Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}		V
BCP51		45	
BCP52		60	
BCP53		80	
Collector-base voltage	V_{CBO}		
BCP51		45	
BCP52		60	
BCP53		100	
Emitter-base voltage	V_{EBO}	5	
Collector current	I_C	1	A
Peak collector current, $t_p \leq 10$ ms	I_{CM}	1.5	
Base current	I_B	100	mA
Peak base current	I_{BM}	200	
Total power dissipation- $T_S \leq 120°C$	P_{tot}	2	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1]	R_{thJS}	≤ 15	K/W

[1] For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

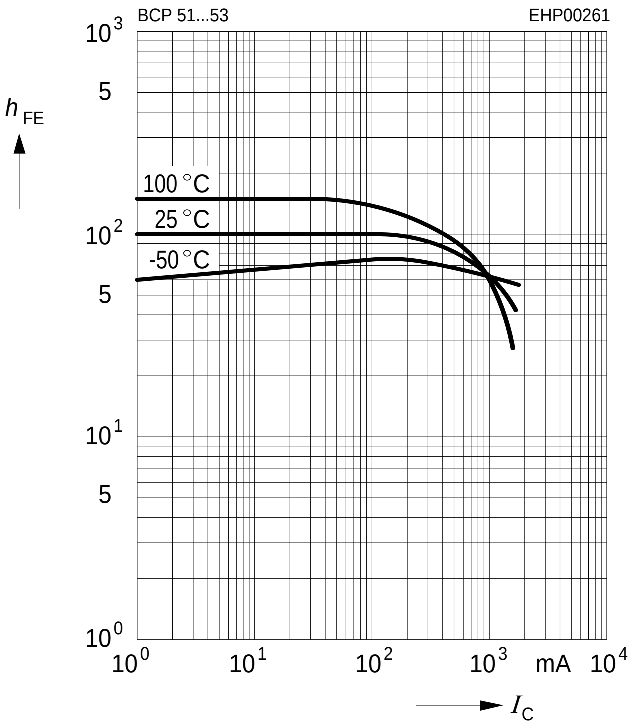
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	**Symbol**	**Values**			**Unit**
		min.	**typ.**	**max.**	
DC Characteristics					
Collector-emitter breakdown voltage	$V_{(BR)CEO}$				V
I_C = 10 mA, I_B = 0 , BCP51		45	-	-	
I_C = 10 mA, I_B = 0 , BCP52		60	-	-	
I_C = 10 mA, I_B = 0 , BCP53		80	-	-	
Collector-base breakdown voltage	$V_{(BR)CBO}$				
I_C = 100 µA, I_E = 0 , BCP51		45	-	-	
I_C = 100 µA, I_E = 0 , BCP52		60	-	-	
I_C = 100 µA, I_E = 0 , BCP53		100	-	-	
Emitter-base breakdown voltage I_E = 10 µA, I_C = 0	$V_{(BR)EBO}$	5	-	-	
Collector-base cutoff current	I_{CBO}				µA
V_{CB} = 30 V, I_E = 0		-	-	0.1	
V_{CB} = 30 V, I_E = 0 , T_A = 150 °C		-	-	20	
DC current gain[1]	h_{FE}				-
I_C = 5 mA, V_{CE} = 2 V		25	-	-	
I_C = 150 mA, V_{CE} = 2 V, BCP51		40	-	250	
I_C = 150 mA, V_{CE} = 2 V, BCP53-10		63	100	160	
I_C = 150 mA, V_{CE} = 2 V, BCP51-16...BCP53-16		100	160	250	
I_C = 500 mA, V_{CE} = 2 V		25	-	-	
Collector-emitter saturation voltage[1] I_C = 500 mA, I_B = 50 mA	V_{CEsat}	-	-	0.5	V
Base-emitter voltage[1] I_C = 500 mA, V_{CE} = 2 V	$V_{BE(ON)}$	-	-	1	
AC Characteristics					
Transition frequency I_C = 50 mA, V_{CE} = 10 V, f = 100 MHz	f_T	-	125	-	MHz

[1] Pulse test: t < 300µs; D < 2%

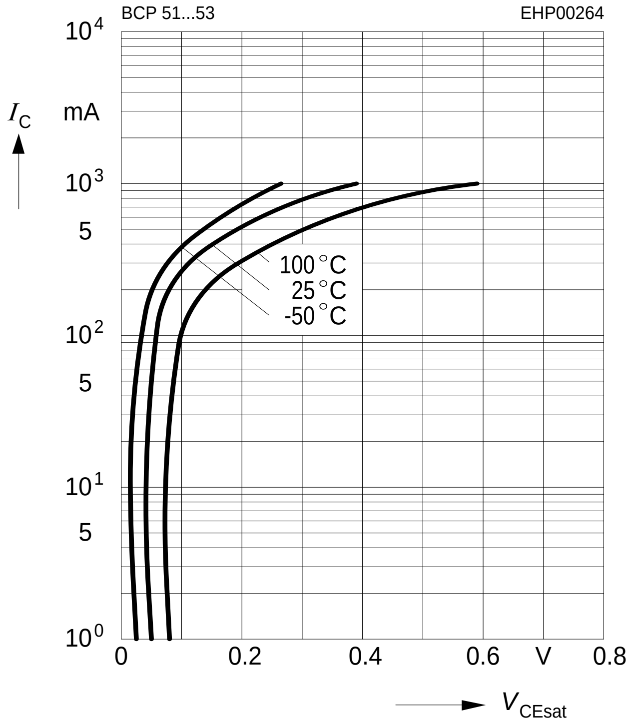
DC current gain $h_{FE} = f(I_C)$

V_{CE} = 2 V



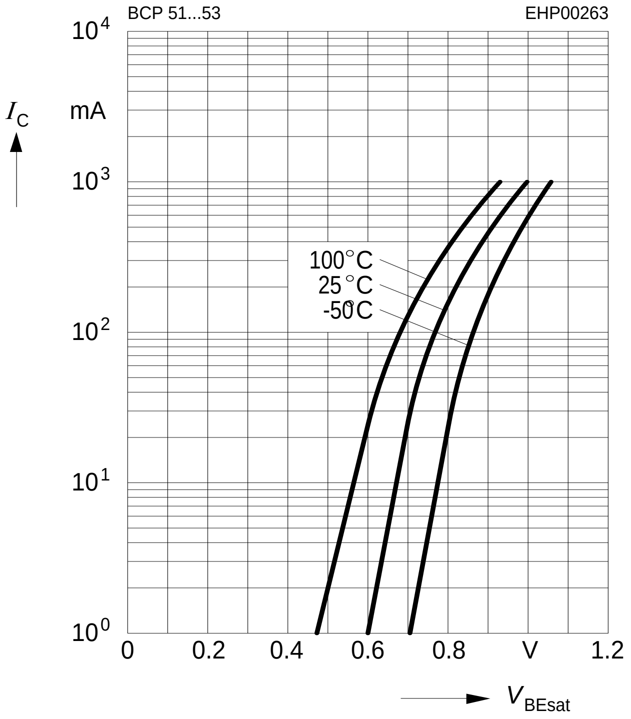
Collector-emitter saturation voltage

$I_C = f(V_{CEsat})$, h_{FE} = 10



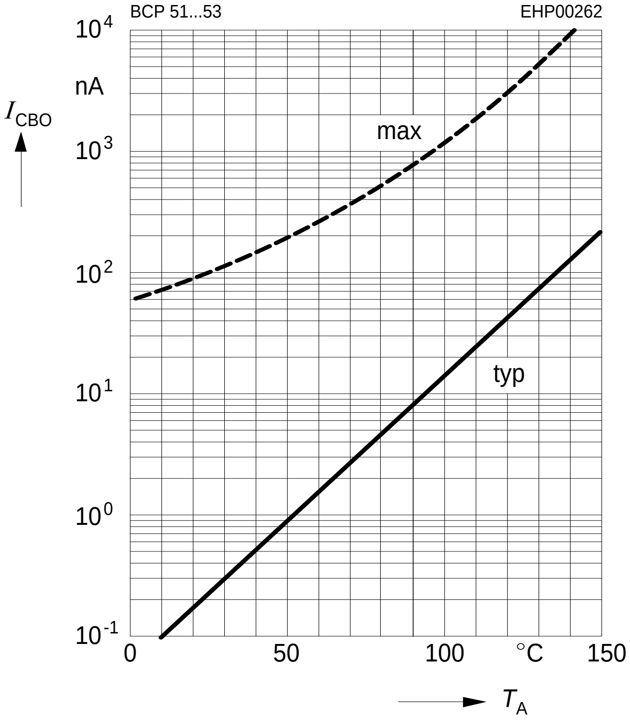
Base-emitter saturation voltage

$I_C = f(V_{BEsat})$, h_{FE} = 10



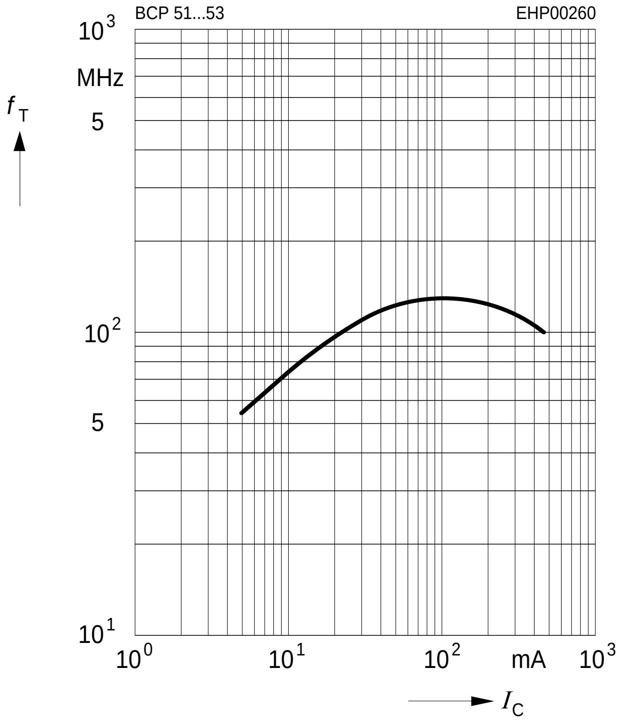
Collector cutoff current $I_{CBO} = f(T_A)$

V_{CBO} = 30 V

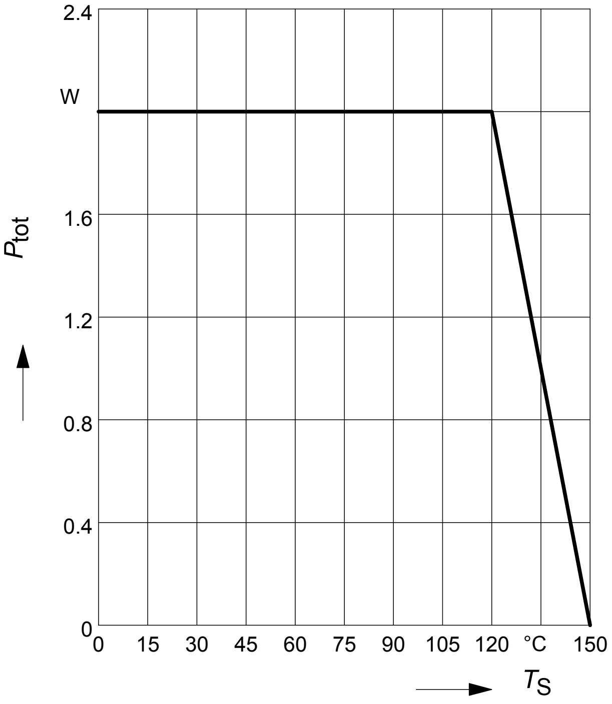


Transition frequency $f_T = f(I_C)$

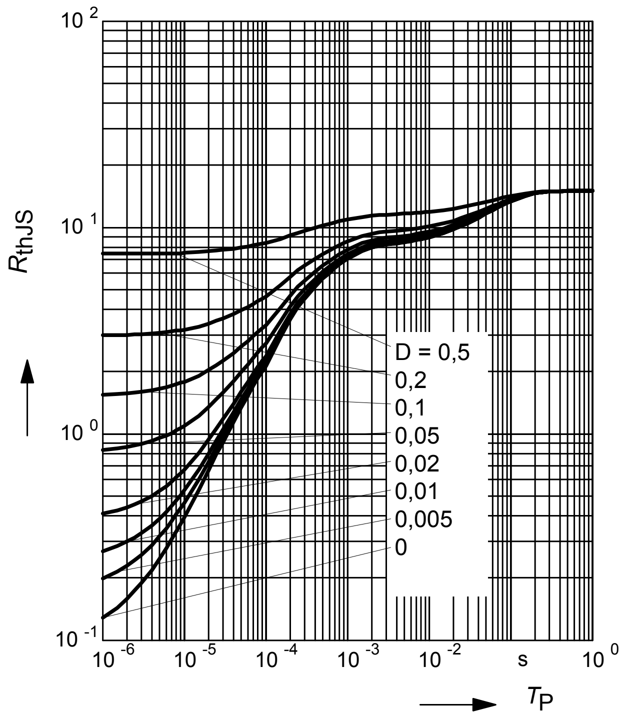
$V_{CE} = 10$ V



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

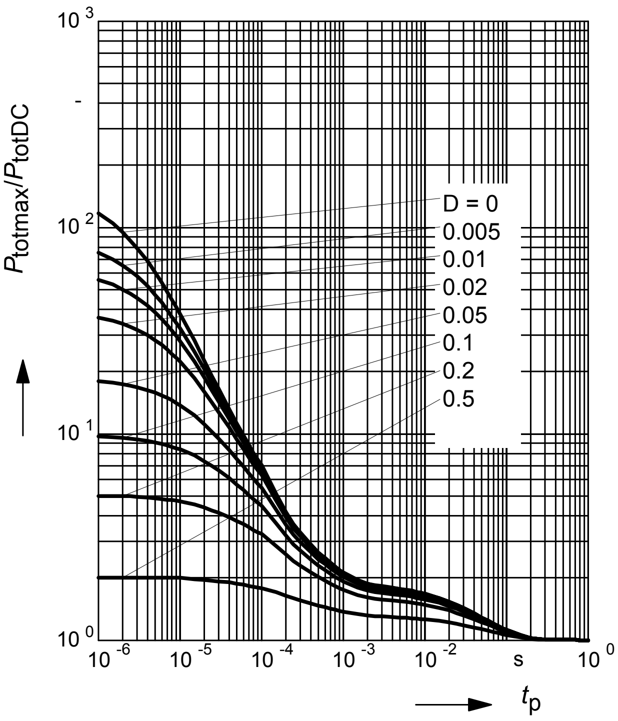


Permissible Pulse Load $R_{thJS} = f(t_p)$

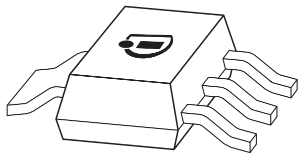


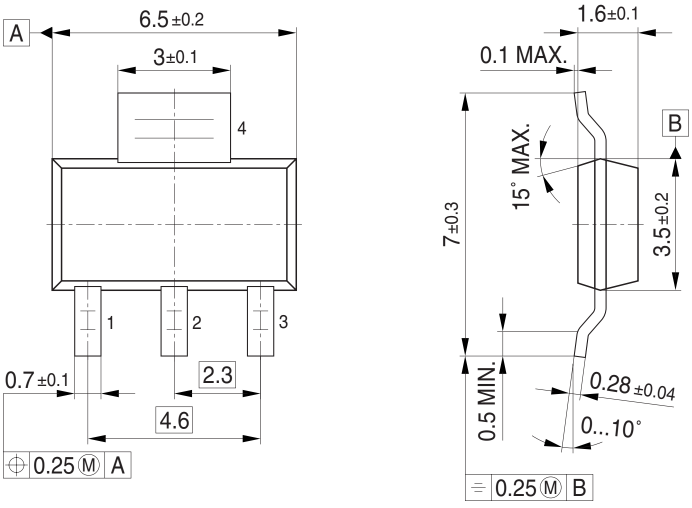
Permissible Pulse Load

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

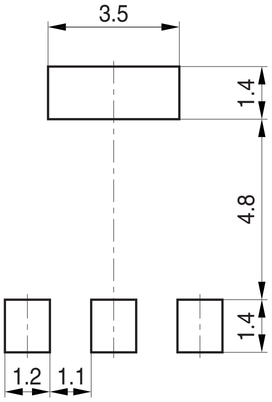


Package Outline

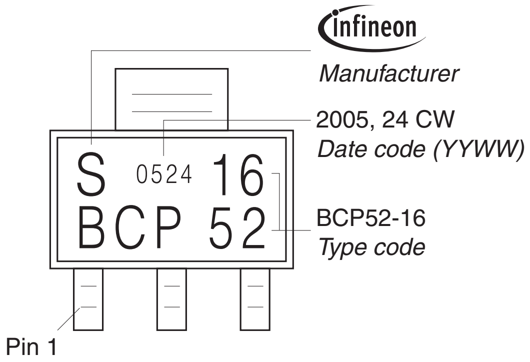




Foot Print

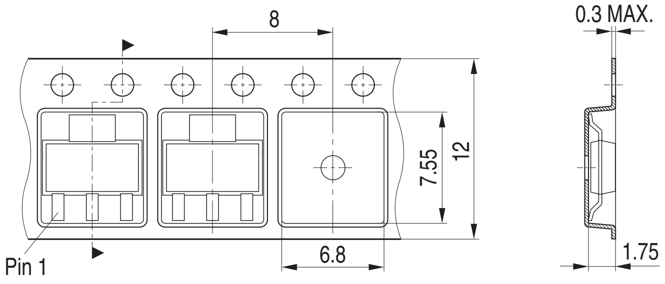


Marking Layout (Example)



Packing

Reel ø180 mm = 1.000 Pieces/Reel
Reel ø330 mm = 4.000 Pieces/Reel



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