

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 $R_{BE}=1\text{K}\Omega$	-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	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -5\text{V}$, $I_C = 0$			-10	μA
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	
$V_{CE(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$			-0.5	V
$V_{BE(\text{on})}$	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

Device Marking	Device	Package
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

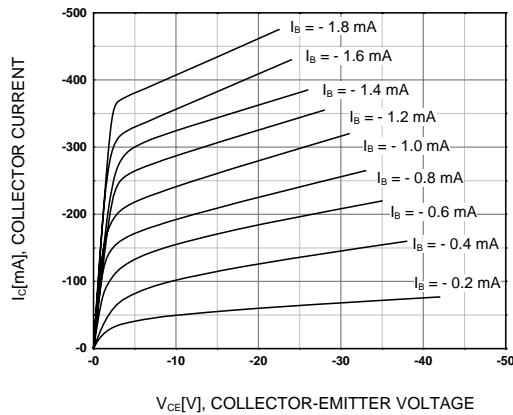


Figure 2. DC Current Gain

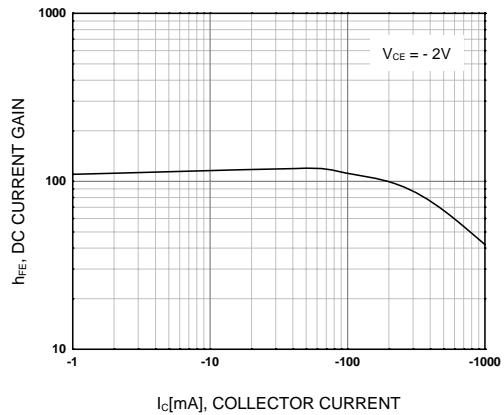


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

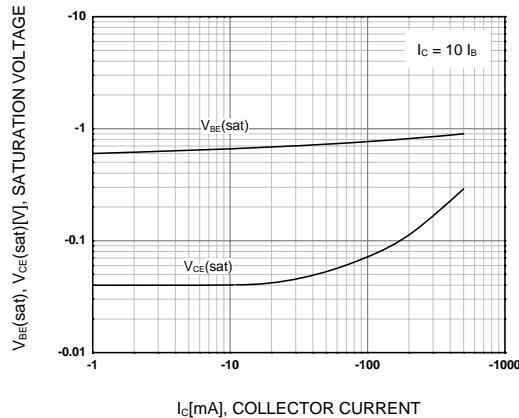


Figure 4. Base-Emitter On Voltage

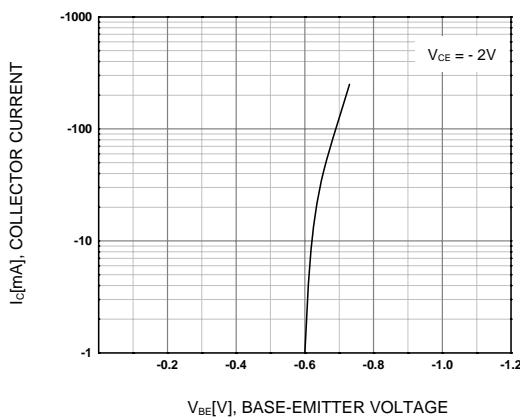
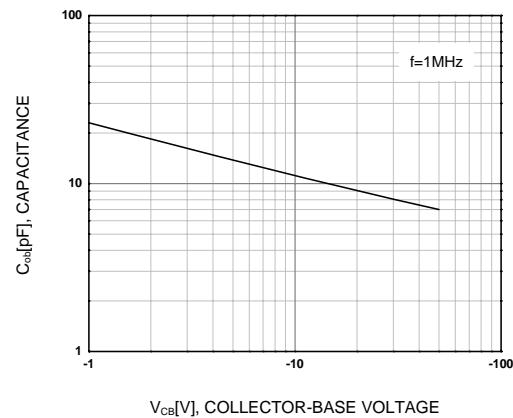
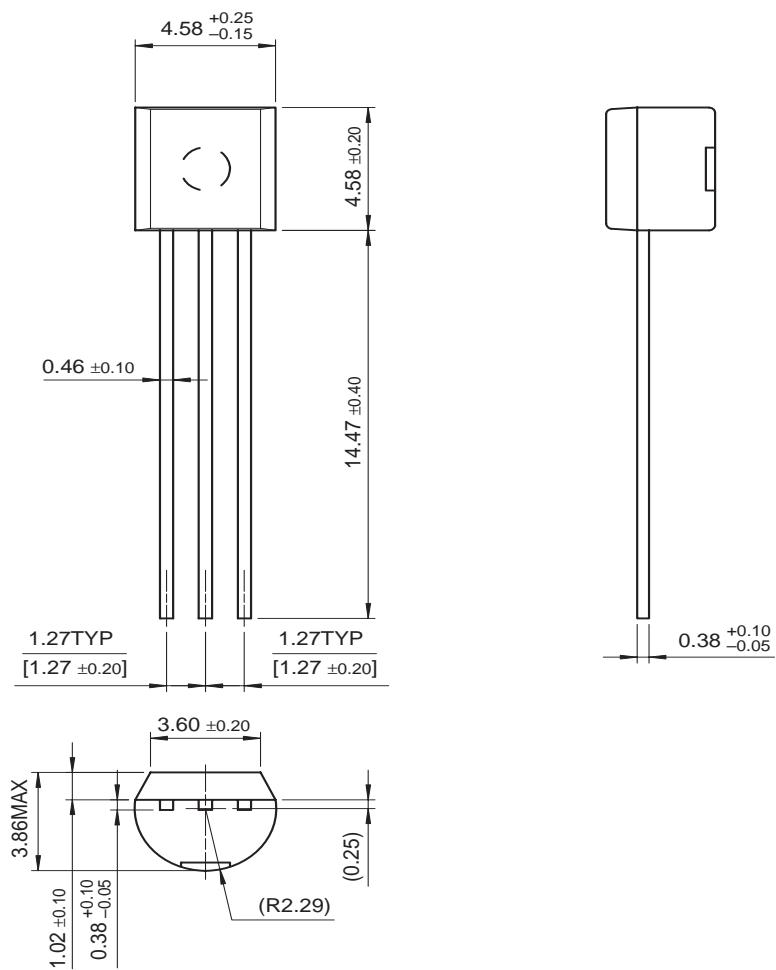


Figure 5. Collector Output Capacitance



Mechanical Dimensions

TO-92



Dimensions in Millimeters



TRADEMARKS

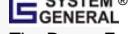
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