

FAIRCHILD
SEMICONDUCTOR®

June 2007

BC183C

NPN General Purpose Amplifier



Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current (DC)	100	mA
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	350	mW
T_{STG}, T_J	Storage Junction Temperature Range	- 55 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max	Units
BV_{CBO}	Collector-Base Voltage	$I_C = 10\mu\text{A}$	45		V
BV_{CEO}	Collector-Emitter Voltage	$I_C = 2\text{mA}$	30		V
BV_{EBO}	Emitter-Base Voltage	$I_E = 100\mu\text{A}$	6		V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 30\text{V}$		15	nA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 4\text{V}$		15	nA
h_{FE}	DC Current Gain	$V_{CE} = 5\text{V}, I_C = 10\mu\text{A}$ $V_{CE} = 5\text{V}, I_C = 2.0\text{mA}$ $V_{CE} = 5\text{V}, I_C = 100\text{mA}$	40 120 80	800	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5.0\text{mA}$		0.25 0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 100\text{mA}, I_B = 5\text{mA}$		1.2	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	0.55	0.7	V
C_{OB}	Output Capacitance	$V_{CE} = 10\text{V}, f = 1.0\text{MHz}$		5	pF
f_T	Current gain Bandwidth Product	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	150		MHz
h_{fe}	Small Signal Current Gain	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$ $f = 1\text{KHz}$	450	900	
NF	Noise Figure	$V_{CE} = 5\text{V}, I_C = 200\text{mA}$ $R_G = 2\text{K}\Omega, f = 1\text{KHz}$		10	dB

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Typical Characteristics

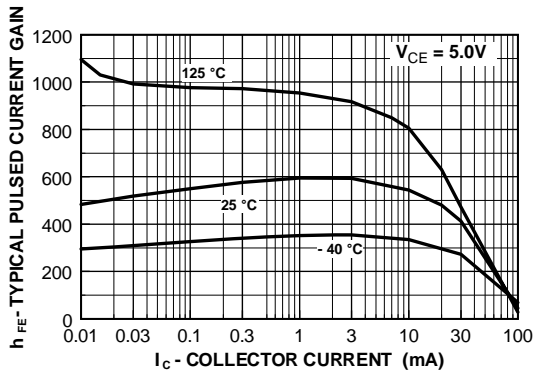


Figure 1. Typical Pulsed Current Gain vs Collector Current

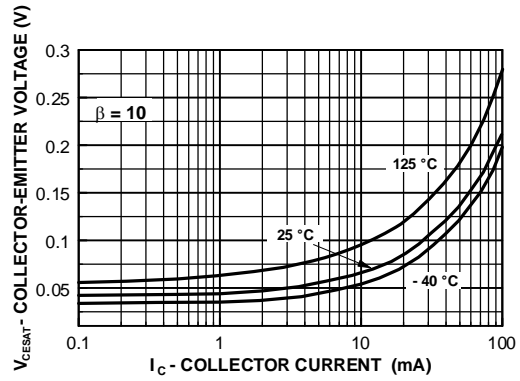


Figure 2. Collector-Emitter Saturation Voltage vs Collector Current

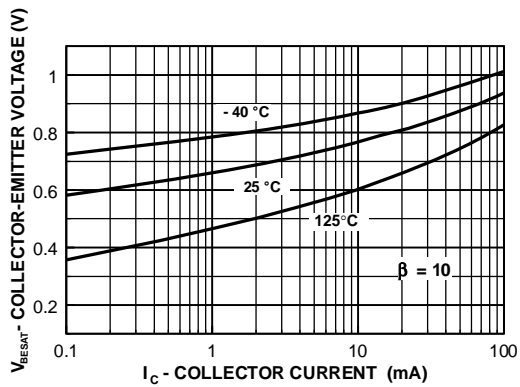


Figure 3. Base-Emitter Saturation Voltage vs Collector Current

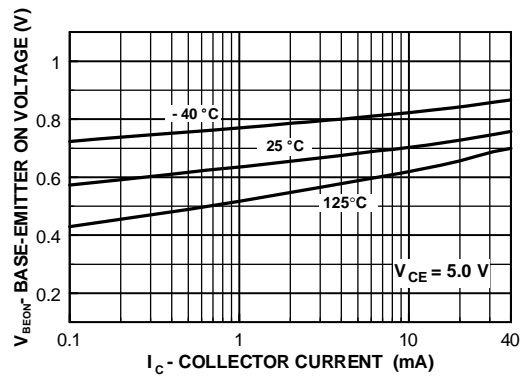


Figure 4. Base-Emitter ON Voltage vs Collector Current

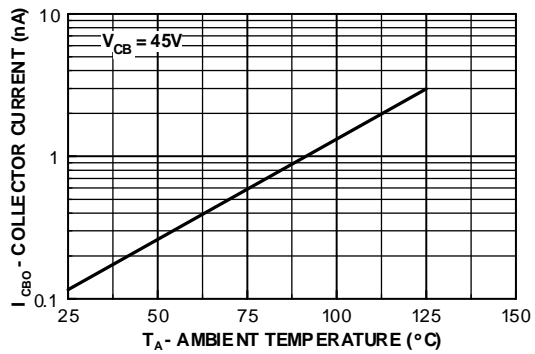


Figure 5. Collector-Cutoff Current vs Ambient Temperature

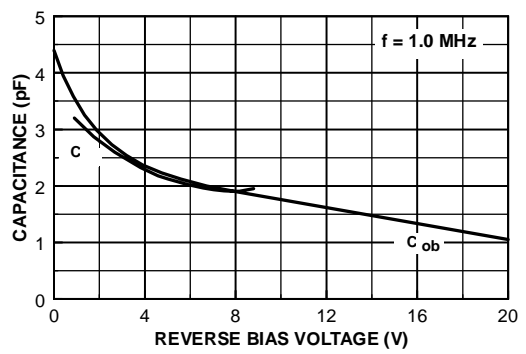


Figure 6. Input and Output Capacitance vs Reverse Bias Voltage



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