

## BC546/547/548/549/550

### **Switching and Applications**

- High Voltage: BC546, V<sub>CEO</sub>=65V
  Low Noise: BC549, BC550
- Complement to BC556 ... BC560



## **NPN Epitaxial Silicon Transistor**

### **Absolute Maximum Ratings** $T_a=25$ °C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage : BC546	80	V
	: BC547/550	50	V
	: BC548/549	30	V
V <sub>CEO</sub>	Collector-Emitter Voltage : BC546	65	V
	: BC547/550	45	V
	: BC548/549	30	V
V <sub>EBO</sub>	Emitter-Base Voltage : BC546/547	6	V
	: BC548/549/550	5	V
I <sub>C</sub>	Collector Current (DC)	100	mA
I <sub>C</sub>	Collector Power Dissipation	500	mW
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	-65 ~ 150	°C

### **Electrical Characteristics** $T_a=25$ °C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
I <sub>CBO</sub>	Collector Cut-off Current	$V_{CB}=30V$ , $I_{E}=0$			15	nA
h <sub>FE</sub>	DC Current Gain	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	110		800	
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA I <sub>C</sub> =100mA, I <sub>B</sub> =5mA		90 200	250 600	mV mV
V <sub>BE</sub> (sat)	Base-Emitter Saturation Voltage	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA I <sub>C</sub> =100mA, I <sub>B</sub> =5mA		700 900		mV mV
V <sub>BE</sub> (on)	Base-Emitter On Voltage	$V_{CE}$ =5V, $I_{C}$ =2mA $V_{CE}$ =5V, $I_{C}$ =10mA	580	660	700 720	mV mV
f <sub>T</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=100MHz		300		MHz
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		3.5	6	pF
C <sub>ib</sub>	Input Capacitance	V <sub>EB</sub> =0.5V, I <sub>C</sub> =0, f=1MHz		9		pF
NF	Noise Figure : BC546/547/548 : BC549/550	$V_{CE}$ =5V, $I_{C}$ =200μA f=1KHz, $R_{G}$ =2K $\Omega$		2 1.2	10 4	dB dB
	: BC549 : BC550	$V_{CE}$ =5V, $I_{C}$ =200μA $R_{G}$ =2K $\Omega$ , f=30~15000MHz		1.4 1.4	4 3	dB dB

## **h**<sub>FE</sub> Classification

Classification	А	В	С
h <sub>FE</sub>	110 ~ 220	200 ~ 450	420 ~ 800

# **Typical Characteristics**

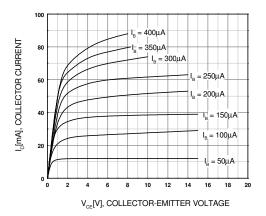


Figure 1. Static Characteristic

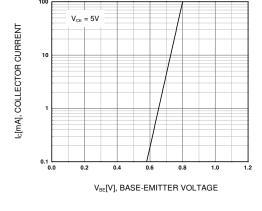


Figure 2. Transfer Characteristic

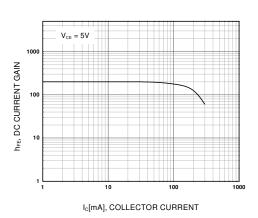


Figure 3. DC current Gain

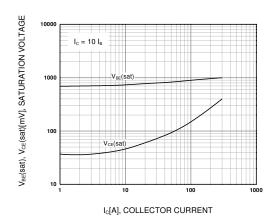


Figure 4. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

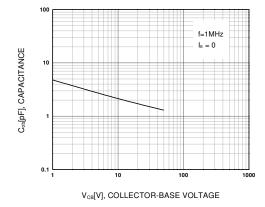


Figure 5. Output Capacitance

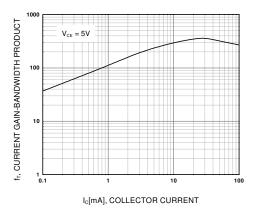
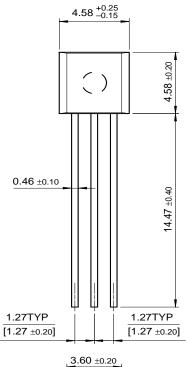


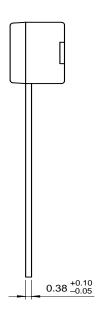
Figure 6. Current Gain Bandwidth Product

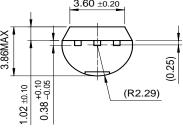
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# **Package Dimensions**

TO-92







Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench <sup>®</sup>	SuperSOT™-6
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DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E <sup>2</sup> CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I <sup>2</sup> C™	OCXTM	RapidConfigure™	UHC™
Across the board.	Around the world.™	OCXPro™	RapidConnect™	UltraFET <sup>®</sup>
The Power Franci	hise™	OPTOLOGIC <sup>®</sup>	SILENT SWITCHER®	VCX™
Programmable Ad	ctive Droop™	OPTOPLANAR™	SMART START™	

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