

# TO-126 Plastic-Encapsulate Transistors

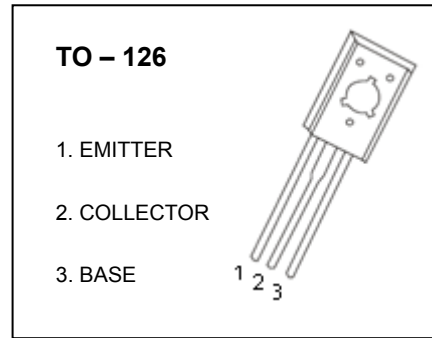
## BD140 TRANSISTOR (PNP)

### FEATURES

- High Current
- Complement To BD139

### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CB0}$	Collector-Base Voltage	-80	V
$V_{CE0}$	Collector-Emitter Voltage	-80	V
$V_{EB0}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-1.5	A
$P_C$	Collector Power Dissipation	1.25	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	100	$^\circ\text{C}/\text{W}$
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~+150	$^\circ\text{C}$



### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -0.1\text{mA}, I_E = 0$	-1			V
Collector-emitter sustaining voltage	$V_{CE0(SUS)}$	$I_C = -0.03\text{A}, I_B = 0$	-1			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -0.1\text{mA}, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -30\text{V}, I_E = 0$			-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{V}, I_C = 0$			-10	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE} = -2\text{V}, I_C = -150\text{mA}$	40		250	
	$h_{FE(2)}$	$V_{CE} = -2\text{V}, I_C = -5\text{mA}$	25			
	$h_{FE(3)}$	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	25			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$			-0.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$			-1	V

\*Pulse test: pulse width  $\leq 350\mu\text{s}$ , duty cycles  $\leq 2.0\%$ .

### CLASSIFICATION OF $h_{FE(1)}$

RANK	6	10	16
RANGE	40-100	63-160	100-250

Static Characteristic

