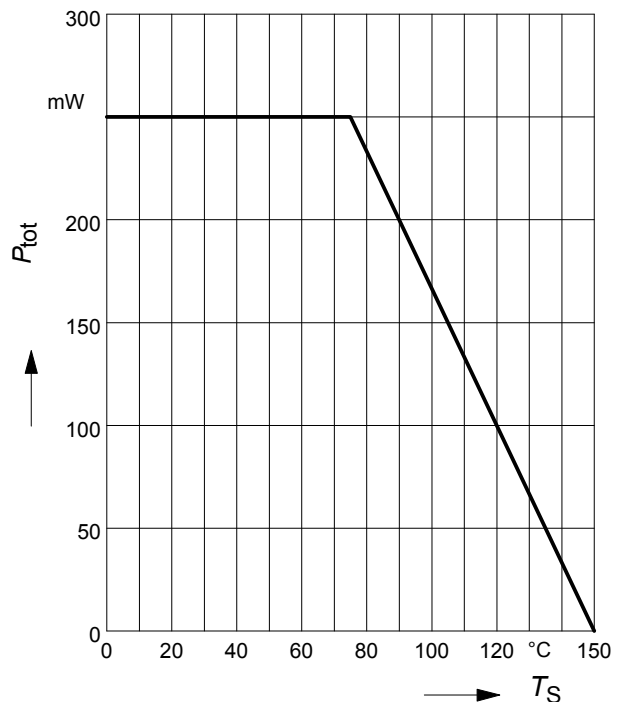
**Total power dissipation  $P_{tot} = f(T_S)$**

BCR179T



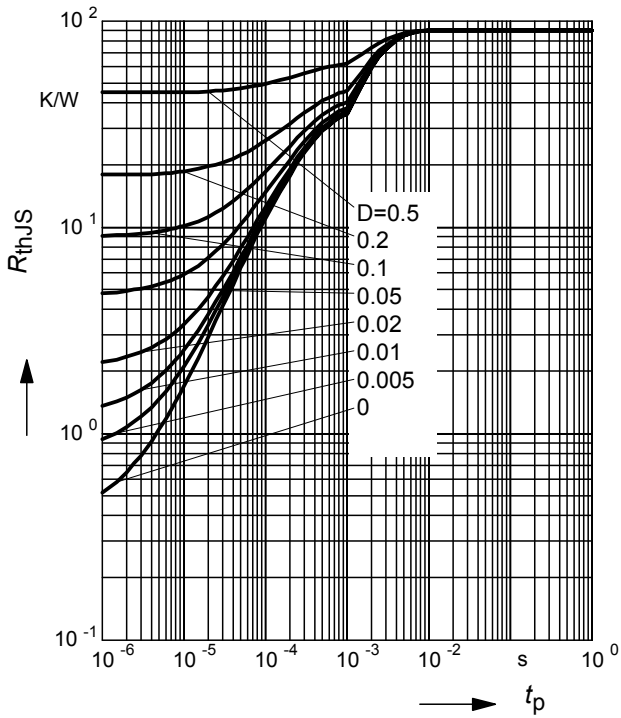
**Total power dissipation  $P_{tot} = f(T_S)$**

SEMB4



**Permissible Puls Load  $R_{thJS} = f(t_p)$**

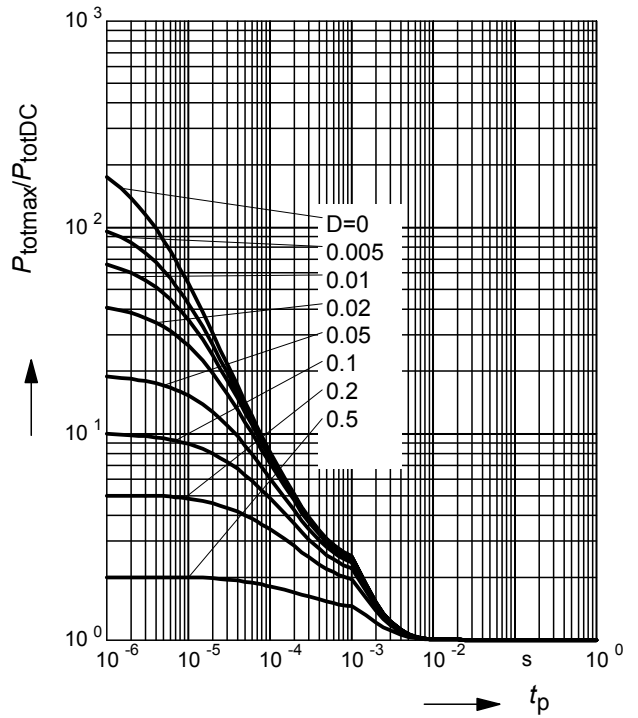
BCR179F



**Permissible Pulse Load**

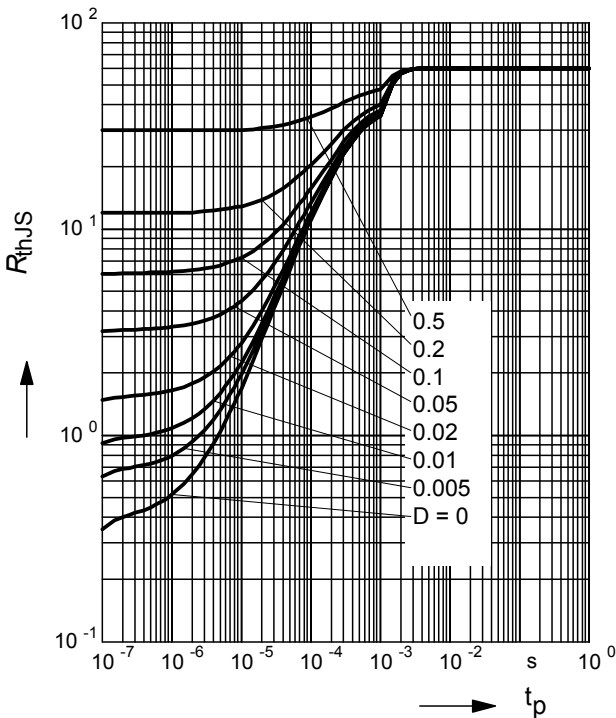
$P_{totmax}/P_{totDC} = f(t_p)$

BCR179F



**Permissible Puls Load  $R_{thJS} = f(t_p)$**

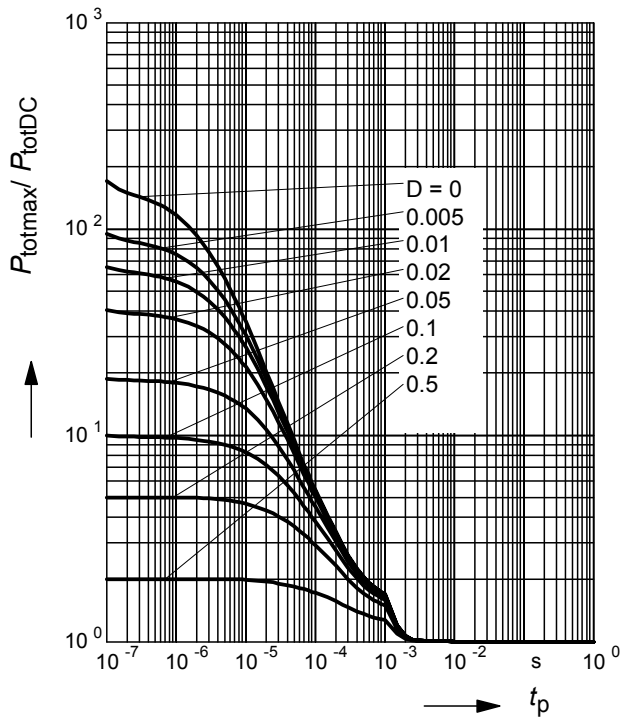
BCR179L3



**Permissible Pulse Load**

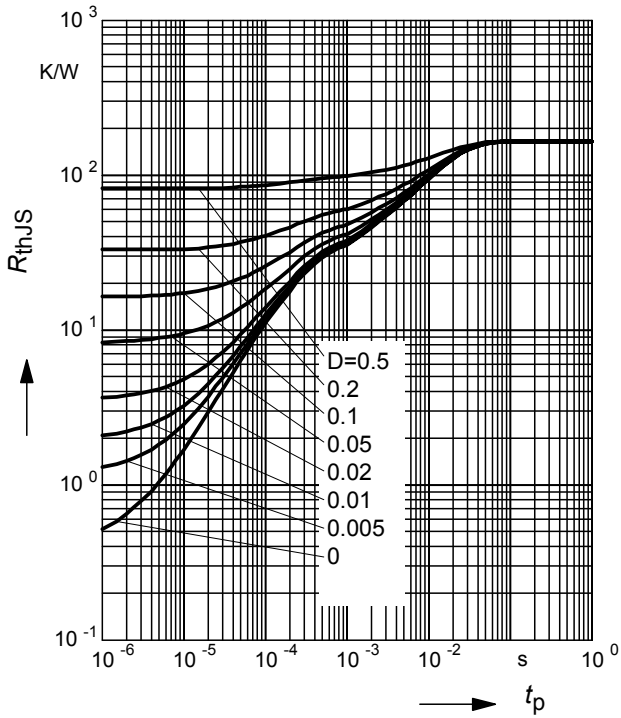
$P_{totmax}/P_{totDC} = f(t_p)$

BCR179L3



**Permissible Puls Load  $R_{thJS} = f(t_p)$**

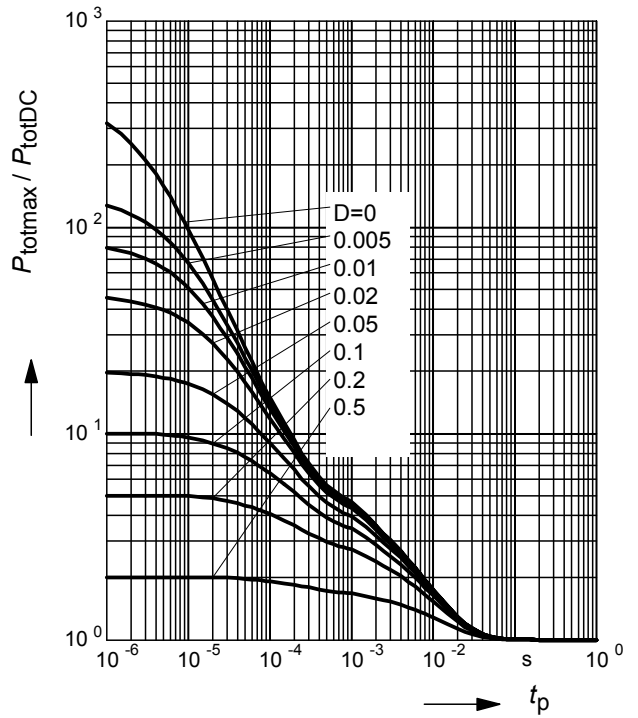
BCR179T



**Permissible Pulse Load**

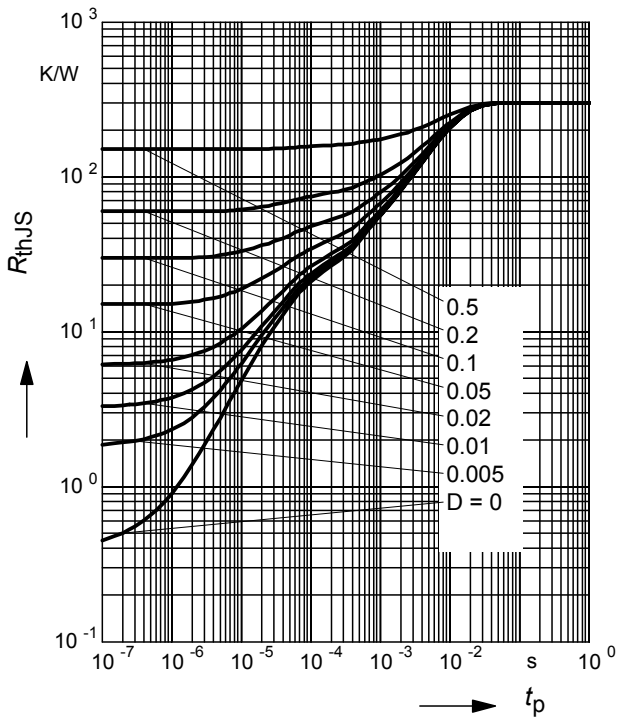
$P_{totmax}/P_{totDC} = f(t_p)$

BCR179T



**Permissible Puls Load  $R_{thJS} = f(t_p)$**

SEMB4



**Permissible Pulse Load**

$P_{totmax}/P_{totDC} = f(t_p)$

SEMB4

