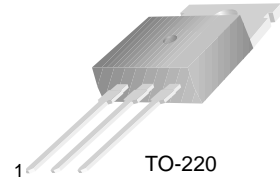


## TIP105/106/107

### Monolithic Construction With Built In Base-Emitter Shunt Resistors

- High DC Current Gain :  $h_{FE}=1000$  @  $V_{CE}=-4V$ ,  $I_C=-3A$  (Min.)
- Collector-Emitter Sustaining Voltage
- Low Collector-Emitter Saturation Voltage
- Industrial Use
- Complementary to TIP100/101/102

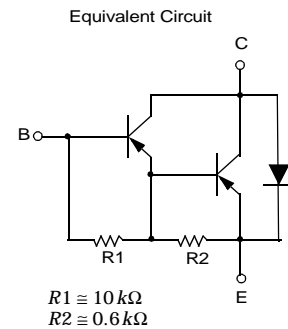


TO-220  
1.Base 2.Collector 3.Emmitter

### PNP Epitaxial Silicon Darlington Transistor

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

Symbol	Parameter	Value	Units	
$V_{CBO}$	Collector-Base Voltage	: TIP105	- 60	V
		: TIP106	- 80	V
		: TIP107	- 100	V
$V_{CEO}$	Collector-Emitter Voltage	: TIP105	- 60	V
		: TIP106	- 80	V
		: TIP107	- 100	V
$V_{EBO}$	Emitter-Base Voltage	- 5	V	
$I_C$	Collector Current (DC)	- 8	A	
$I_{CP}$	Collector Current (Pulse)	- 15	A	
$I_B$	Base Current (DC)	- 1	A	
$P_C$	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	2	W	
	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	80	W	
$T_J$	Junction Temperature	150	$^\circ\text{C}$	
$T_{STG}$	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$	



#### 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	$I_C = -30\text{mA}$ , $I_B = 0$	: TIP105	-60	V
			: TIP106	-80	V
			: TIP107	-100	V
$I_{CEO}$	Collector Cut-off Current	$V_{CE} = -30\text{V}$ , $I_B = 0$ $V_{CE} = -40\text{V}$ , $I_B = 0$ $V_{CE} = -50\text{V}$ , $I_B = 0$		-50	$\mu\text{A}$
				-50	$\mu\text{A}$
				-50	$\mu\text{A}$
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -60\text{V}$ , $I_E = 0$ $V_{CB} = -80\text{V}$ , $I_E = 0$ $V_{CB} = -100\text{V}$ , $I_E = 0$		-50	$\mu\text{A}$
				-50	$\mu\text{A}$
				-50	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{BE} = -5\text{V}$ , $I_C = 0$		-2	mA
$h_{FE}$	DC Current Gain	$V_{CE} = -4\text{V}$ , $I_C = -3\text{A}$ $V_{CE} = -4\text{V}$ , $I_C = -8\text{A}$	1000 200	20000	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -3\text{A}$ , $I_B = -6\text{mA}$ $I_C = -8\text{A}$ , $I_B = -80\text{mA}$		-2	V
				-2.5	V
$V_{BE(on)}$	Base-Emitter ON Voltage	$V_{CE} = -4\text{V}$ , $I_C = -8\text{A}$		-2.8	V
$C_{ob}$	Output Capacitance	$V_{CB} = -10\text{V}$ , $I_E = 0$ , $f = 0.1\text{MHz}$		300	pF

# Typical Characteristics

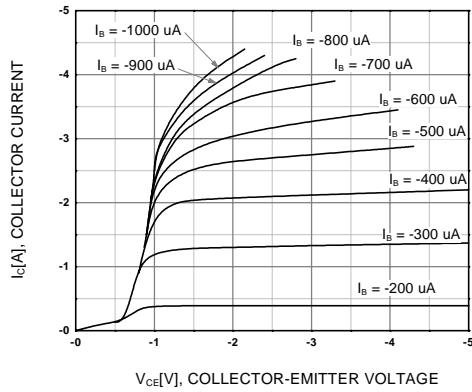


Figure 1. Static Characteristic

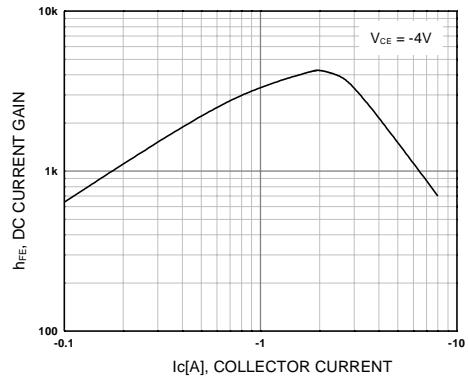


Figure 2. DC current Gain

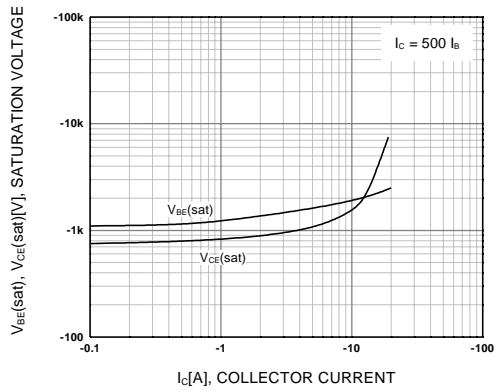


Figure 3. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

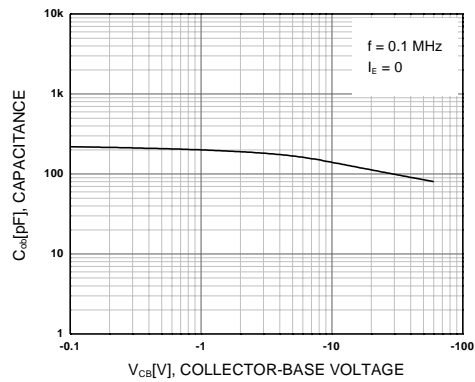


Figure 4. Collector Output Capacitance

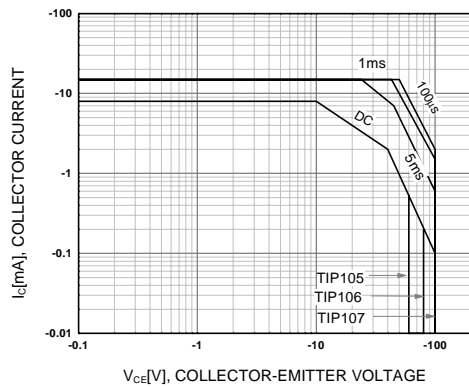


Figure 5. Safe Operating Area

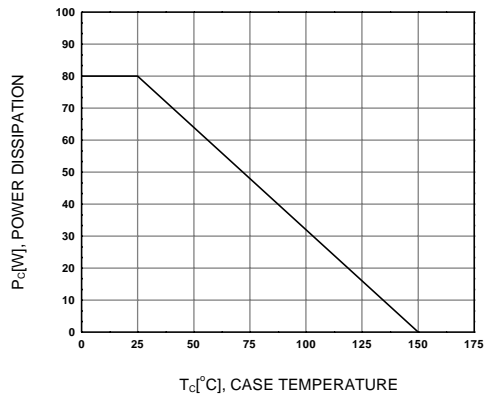
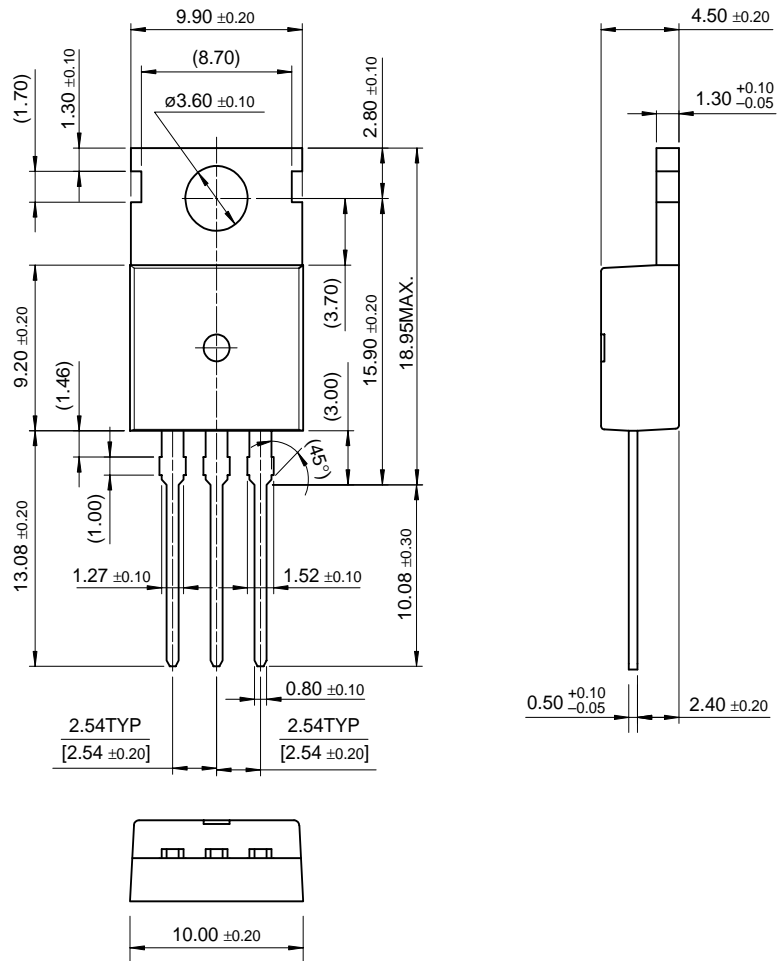


Figure 6. Power Derating

# Package Dimensions

## TO-220

TIP105/106/107



Dimensions in Millimeters

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