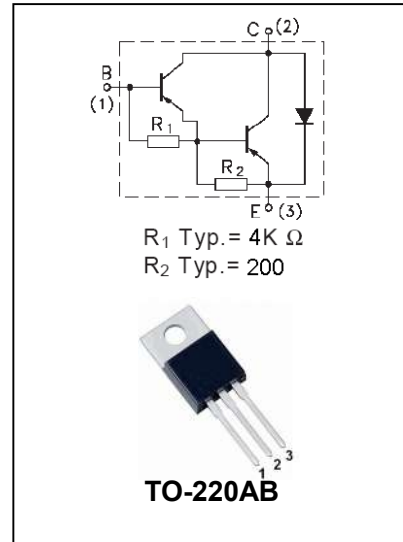


# PNP Epitaxial Silicon Darlington Transistor

# TIP117

## FEATURES

- Monolithic Construction With Built in Base -Emitter Shunt Resistors.
- Complementary to TIP112.
- High DC Current Gain: $h_{FE}=1000@V_{CE}=-4V,I_C=-1A$ .
- Low Collector-Emitter Saturation Voltage.
- Industrial Use.



## MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	-100	V
$V_{CEO}$	Collector-Emitter Voltage	-100	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	DC Pulse	A
		-2 -4	
$I_B$	Base Current	-50	mA
$P_C$	Collector Dissipation	$T_a=25^{\circ}C$ $T_c=25^{\circ}C$	W
		2 50	
$T_j, T_{stg}$	Junction and Storage Temperature	-65 to +150	$^{\circ}C$

## PNP Epitaxial Silicon Darlington Transistor

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### ELECTRICAL CHARACTERISTICS Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-emitter Sustaining Voltage	$V_{CEO(SUS)}$	$I_C=-30mA, I_B=0$	-100			V
Collector Cut-off Current	$I_{CEO}$	$V_{CE}=-50V, I_B=0$			-2	mA
Collector Cut-off Current	$I_{CBO}$	$V_{CE}=-100V, V_{EB}=0$			-1	mA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=-5V, I_C=0$			-2	mA
DC Current Gain	$h_{FE}$	$V_{CE}=-4V, I_C=-1A$ $V_{CE}=-4V, I_C=-2A$	1000 500			
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-2A, I_B=-8mA$			-2.5	V
Base-emitter on Voltage	$V_{BE(on)}$	$V_{CE}=-4V, I_C=-2A$			-2.8	V
Output Capacitance	$C_{ob}$	$V_{CB}=-10V, I_E=0,$ $f=0.1MHz$			200	pF

**PNP Epitaxial Silicon Darlington Transistor**

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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

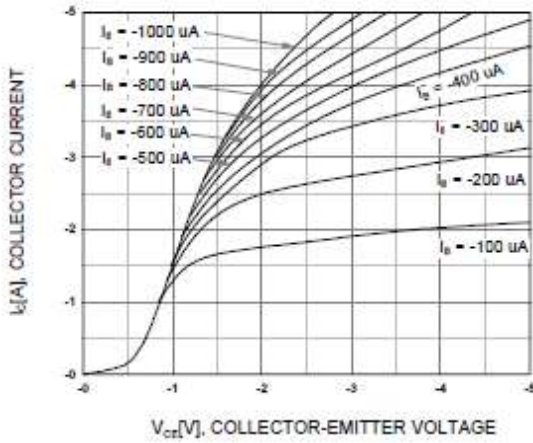


Figure 1. Static Characteristic

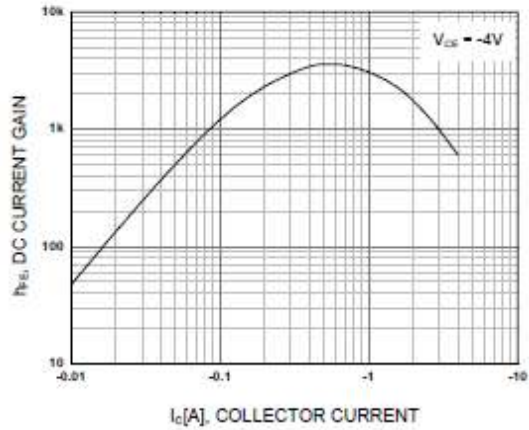


Figure 2. DC current Gain

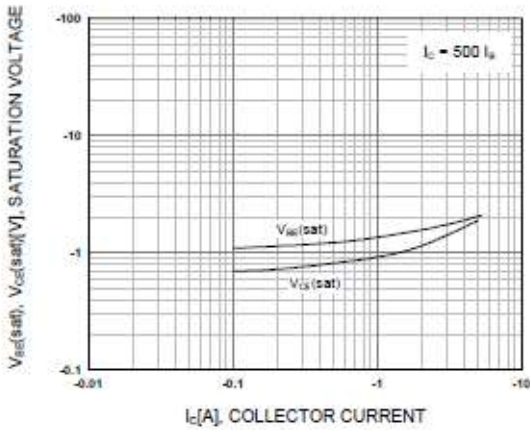


Figure 3. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

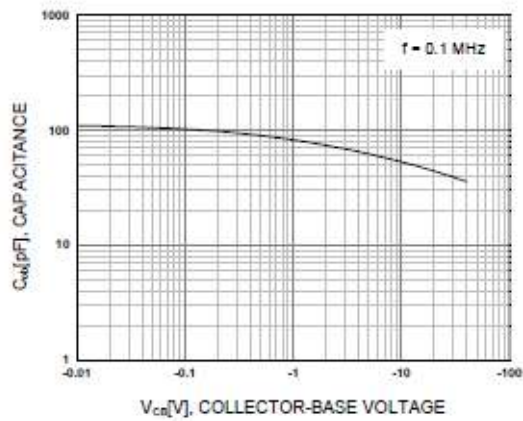


Figure 4. Collector Output Capacitance

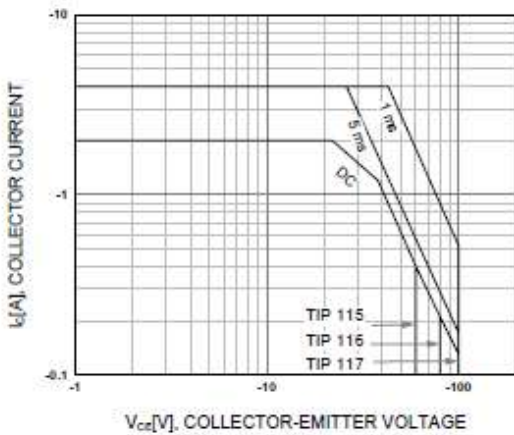


Figure 5. Safe Operating Area

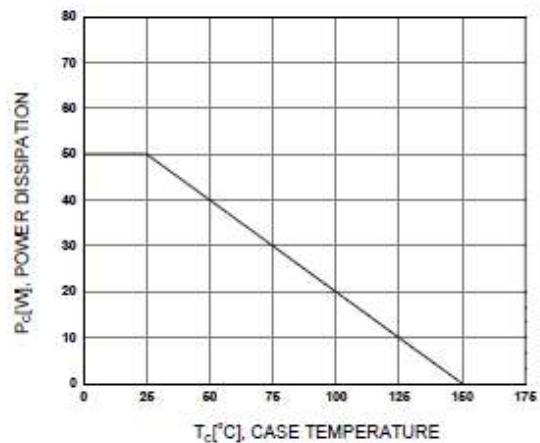


Figure 6. Power Derating

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## PACKAGE OUTLINE

Plastic surface mounted package

TO-220AB

