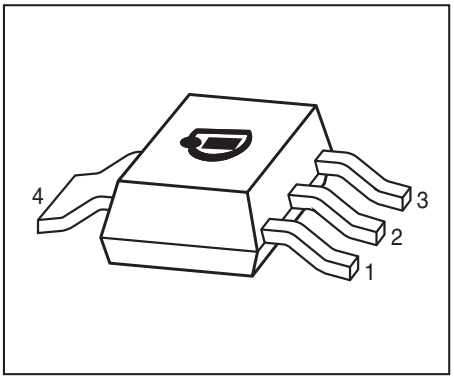
PNP Silicon AF Transistor



- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary type: BCP68 (NPN)
- Pb-free (RoHS compliant) package [1)]
- Qualified according AEC Q101

Type	Marking	Pin Configuration						Package
BCP69-25	...-25*	1=B	2=C	3=E	4=C	-	-	SOT223

* Marking is the same than type-name

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	20	V
Collector-emitter voltage	V_{CES}	25	
Collector-base voltage	V_{CBO}	25	
Emitter-base voltage	V_{EBO}	5	
Collector current	I_C	1	A
Peak collector current, $t_p \leq 10$ ms	I_{CM}	2	
Base current	I_B	100	mA
Peak base current	I_{BM}	200	
Total power dissipation- $T_S \leq 114$ °C	P_{tot}	3	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

[1]Pb-containing package may be available upon special request

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}	≤ 12	K/W

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

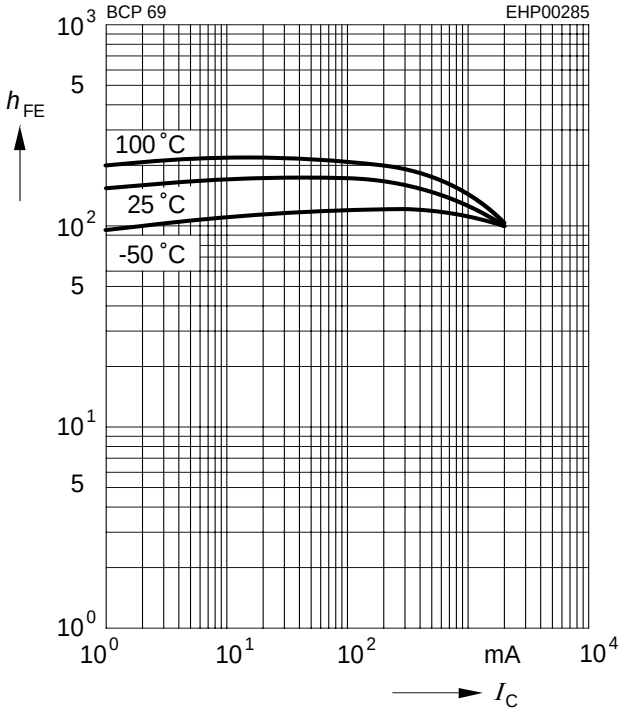
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage I_C = 30 mA, I_B = 0	$V_{(BR)CEO}$	20	-	-	V
Collector-base breakdown voltage I_C = 10 µA, I_E = 0	$V_{(BR)CBO}$	25	-	-	
Collector-emitter breakdown voltage I_C = 10 µA, V_{BE} = 0	$V_{(BR)CES}$	25	-	-	
Emitter-base breakdown voltage I_E = 10 µA, I_C = 0	$V_{(BR)EBO}$	5	-	-	
Collector-base cutoff current	I_{CBO}				µA
V_{CB} = 25 V, I_E = 0		-	-	0.1	
V_{CB} = 25 V, I_E = 0 , T_A = 150 °C		-	-	100	
DC current gain[2)]	h_{FE}				-
I_C = 5 mA, V_{CE} = 10 V		50	-	-	
I_C = 500 mA, V_{CE} = 1 V, BCP69-16		100	160	250	
I_C = 500 mA, V_{CE} = 1 V, BCP69-25		160	250	375	
I_C = 1 A, V_{CE} = 1 V		60	-	-	
Collector-emitter saturation voltage[2)] I_C = 1 A, I_B = 100 mA	V_{CEsat}	-	-	0.5	V
Base-emitter voltage[2)]	$V_{BE(ON)}$				
I_C = 5 mA, V_{CE} = 10 V		-	0.6	-	
I_C = 1 A, V_{CE} = 1 V		-	-	1	
AC Characteristics					
Transition frequency I_C = 100 mA, V_{CE} = 5 V, f = 100 MHz	f_T	-	100	-	MHz

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

[2]Pulse test: t < 300µs; D < 2%

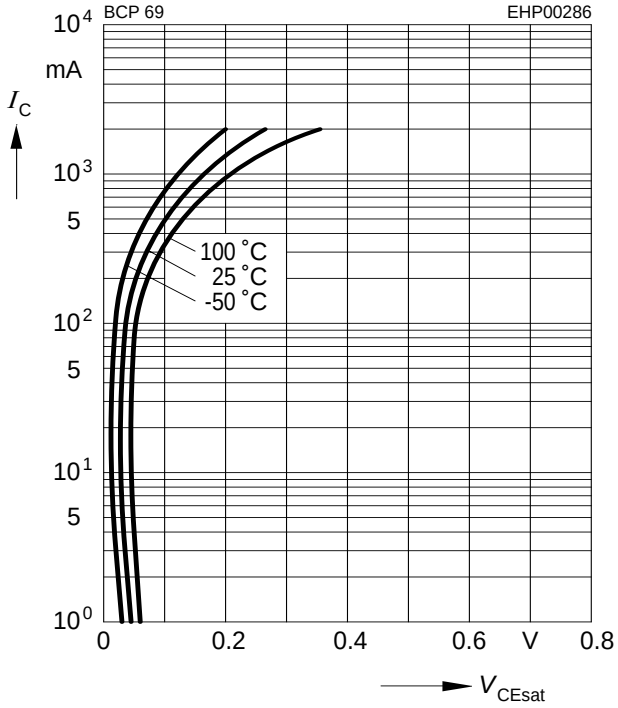
DC current gain $h_{FE} = f(I_C)$

V_{CE} = 1 V



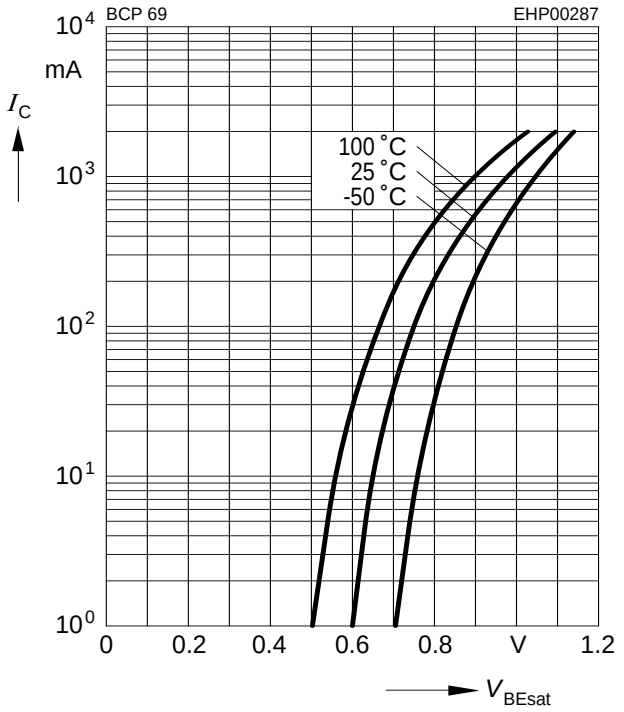
Collector-emitter saturation voltage

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



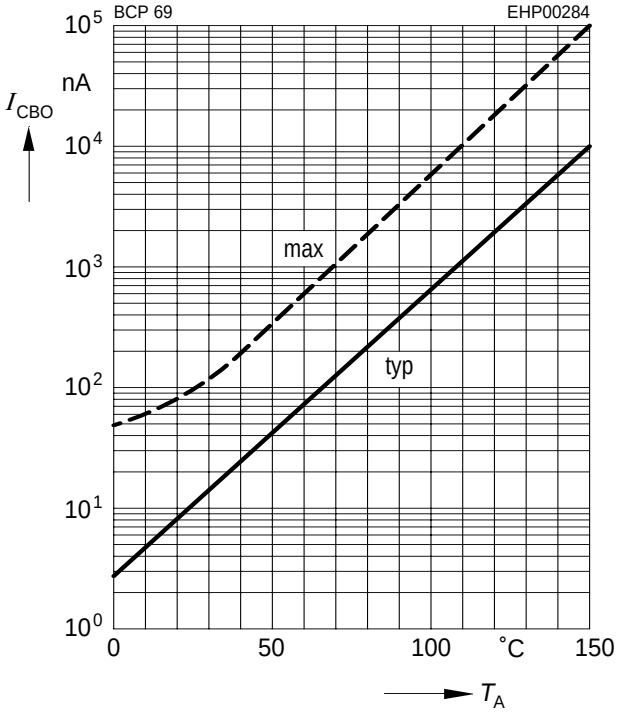
Base-emitter saturation voltage

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



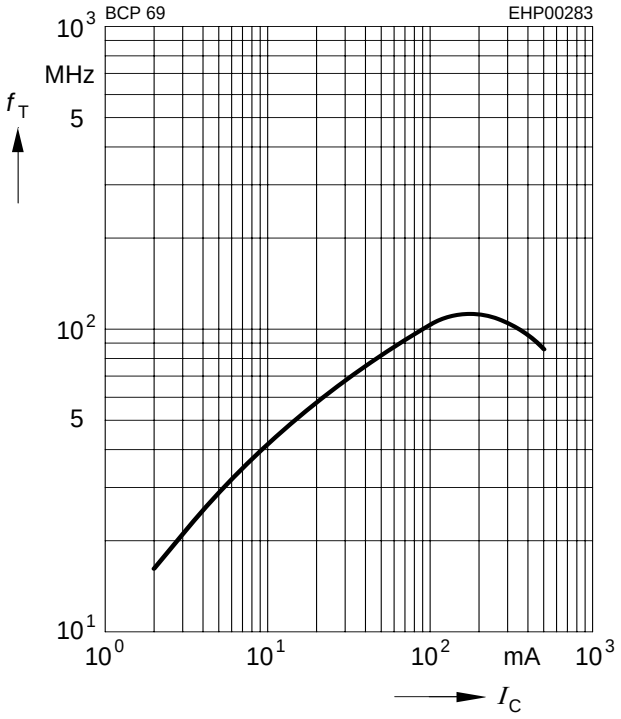
Collector cutoff current $I_{CBO} = f(T_A)$

V_{CBO} = 25 V

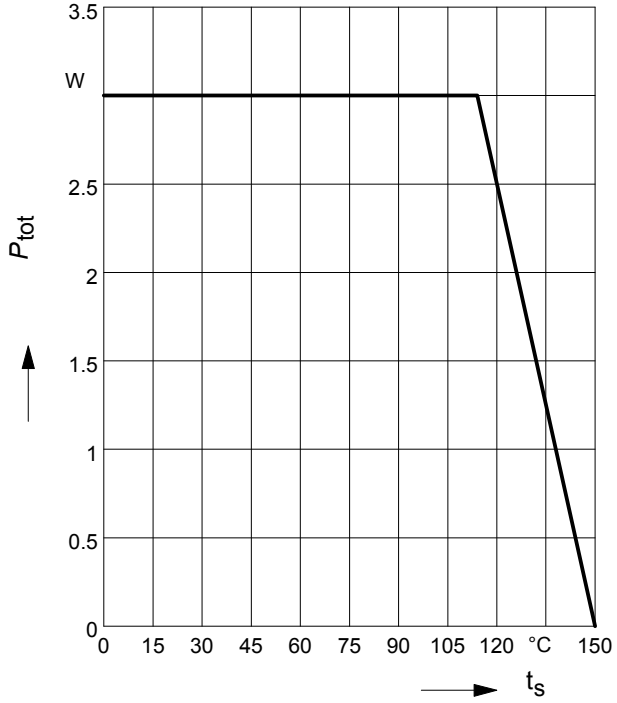


Transition frequency $f_T = f(I_C)$

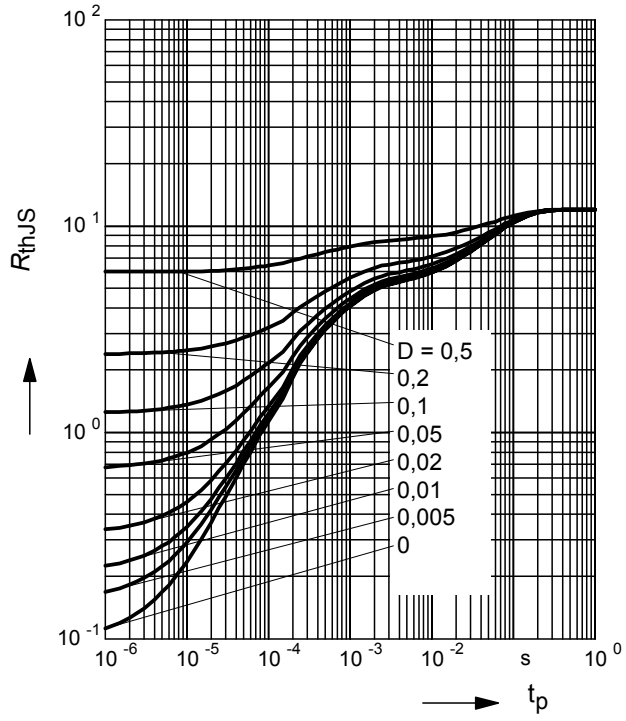
V_{CE} = 5 V



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

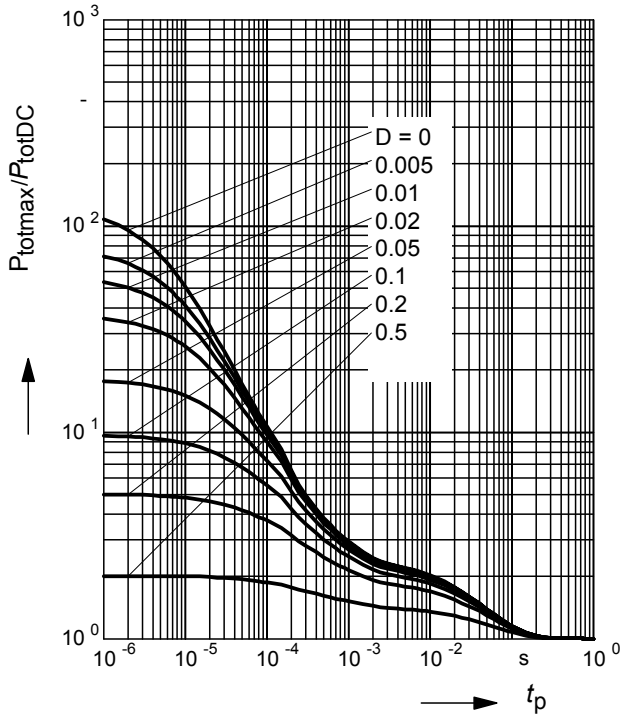


Permissible Pulse Load $R_{thJS} = f(t_p)$



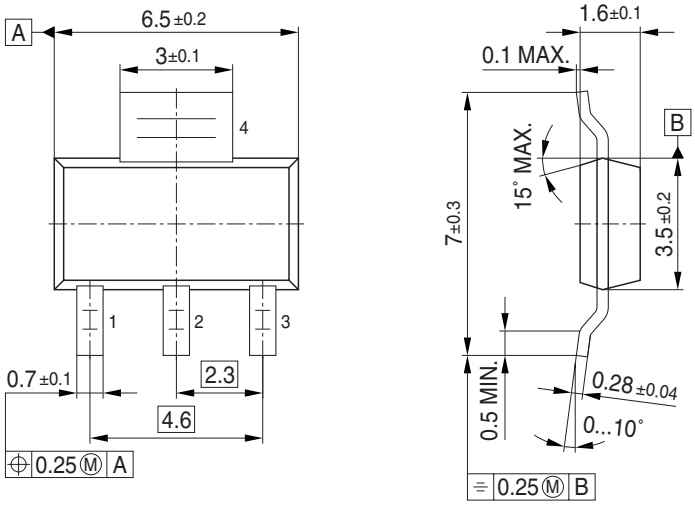
Permissible Pulse Load

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

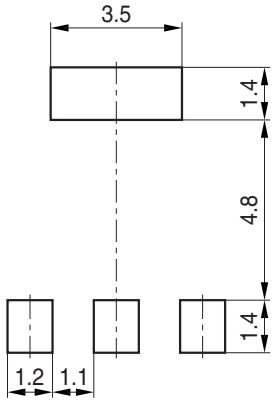


Package Outline

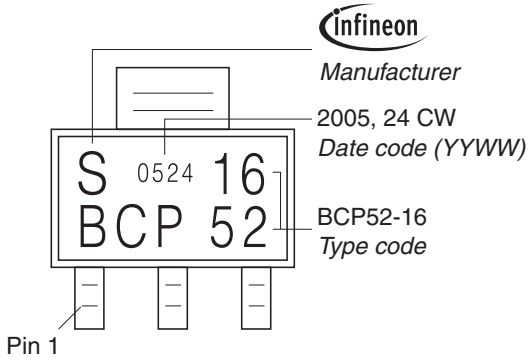




Foot Print

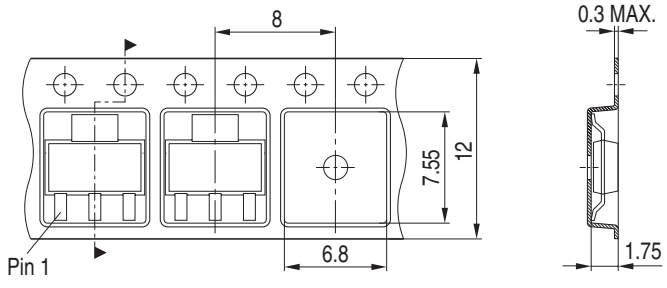


Marking Layout (Example)



Packing

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



Edition 2006-02-01
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Infineon Technologies AG
81726 München, Germany
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