

June 2007

## **BC183C**

# **NPN General Purpose Amplifer**



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

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	45	V
V <sub>CEO</sub>	Collector-Emitter Voltage	30	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current (DC)	100	mA
P <sub>C</sub>	Collector Dissipation (T <sub>a</sub> =25°C)	350	mW
T <sub>STG</sub> , T <sub>J</sub>	Storage Junction Temperature Range	- 55 ~ 150	°C

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

Symbol	Parameter	Conditions	Min.	Max	Units
BV <sub>CBO</sub>	Collector-Base Voltage	I <sub>C</sub> = 10μA	45		V
BV <sub>CEO</sub>	Collector-Emitter Voltage	I <sub>C</sub> = 2mA	30		V
BV <sub>EBO</sub>	Emitter-Base Voltage	I <sub>E</sub> = 100μA	6		V
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>CB</sub> = 30V		15	nA
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = 4V		15	nA
h <sub>FE</sub>	DC Current Gain	$V_{CE} = 5V, I_{C} = 10\mu A$ $V_{CE} = 5V, I_{C} = 2.0mA$ $V_{CE} = 5V, I_{C} = 100mA$	40 120 80	800	
V <sub>CE</sub> (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 <sub>BE</sub> (sat)	Base-Emitter Saturation Voltage	$I_C = 100 \text{mA}, I_B = 5 \text{mA}$		1.2	V
V <sub>BE</sub> (on)	Base-Emitter On Voltage	$V_{CE} = 5V$ , $I_C = 2mA$	0.55	0.7	V
СОВ	Output Capacitance	V <sub>CE</sub> = 10V, f = 1.0MHz		5	pF
f <sub>T</sub>	Current gain Bandwidth Product	$V_{CE} = 5V$ , $I_C = 10mA$	150		MHz
h <sub>fe</sub>	Small Signal Current Gain	$V_{CE} = 5V, I_{C} = 2mA$ 450 900 f = 1KHz			
NF	Noise Figure	$V_{CE} = 5V$ , $I_{C} = 200$ mA $R_{G} = 2$ K $\Omega$ , $f = 1$ KHz		10	dB

### **Typical Characteristics**

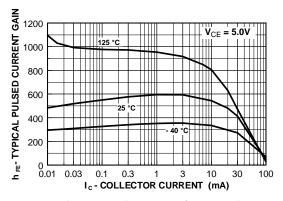
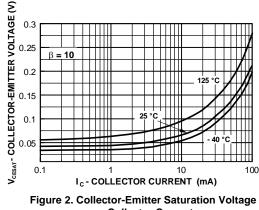


Figure 1. Typical Pulsed Current Gain vs Collector Current



vs Collector Current

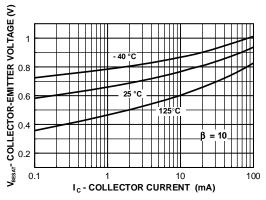


Figure 3. Base-Emitter Saturation Voltage vs Collector Curent

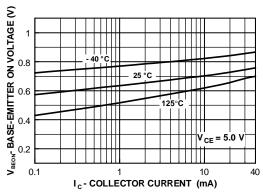


Figure 4. Base-Emitter ON Voltage vs Collector Current

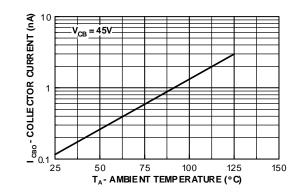


Figure 5. Collector-Cutoff Current vs Ambient Temperature

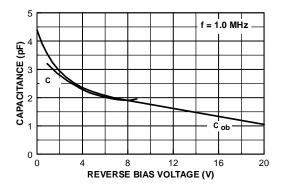


Figure 6. Input and Output Capacitance vs Reverse Bias Voltage





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