

CentralTM Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

BC546, A, B
BC547, A, B, C
BC548, A, B, C

NPN SILICON TRANSISTOR

JEDEC TO-92-18R CASE (CBE)

DESCRIPTION

The CENTRAL SEMICONDUCTOR BC546, BC547, BC548 series types are silicon NPN small signal transistors manufactured by the epitaxial planar process designed for general purpose amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	BC546	BC547	BC548	UNIT
Collector-Base Voltage	V _{CB0}	80	50	30	V
Collector-Emitter Voltage	V _{CES}	80	50	30	V
Collector-Emitter Voltage	V _{CEO}	65	45	30	V
Emitter-Base Voltage	V _{EBO}	6.0	6.0	5.0	V
Collector Current	I _C		100		mA
Collector Current (PEAK)	I _{CM}		200		mA
Base Current (PEAK)	I _{BM}		200		mA
Emitter Current (PEAK)	I _{EM}		200		mA
Power Dissipation	P _D		500		mW
Operating and Storage Junction Temperature	T _J , T _{stg}		-65 to +150		°C
Thermal Resistance	θ _{JA}		0.25		°C/W
Thermal Resistance	θ _{JC}		0.15		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
I _{CB0}	V _{CB} =30V			15	nA
I _{CB0}	V _{CB} =30V, T _A =150°C			5.0	μA
V _{CE(SAT)}	I _C =10mA, I _B =0.5mA			0.25	V
V _{CE(SAT)}	I _C =100mA, I _B =5.0mA			0.60	V
V _{BE(SAT)}	I _C =10mA, I _B =0.5mA		0.70		V
V _{BE(SAT)}	I _C =100mA, I _B =5.0mA		0.90		V
V _{BE(ON)}	V _{CE} =5.0V, I _C =2.0mA	0.58		0.70	V
V _{BE(ON)}	V _{CE} =5.0V, I _C =10mA			0.77	V
h _{FE}	V _{CE} =5.0V, I _C =10μA (BC546, A, BC547, A, BC548, A)		90		
h _{FE}	V _{CE} =5.0V, I _C =10μA (BC546B, BC547B, BC548B)		150		
h _{FE}	V _{CE} =5.0V, I _C =10μA (BC547C, BC548C)		270		
h _{FE}	V _{CE} =5.0V, I _C =2.0mA (BC546)	110		450	
h _{FE}	V _{CE} =5.0V, I _C =2.0mA (BC546A, BC547A, BC548A)	110		220	
h _{FE}	V _{CE} =5.0V, I _C =2.0mA (BC546B, BC547B, BC548B)	200		450	
h _{FE}	V _{CE} =5.0V, I _C =2.0mA (BC547)	110		800	
h _{FE}	V _{CE} =5.0V, I _C =2.0mA (BC548)	110		800	
h _{FE}	V _{CE} =5.0V, I _C =2.0mA (BC547C, BC548C)	420		800	

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted) continued:

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>TYP</u>	<u>MAX</u>	<u>UNIT</u>
h_{fe}	$V_{CE}=5.0\text{V}$, $I_C=2.0\text{mA}$, $f=1.0\text{kHz}$	125		900	
f_T	$V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$, $f=35\text{MHz}$		300		MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$		2.5		pF
C_{ib}	$V_{EB}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$		9.0		pF
NF	$V_{CE}=5.0\text{V}$, $I_C=0.2\text{mA}$, $R_g=2.0\text{k}\Omega$, $B=200\text{Hz}$, $f=1.0\text{kHz}$		2.0	10	dB

CentralTM
Semiconductor Corp.

145 Adams Avenue
Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824
www.centrasemi.com