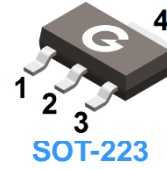
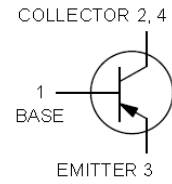


Features

- High collector current
- Low collector-emitter saturation voltage

HF



Mechanical Data

- Case: SOT-223
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BCP51	SOT-223	4000 pcs / Tape & Reel	AA
BCP51-10	SOT-223	4000 pcs / Tape & Reel	AC
BCP51-16	SOT-223	4000 pcs / Tape & Reel	AD
BCP52	SOT-223	4000 pcs / Tape & Reel	AE
BCP52-10	SOT-223	4000 pcs / Tape & Reel	AG
BCP52-16	SOT-223	4000 pcs / Tape & Reel	AM
BCP53	SOT-223	4000 pcs / Tape & Reel	AH
BCP53-10	SOT-223	4000 pcs / Tape & Reel	AK
BCP53-16	SOT-223	4000 pcs / Tape & Reel	AL

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	BCP51	BCP52	BCP53	Unit
Collector-Base Voltage	V _{CBO}	-45	-60	-100	V
Collector-Emitter Voltage	V _{CEO}	-45	-60	-80	V
Emitter-Base Voltage	V _{EBO}	-5			V
Collector Current (Continuous)	I _C	-1			A
Collector Current (Peak)	I _{CM}	-1.5			A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_A = 25^{\circ}\text{C}$) *1	P_D	1.5	W
Thermal Resistance Junction-to-Air *2	$R_{\theta JA}$	104	$^{\circ}\text{C/W}$
Thermal Resistance Junction-to-Case *2	$R_{\theta JC}$	32	$^{\circ}\text{C/W}$
Thermal Resistance Junction-to-Lead *2	$R_{\theta JL}$	14	$^{\circ}\text{C/W}$
Operating junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Notes:

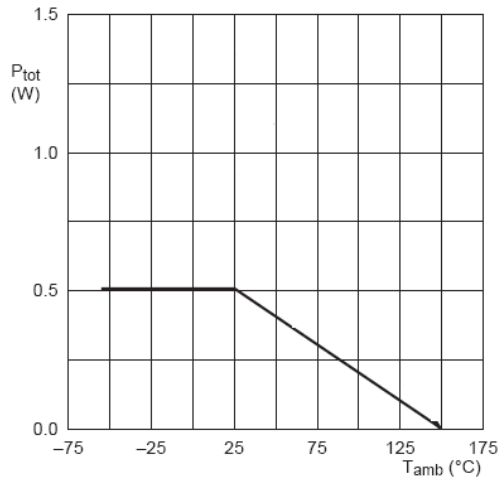
- Device mounted on a glass epoxy printed circuit board 1.575 in. x 1.575 in. x 0.059 in.; mounting pad for the collector lead min. 0.93 sq. in.
- The data tested by surface mounted on a 20mm * 15mm * 1mm FR4-epoxy P.C.B

Electrical Characteristics (@ $T_A = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$				
		BCP51	-45	-	-	V
		BCP52	-60	-	-	
		BCP53	-100	-	-	
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$				
		BCP51	-45	-	-	V
		BCP52	-60	-	-	
		BCP53	-80	-	-	
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	-5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -30\text{V}, I_E = 0$	-	-	-100	nA
DC Current Gain	h_{FE}	$V_{CE} = -2\text{V}, I_C = -5\text{mA}$	25	-	-	-
		$V_{CE} = -2\text{V}, I_C = -150\text{mA}$	40	-	250	-
		$V_{CE} = -2\text{V}, I_C = -150\text{mA}$				
		BCP51/52/53-10	63	-	160	-
		BCP51/52/53-16	100	-	250	-
		$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	25	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-	-0.5	V
Base-Emitter Voltage	$V_{BE(on)}$	$I_C = -500\text{mA}, V_{CE} = -2\text{V}$	-	-	-1	V
Transition Frequency	f_T	$V_{CE} = -10\text{V}, I_C = -50\text{mA}$ $f = 20\text{MHz}$	-	125	-	MHz

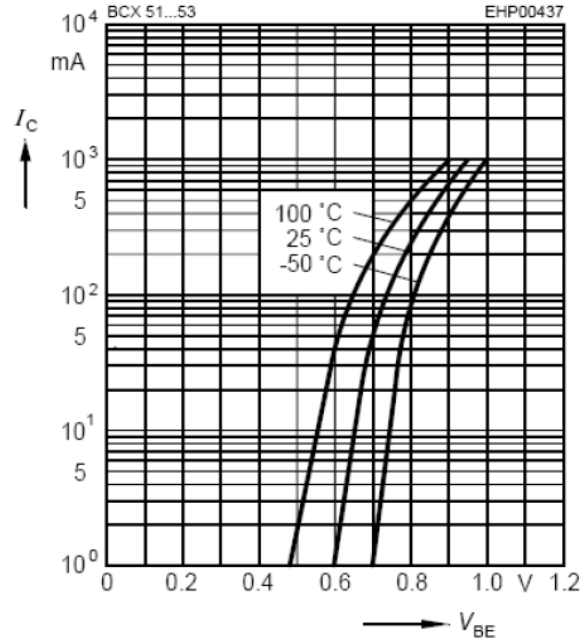
Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

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



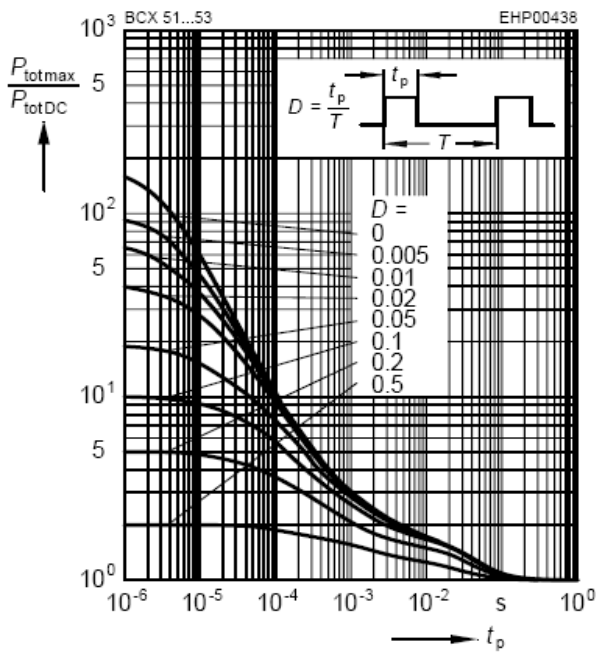
Collector current $I_C = f(V_{\text{BE}})$

$V_{\text{CE}} = 2\text{V}$



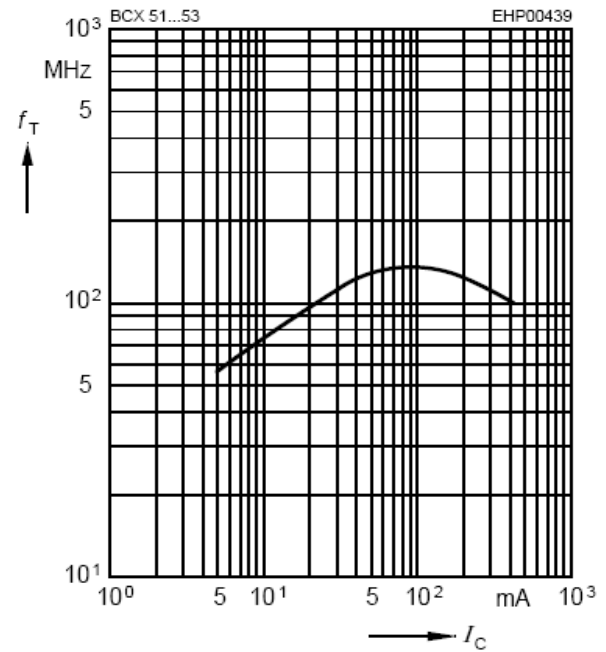
Permissible pulse load

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



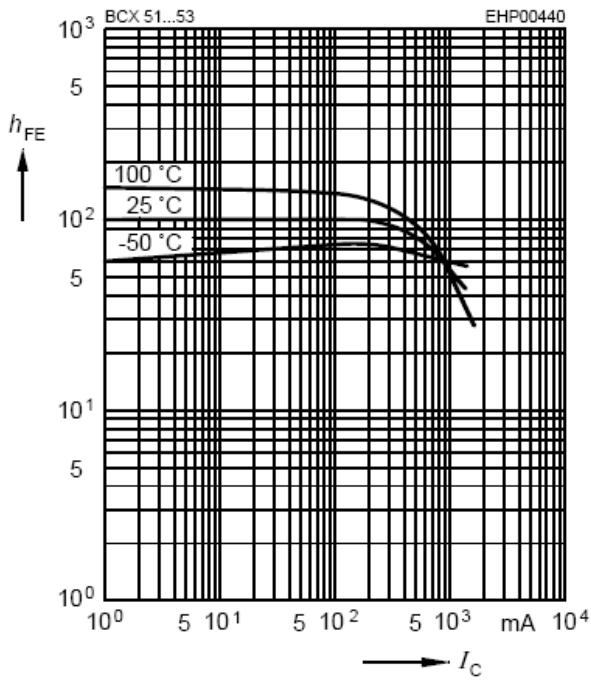
Transition frequency $f_T = f(I_C)$

$V_{\text{CE}} = 10\text{V}$



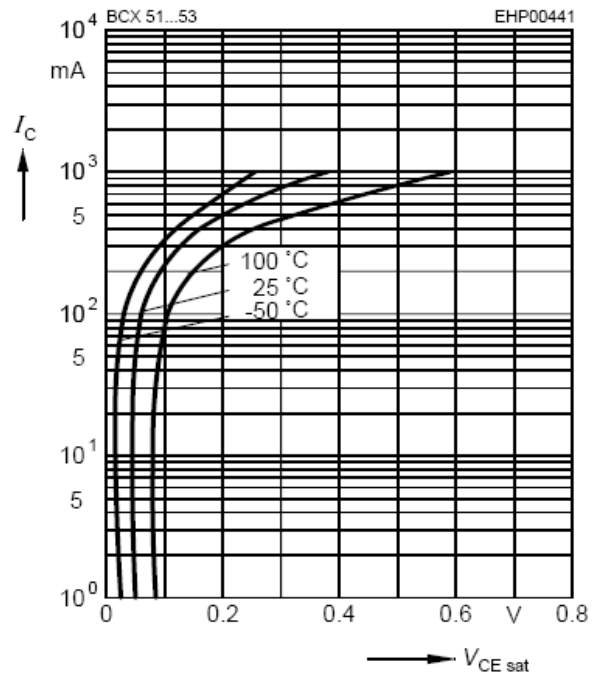
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 2V$



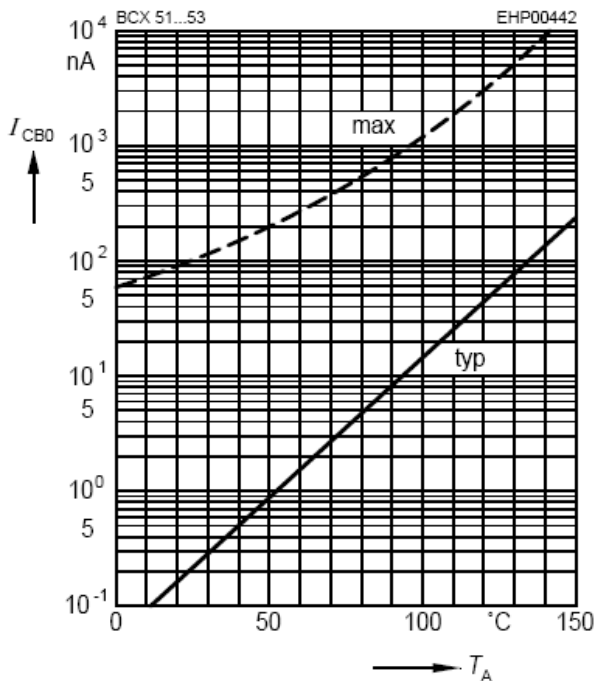
Collector-emitter saturation voltage

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



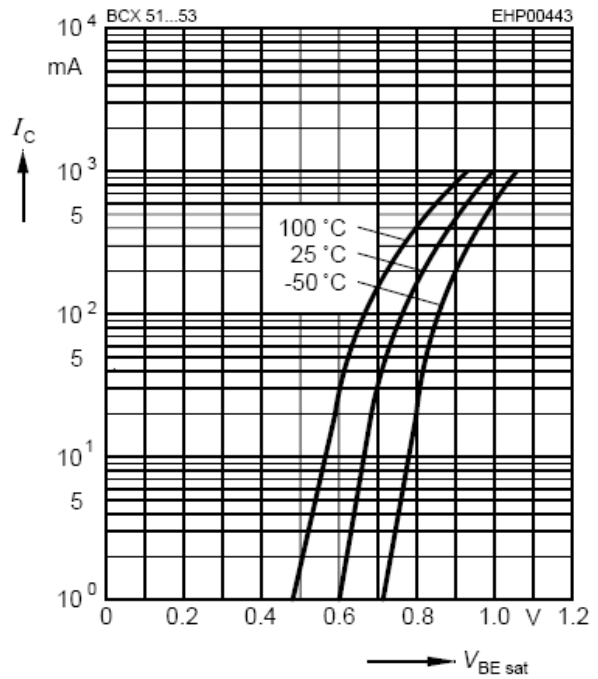
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CB} = 30V$

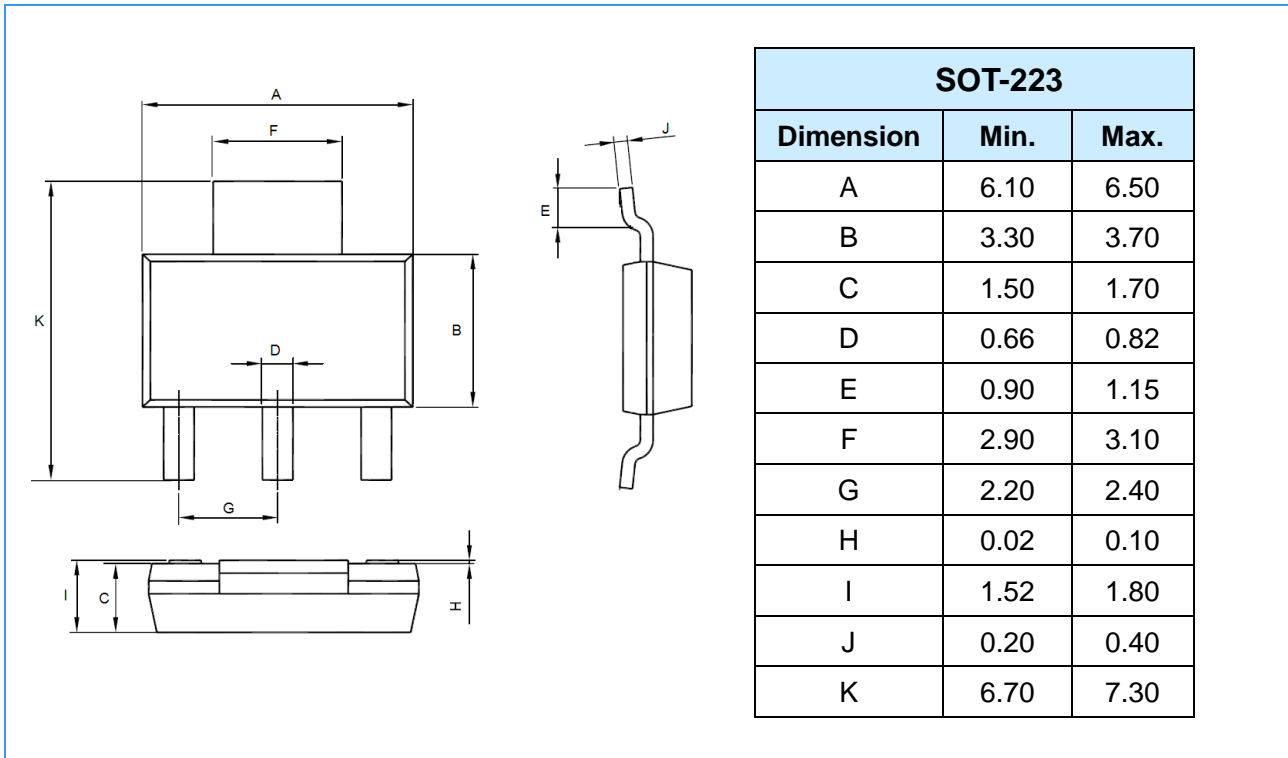


Base-emitter saturation voltage

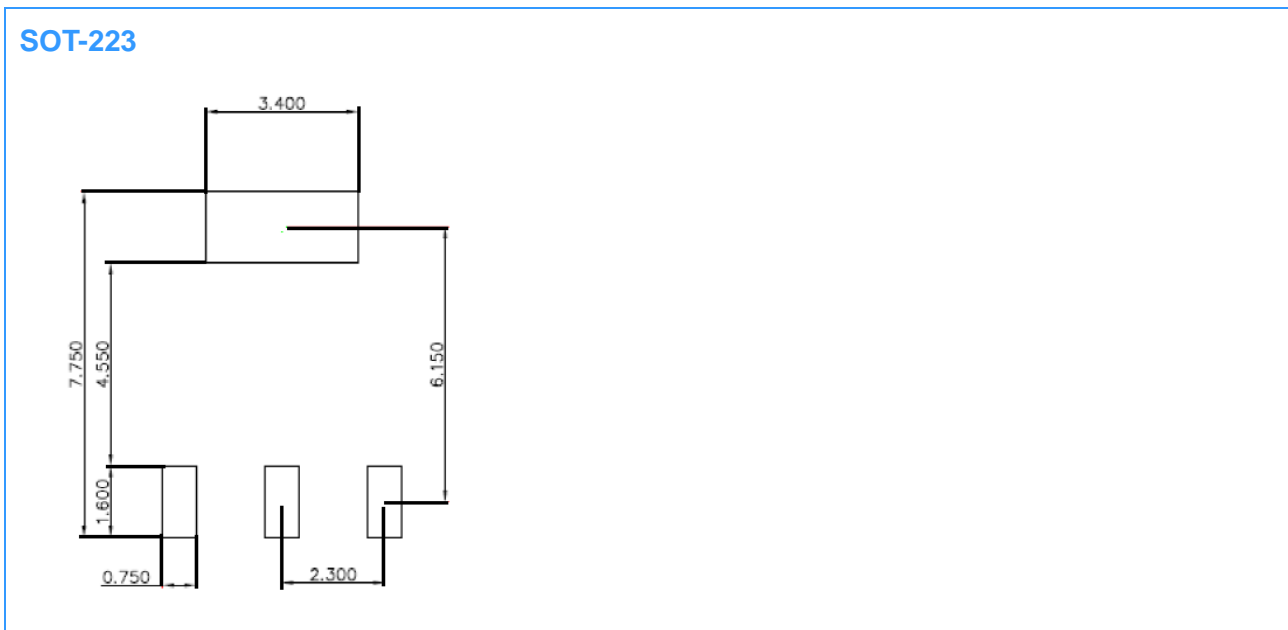
$I_C = f(V_{BEsat}), h_{FE} = 10$



Package Outline Dimensions (Unit: mm)



Mounting PAD Layout (Unit: mm)



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