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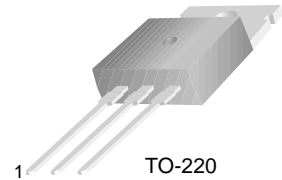


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**Medium Power Linear Switching Applications**

- Complementary to TIP120/121/122



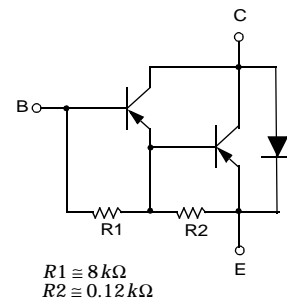
TO-220  
1.Base 2.Collector 3.Emmitter

**PNP Epitaxial Darlington Transistor**

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

Symbol	Parameter	Value	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	$^\circ\text{C}$

Equivalent Circuit



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

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

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

# Typical Characteristics

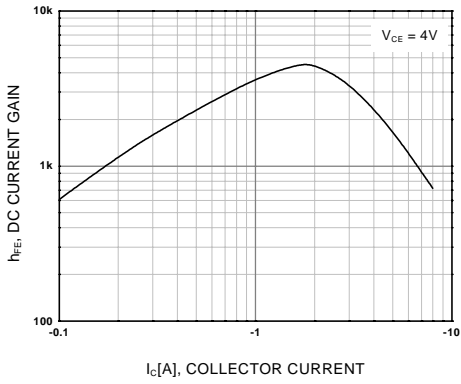


Figure 1. DC current Gain

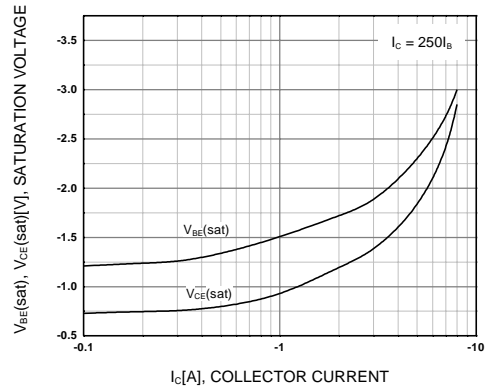


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

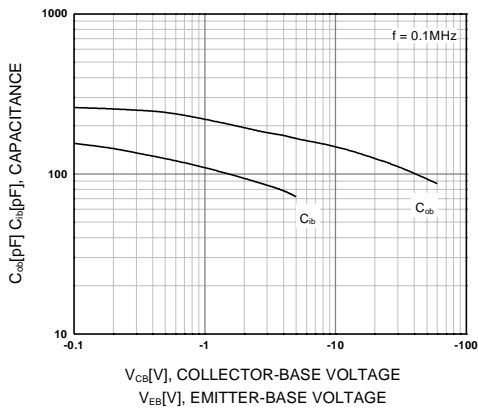


Figure 3. Output and Input Capacitance  
vs. Reverse Voltage

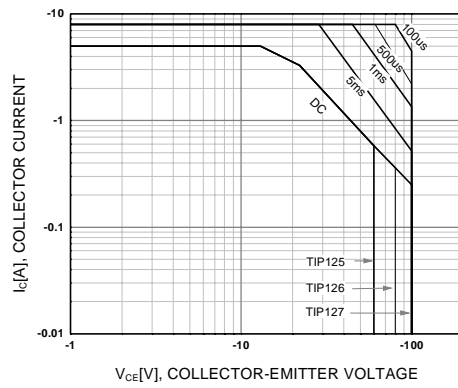


Figure 4. Safe Operating Area

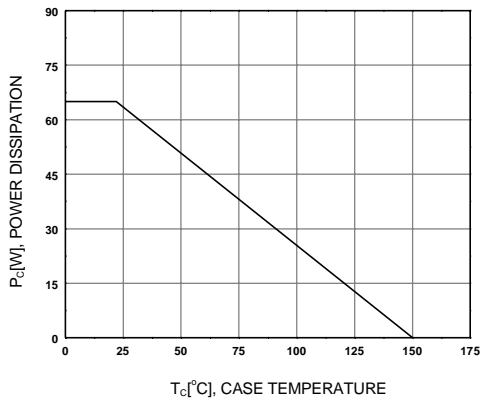
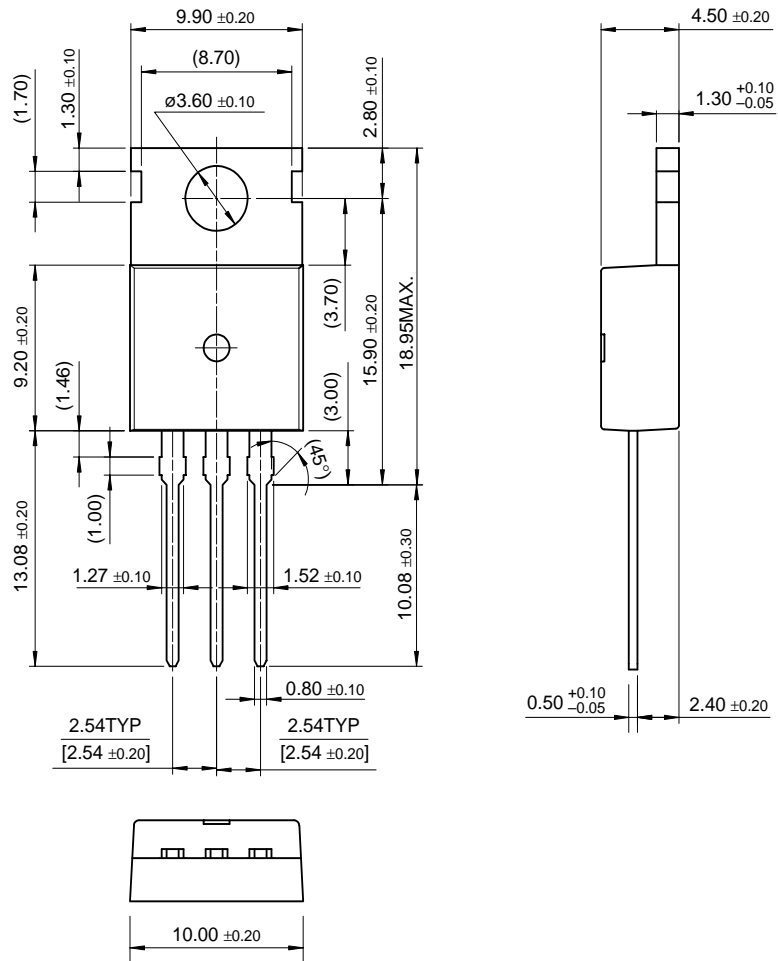


Figure 5. Power Derating

# Package Dimensions

## TO-220

TIP125/126/127



Dimensions in Millimeters

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