

BC546/547/548/549/550

Switching and Applications

- High Voltage: BC546, $V_{CE0}=65V$
- Low Noise: BC549, BC550
- Complement to BC556 ... BC560



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_a=25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : BC546	80	V
	: BC547/550	50	V
	: BC548/549	30	V
V_{CEO}	Collector-Emitter Voltage : BC546	65	V
	: BC547/550	45	V
	: BC548/549	30	V
V_{EBO}	Emitter-Base Voltage : BC546/547	6	V
	: BC548/549/550	5	V
I_C	Collector Current (DC)	100	mA
P_C	Collector Power Dissipation	500	mW
T_J	Junction Temperature	150	$^\circ C$
T_{STG}	Storage Temperature	-65 ~ 150	$^\circ C$

Electrical Characteristics $T_a=25^\circ C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	$V_{CB}=30V, I_E=0$			15	nA
h_{FE}	DC Current Gain	$V_{CE}=5V, I_C=2mA$	110		800	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10mA, I_B=0.5mA$		90	250	mV
		$I_C=100mA, I_B=5mA$		200	600	mV
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10mA, I_B=0.5mA$		700		mV
		$I_C=100mA, I_B=5mA$		900		mV
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE}=5V, I_C=2mA$	580	660	700	mV
		$V_{CE}=5V, I_C=10mA$			720	mV
f_T	Current Gain Bandwidth Product	$V_{CE}=5V, I_C=10mA, f=100MHz$		300		MHz
C_{ob}	Output Capacitance	$V_{CB}=10V, I_E=0, f=1MHz$		3.5	6	pF
C_{ib}	Input Capacitance	$V_{EB}=0.5V, I_C=0, f=1MHz$		9		pF
NF	Noise Figure	: BC546/547/548	$V_{CE}=5V, I_C=200\mu A$	2	10	dB
		: BC549/550	$f=1KHz, R_G=2K\Omega$	1.2	4	dB
		: BC549	$V_{CE}=5V, I_C=200\mu A$	1.4	4	dB
		: BC550	$R_G=2K\Omega, f=30\sim 15000MHz$	1.4	3	dB

h_{FE} Classification

Classification	A	B	C
h_{FE}	110 ~ 220	200 ~ 450	420 ~ 800

Typical Characteristics



Figure 1. Static Characteristic



Figure 2. Transfer Characteristic



Figure 3. DC current Gain



Figure 4. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



Figure 5. Output Capacitance



Figure 6. Current Gain Bandwidth Product

Package Dimensions

TO-92



Dimensions in Millimeters

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