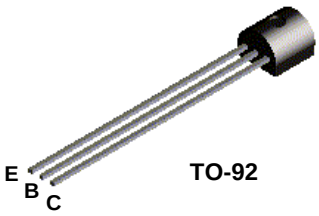
FAIRCHILD
SEMICONDUCTOR TM

BC548
BC548A
BC548B
BC548C



TO-92

NPN General Purpose Amplifier

This device is designed for use as general purpose amplifiers and switches requiring collector currents to 300 mA. Sourced from Process 10. See PN100A for characteristics.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	30	V
V_{CES}	Collector-Base Voltage	30	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current - Continuous	500	mA
T_J, T_{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:
1) These ratings are based on a maximum junction temperature of 150 degrees C.
2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		BC548 / A / B / C	
P_D	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	°C/W

NPN General Purpose Amplifier
(continued)

Electrical Characteristics
TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions		Min	Max	Units
OFF CHARACTERISTICS						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C = 10 mA, I_B = 0		30		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10 µA, I_E = 0		30		V
$V_{(BR)CES}$	Collector-Base Breakdown Voltage	I_C = 10 µA, I_E = 0		30		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10 µA, I_C = 0		5.0		V
I_{CBO}	Collector Cutoff Current	V_{CB} = 30 V, I_E = 0 V_{CB} = 30 V, I_E = 0, T_A = +150 °C			15 5.0	nA µA
ON CHARACTERISTICS						
h_{FE}	DC Current Gain	V_{CE} = 5.0 V, I_C = 2.0 mA	**548** **548A** **548B** **548C**	110 110 200 420	800 220 450 800	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 10 mA, I_B = 0.5 mA I_C = 100 mA, I_B = 5.0 mA			0.25 0.60	V V
$V_{BE(on)}$	Base-Emitter On Voltage	V_{CE} = 5.0 V, I_C = 2.0 mA V_{CE} = 5.0 V, I_C = 10 mA		0.58	0.70 0.77	V V
SMALL SIGNAL CHARACTERISTICS						
h_{fe}	Small-Signal Current Gain	I_C = 2.0 mA, V_{CE} = 5.0 V, f = 1.0 kHz		125	900	
NF	Noise Figure	V_{CE} = 5.0 V, I_C = 200 µA, R_S = 2.0 kΩ, f = 1.0 kHz, B_W = 200 Hz			10	dB

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