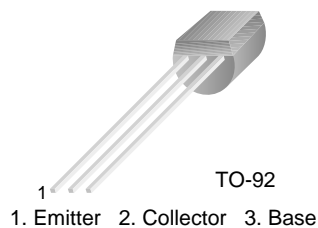


# BC640

## PNP Epitaxial Silicon Transistor

### Switching and Amplifier Applications

- Complement to BC639



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

Symbol	Parameter	Value	Units
$V_{CER}$	Collector-Emitter Voltage at $R_{BE}=1K\Omega$	-100	V
$V_{CES}$	Collector-Emitter Voltage	-100	V
$V_{CEO}$	Collector-Emitter Voltage	-80	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-1	A
$I_{CP}$	Peak Collector Current	-1.5	A
$I_B$	Base Current	-100	mA
$P_C$	Collector Power Dissipation	1	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-65 ~ 150	$^\circ\text{C}$

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

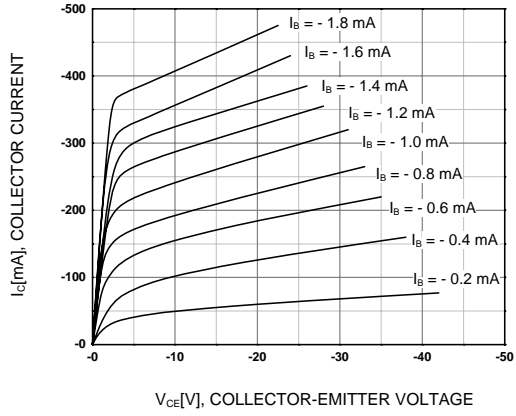
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{mA}, I_B = 0$	-80			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -30\text{V}, I_E = 0$			-0.1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = -5\text{V}, I_C = 0$			-10	$\mu\text{A}$
$h_{FE1}$ $h_{FE2}$ $h_{FE3}$	DC Current Gain	$V_{CE} = -2\text{V}, I_C = -5\text{mA}$ $V_{CE} = -2\text{V}, I_C = -150\text{mA}$ $V_{CE} = -2\text{V}, I_C = -500\text{mA}$	25 40 25		160	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -500\text{mA}, I_B = -50\text{mA}$			-0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$			-1	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -5\text{V}, I_C = -10\text{mA}, f = 50\text{MHz}$		100		MHz

**Package Marking and Ordering Information**

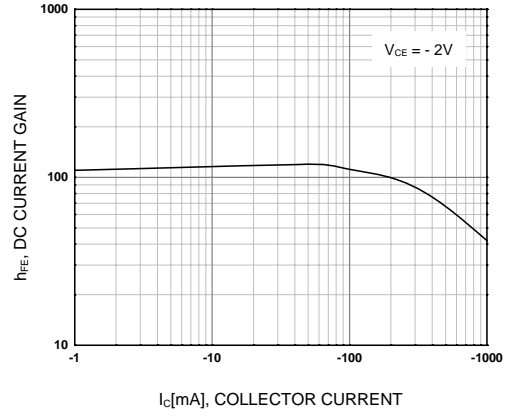
<b>Device Marking</b>	<b>Device</b>	<b>Package</b>
BC640	BC640	TO-92
BC640	BC640BU	TO-92
BC640	BC640TA	TO-92
BC640	BC640TAR	TO-92
BC640	BC640TF	TO-92
BC640	BC640TFR	TO-92
BC640	BC640_J35Z	TO-92
BC640	BC640_J61Z	TO-92

## Typical Performance Characteristics

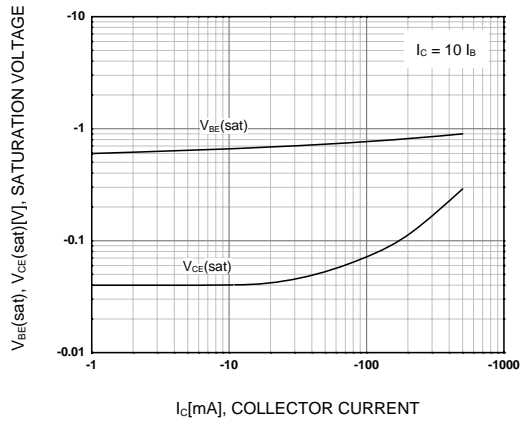
**Figure 1. Static Characteristic**



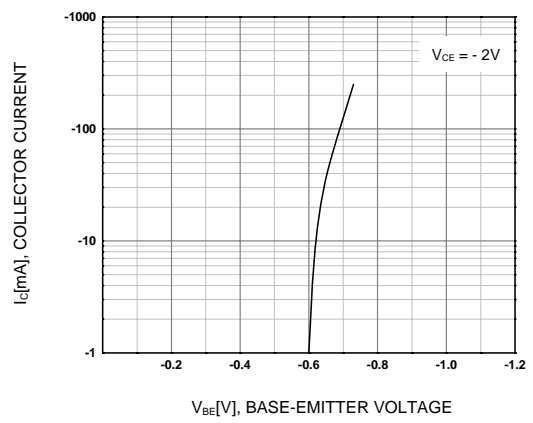
**Figure 2. DC Current Gain**



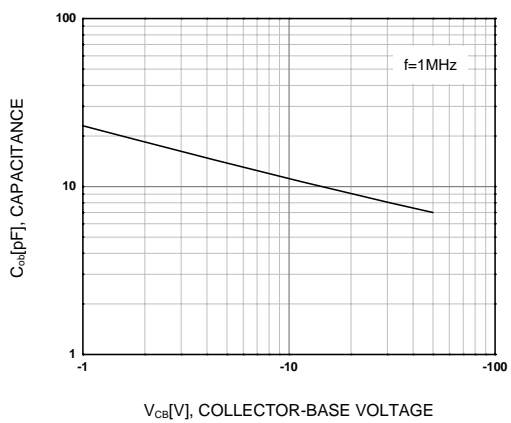
**Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Figure 4. Base-Emitter On Voltage**

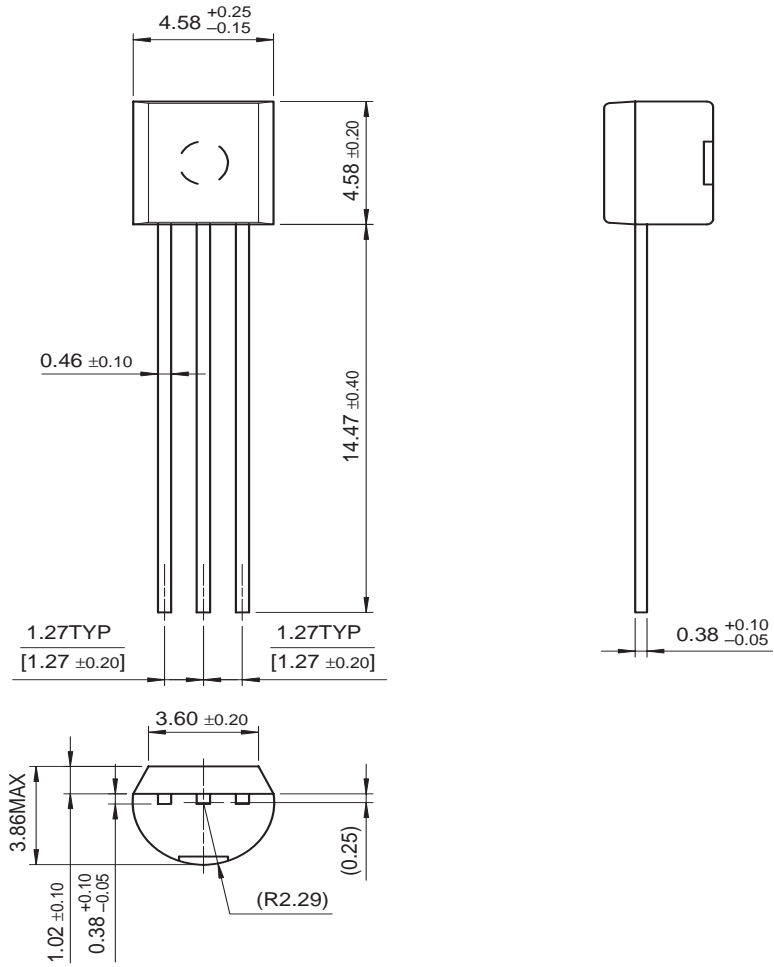


**Figure 5. Collector Output Capacitance**



Mechanical Dimensions

TO-92









Dimensions in Millimeters



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