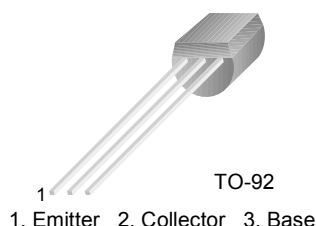


# BC640

## 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
$V_{\text{CER}}$	Collector-Emitter Voltage at $R_{\text{BE}}=1\text{K}\Omega$	-100	V
$V_{\text{CES}}$	Collector-Emitter Voltage	-100	V
$V_{\text{CEO}}$	Collector-Emitter Voltage	-80	V
$V_{\text{EBO}}$	Emitter-Base Voltage	-5	V
$I_{\text{C}}$	Collector Current	-1	A
$I_{\text{CP}}$	Peak Collector Current	-1.5	A
$I_{\text{B}}$	Base Current	-100	mA
$P_{\text{C}}$	Collector Power Dissipation	1	W
$T_{\text{J}}$	Junction Temperature	150	$^\circ\text{C}$
$T_{\text{STG}}$	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
$BV_{\text{CEO}}$	Collector-Emitter Breakdown Voltage	$I_{\text{C}} = -10\text{mA}$ , $I_{\text{B}} = 0$	-80			V
$I_{\text{CBO}}$	Collector Cut-off Current	$V_{\text{CB}} = -30\text{V}$ , $I_{\text{E}} = 0$			-0.1	$\mu\text{A}$
$I_{\text{EBO}}$	Emitter Cut-off Current	$V_{\text{EB}} = -5\text{V}$ , $I_{\text{C}} = 0$			-0.1	$\mu\text{A}$
$h_{\text{FE1}}$ $h_{\text{FE2}}$ $h_{\text{FE3}}$	DC Current Gain	$V_{\text{CE}} = -2\text{V}$ , $I_{\text{C}} = -5\text{mA}$ $V_{\text{CE}} = -2\text{V}$ , $I_{\text{C}} = -150\text{mA}$ $V_{\text{CE}} = -2\text{V}$ , $I_{\text{C}} = -500\text{mA}$	25 40 25		160	
$V_{\text{CE}}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_{\text{C}} = -500\text{mA}$ , $I_{\text{B}} = -50\text{mA}$			-0.5	V
$V_{\text{BE}}(\text{on})$	Base-Emitter On Voltage	$V_{\text{CE}} = -2\text{V}$ , $I_{\text{C}} = -500\text{mA}$			-1	V
$f_{\text{T}}$	Current Gain Bandwidth Product	$V_{\text{CE}} = -5\text{V}$ , $I_{\text{C}} = -10\text{mA}$ , $f = 50\text{MHz}$		100		MHz

**Package Marking and Ordering Information**

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
BC640	BC640BU	TO-92	--	--	10,000
BC640	BC640TA	TO-92	--	--	2,000
BC640	BC640TAR	TO-92	--	--	2,000
BC640	BC640TF	TO-92	--	--	2,000
BC640	BC640TFR	TO-92	--	--	2,000

## Typical Performance Characteristics

Figure 1. Static Characteristic

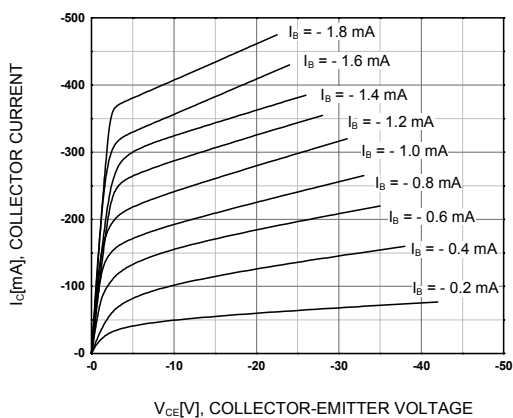


Figure 2. DC Current Gain

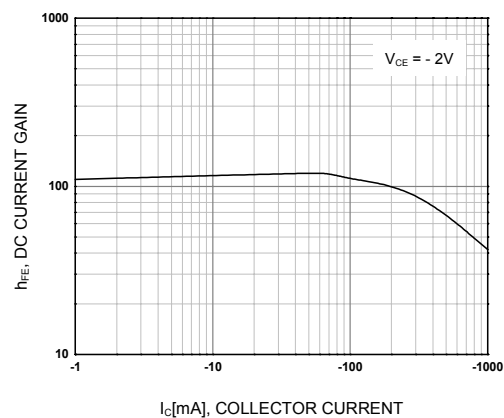


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

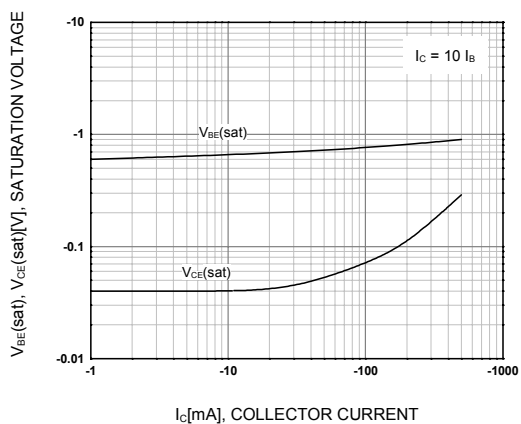


Figure 4. Base-Emitter On Voltage

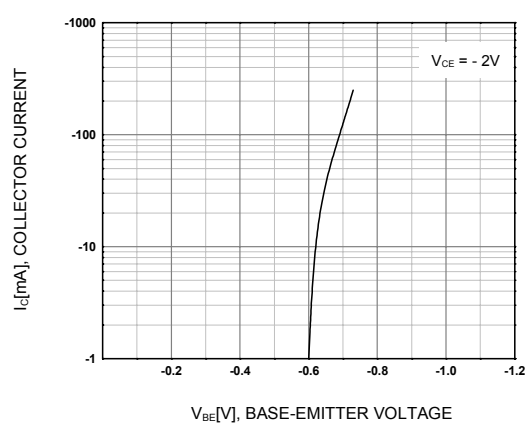
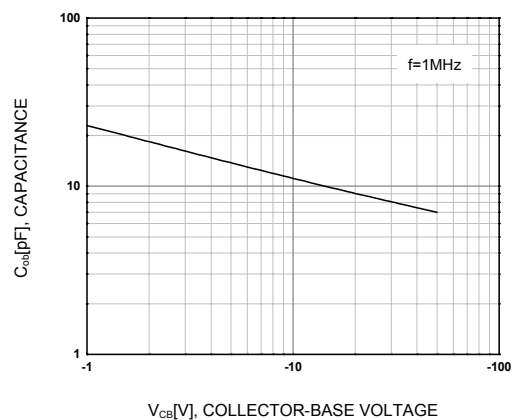
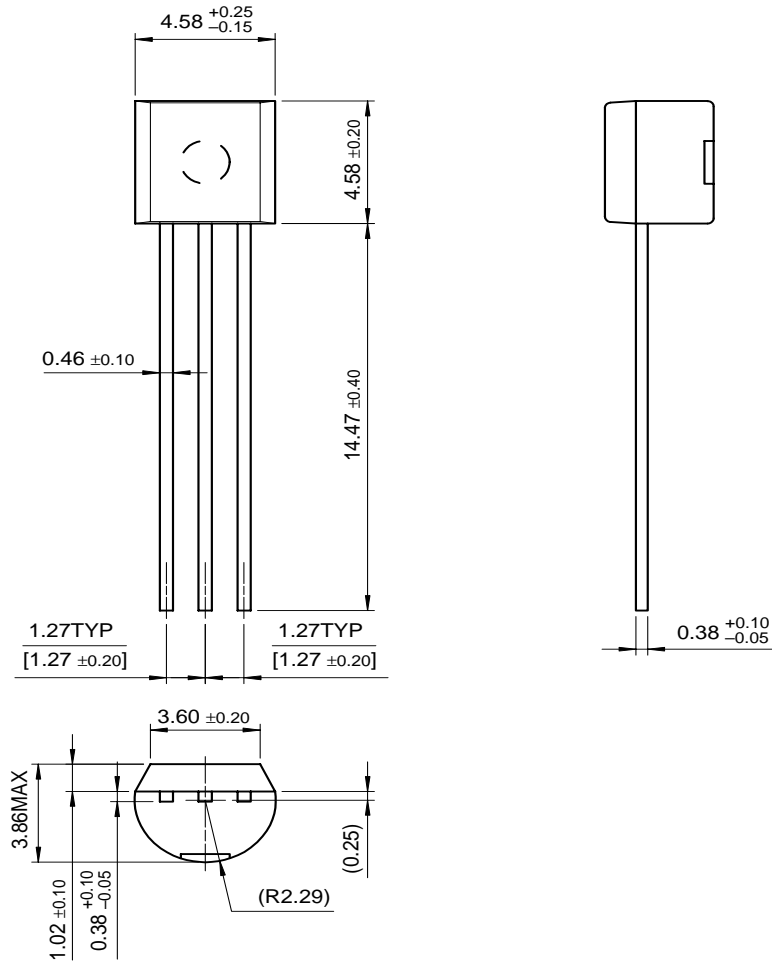


Figure 5. Collector Output Capacitance



# Mechanical Dimensions

## TO-92



Dimensions in Millimeters

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