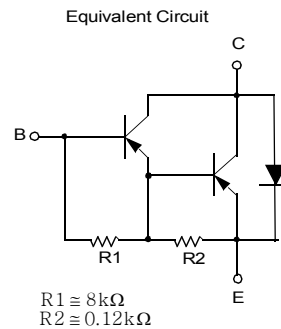
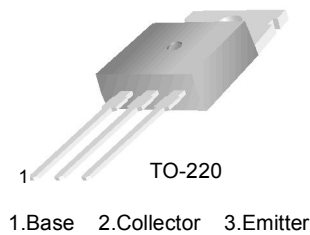


# TIP125/TIP126/TIP127

## PNP Epitaxial Darlington Transistor

- Medium Power Linear Switching Applications
- Complementary to TIP120/121/122



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

Symbol	Parameter	Ratings	Units
$V_{CBO}$	Collector-Base Voltage : TIP125	- 60	V
	: TIP126	- 80	V
	: TIP127	- 100	V
$V_{CEO}$	Collector-Emitter Voltage : TIP125	- 60	V
	: TIP126	- 80	V
	: TIP127	- 100	V
$V_{EBO}$	Emitter-Base Voltage	- 5	V
$I_C$	Collector Current (DC)	- 5	A
$I_{CP}$	Collector Current (Pulse)	- 8	A
$I_B$	Base Current (DC)	- 120	mA
$P_C$	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	2	W
	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	65	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{\text{CEO(sus)}}$	Collector-Emitter Sustaining Voltage : TIP125 : TIP126 : TIP127	$I_C = -100\text{mA}, I_B = 0$	-60 -80 -120			V V V
$I_{\text{CEO}}$	Collector Cut-off Current : TIP125 : TIP126 : TIP127	$V_{\text{CE}} = -30\text{V}, I_B = 0$ $V_{\text{CE}} = -40\text{V}, I_B = 0$ $V_{\text{CE}} = -50\text{V}, I_B = 0$			-2 -2 -2	mA mA mA
$I_{\text{CBO}}$	Collector Cut-off Current : TIP125 : TIP126 : TIP127	$V_{\text{CB}} = -60\text{V}, I_E = 0$ $V_{\text{CB}} = -80\text{V}, I_E = 0$ $V_{\text{CB}} = -100\text{V}, I_E = 0$			-1 -1 -1	mA mA mA
$I_{\text{EBO}}$	Emitter Cut-off Current	$V_{\text{BE}} = -5\text{V}, I_C = 0$			-2	mA
$h_{\text{FE}}$	* DC Current Gain	$V_{\text{CE}} = -3\text{V}, I_C = 0.5\text{A}$ $V_{\text{CE}} = -3\text{V}, I_C = -3\text{A}$	1000 1000			
$V_{\text{CE(sat)}}$	* Collector-Emitter Saturation Voltage	$I_C = -3\text{A}, I_B = -12\text{mA}$ $I_C = -5\text{A}, I_B = -20\text{mA}$			-2 -4	V V
$V_{\text{BE(on)}}$	* Base-Emitter On Voltage	$V_{\text{CE}} = -3\text{V}, I_C = -3\text{A}$			-2.5	V
$C_{\text{ob}}$	Output Capacitance	$V_{\text{CB}} = -10\text{V}, I_E = 0, f = 0.1\text{MHz}$			300	pF

\* Pulse Test: Pulse Width $\leq 300\mu\text{s}$ , Duty Cycle $\leq 2\%$

# Typical Characteristics

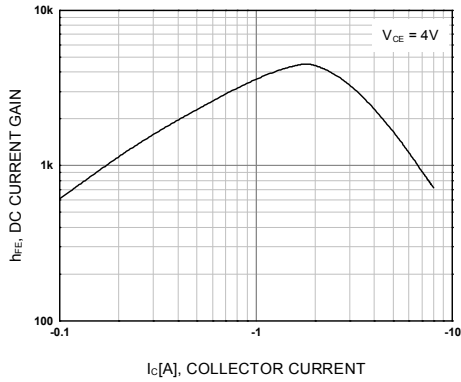


Figure 1. DC current Gain

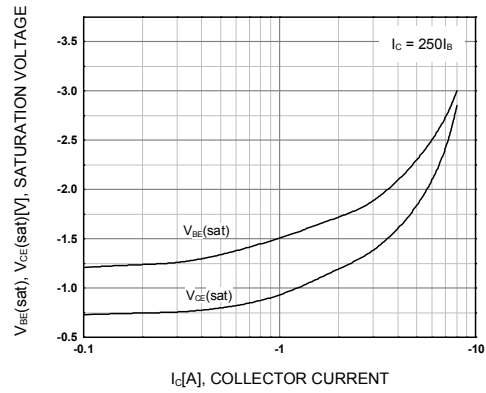


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

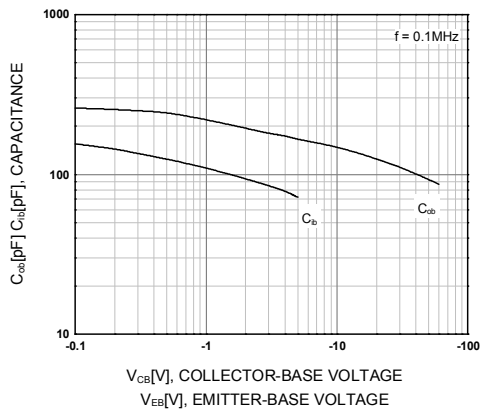


Figure 3. Output and Input Capacitance  
vs. Reverse Voltage

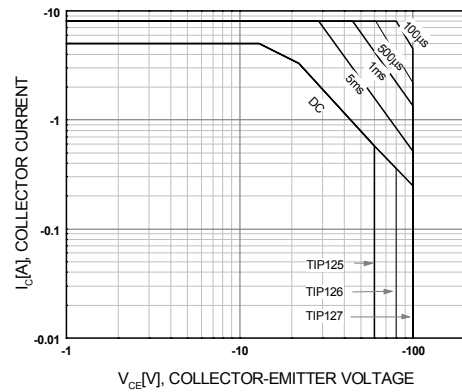


Figure 4. Safe Operating Area

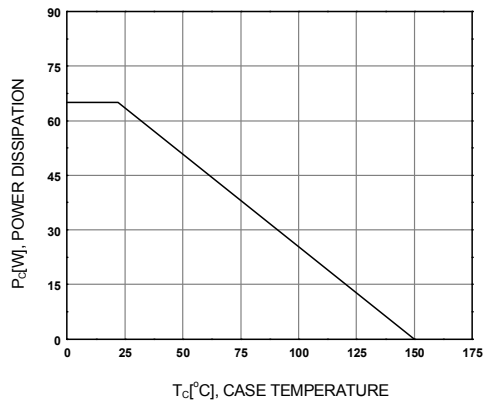
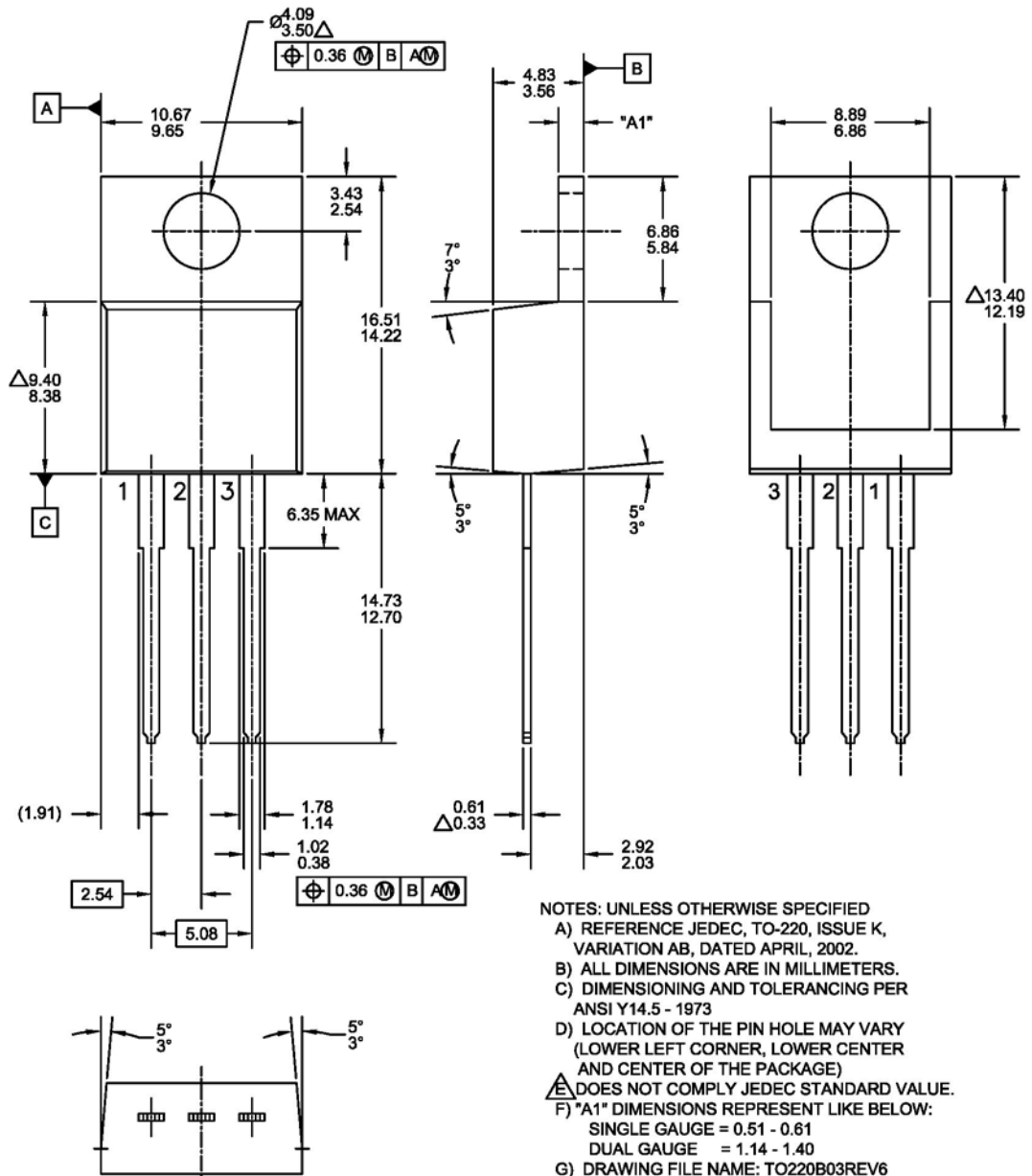


Figure 5. Power Derating

# Mechanical Dimensions

## TO220



TIP125/TIP126/TIP127 — PNP Epitaxial Darlington Transistor