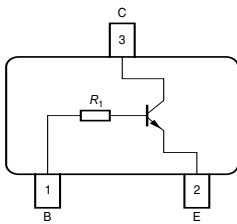
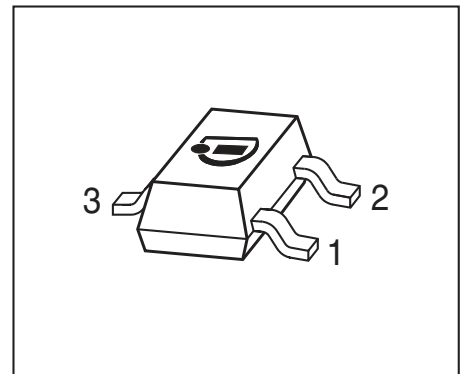


NPN Silicon Digital Transistor

- Switching circuit, inverter circuit, driver circuit
- Built in bias resistor ($R_1 = 4.7 \text{ k}\Omega$)


EHA07254

Type	Marking	Pin Configuration			Package
BCR519	XKs	1=B	2=E	3=C	SOT23

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	50	V
Collector-base voltage	V_{CBO}	50	
Input forward voltage	$V_{i(fwd)}$	30	
Input reverse voltage	$V_{i(rev)}$	5	
Collector current	I_C	500	mA
Total power dissipation- $T_S \leq 79 \text{ }^\circ\text{C}$	P_{tot}	330	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}	≤ 215	K/W

¹⁾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.	
DC Characteristics					
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	-	-	
Collector-base cutoff current $V_{CB} = 50 \text{ V}, I_E = 0$	I_{CBO}	-	-	100	nA
Emitter-base cutoff current $V_{EB} = 5 \text{ V}, I_C = 0$	I_{EBO}	-	-	100	nA
DC current gain- $I_C = 50 \text{ mA}, V_{CE} = 5 \text{ V}$	h_{FE}	120	-	630	-
Collector-emitter saturation voltage ¹⁾ $I_C = 50 \text{ mA}, I_B = 2.5 \text{ mA}$	V_{CEsat}	-	-	0.3	V
Input off voltage $I_C = 100 \mu\text{A}, V_{CE} = 5 \text{ V}$	$V_{i(off)}$	0.4	-	0.8	
Input on voltage $I_C = 10 \text{ mA}, V_{CE} = 0.3 \text{ V}$	$V_{i(on)}$	0.5	-	1.5	
Input resistor	R_1	3.2	4.7	6.2	k Ω

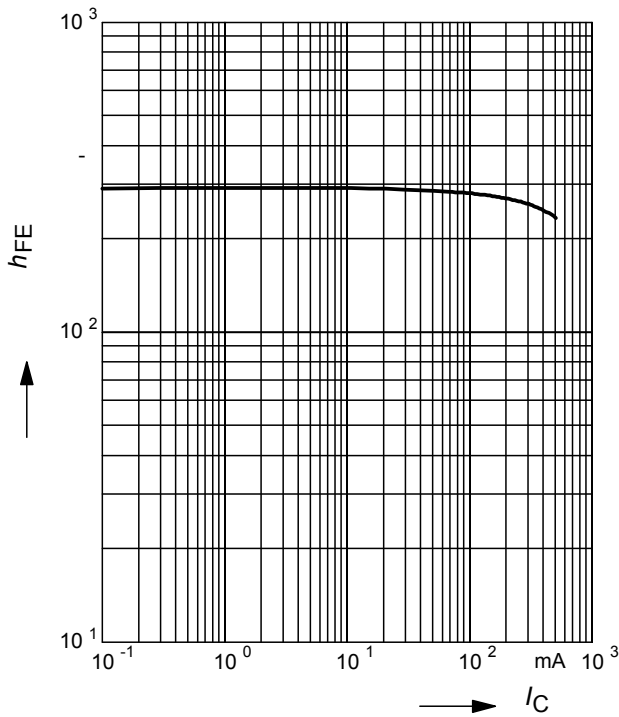
AC Characteristics

Transition frequency $I_C = 50 \text{ mA}, V_{CE} = 5 \text{ V}, f = 100 \text{ MHz}$	f_T	-	100	-	MHz
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¹Pulse test: $t < 300 \mu\text{s}$; $D < 2\%$

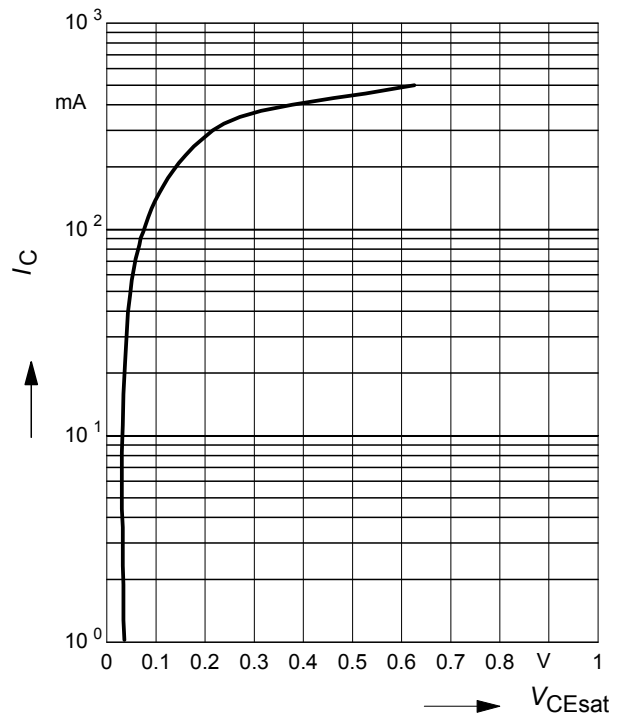
DC current gain $h_{FE} = f(I_C)$

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



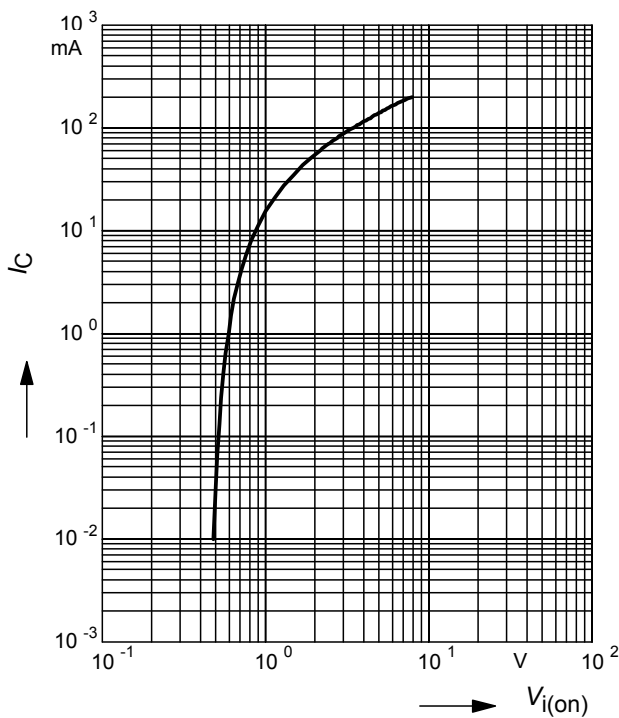
Collector-emitter saturation voltage

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



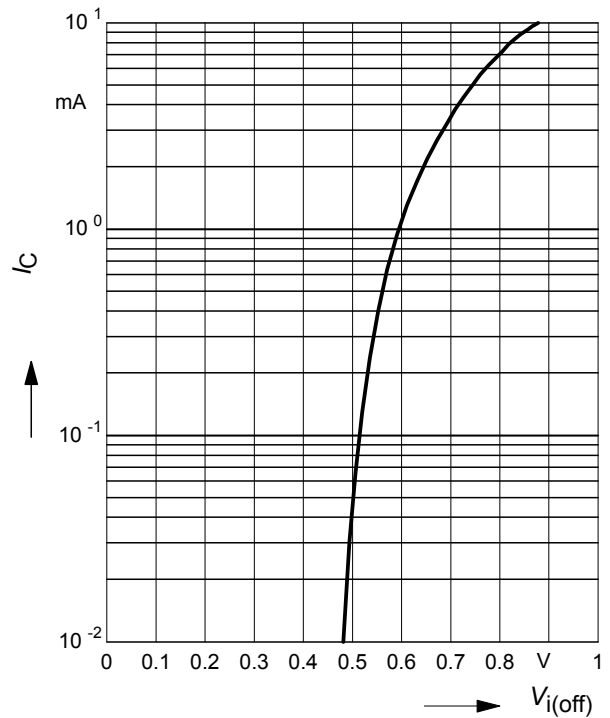
Input on Voltage $V_{i(on)} = f(I_C)$

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

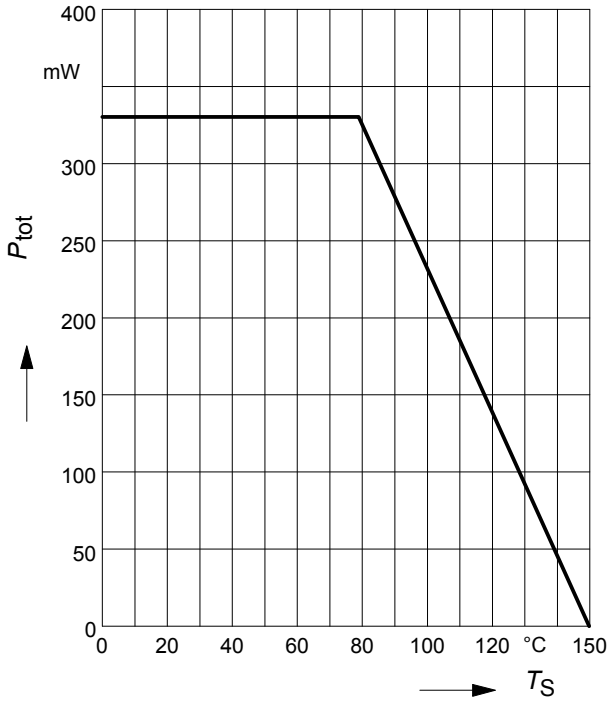


Input off voltage $V_{i(off)} = f(I_C)$

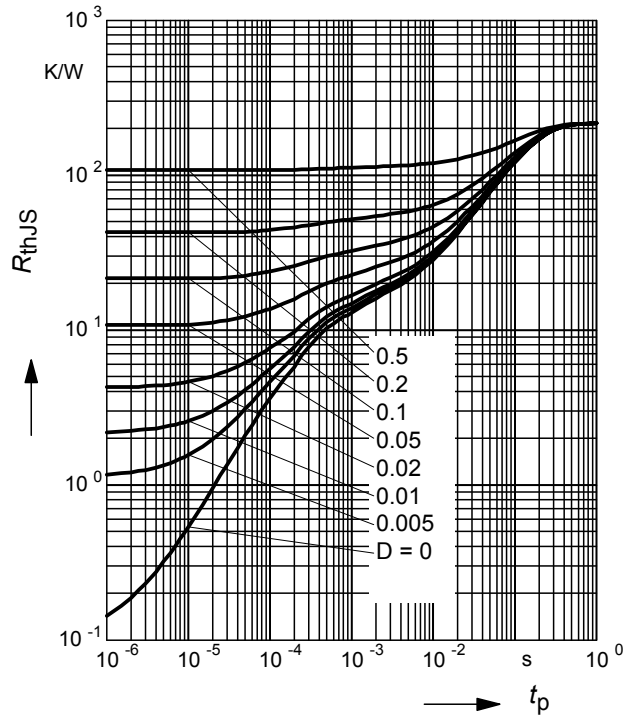
$V_{CE} = 5\text{ V}$ (common emitter configuration)



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

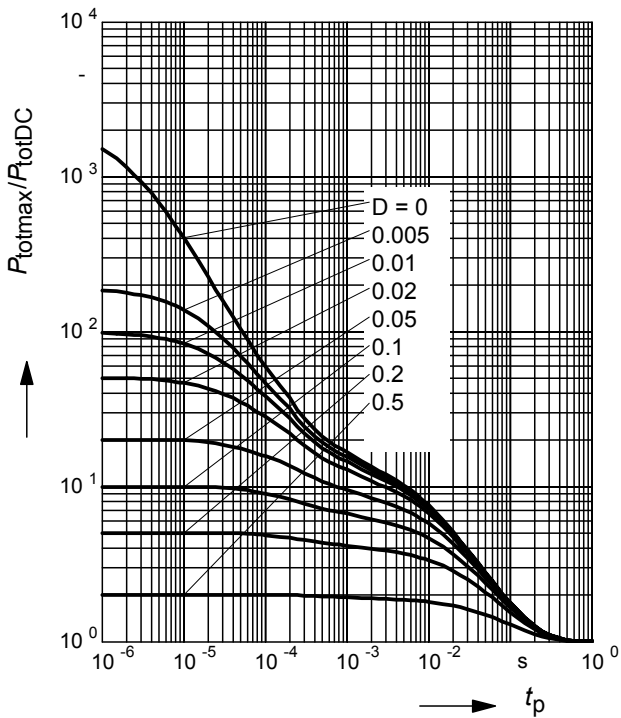


Permissible Pulse Load $R_{thJS} = f(t_p)$

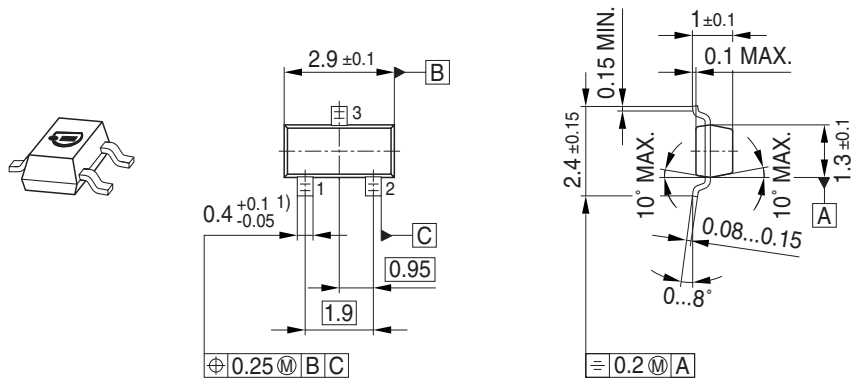


Permissible Pulse Load

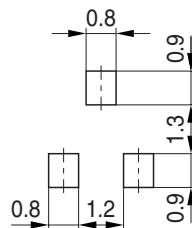
$P_{totmax}/P_{totDC} = f(t_p)$



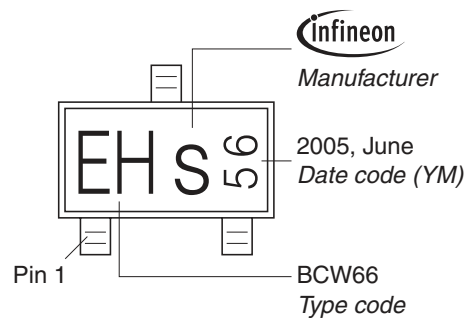
Package Outline



Foot Print

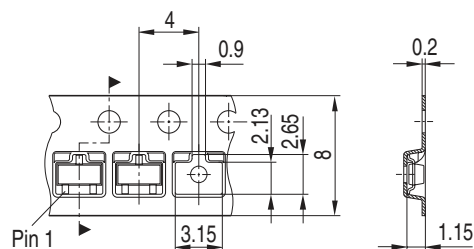


Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



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