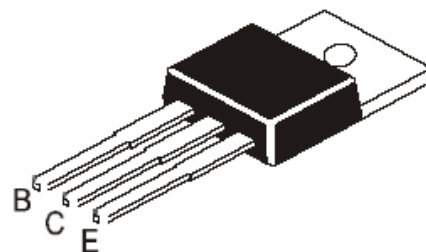


Darlington Power Transistors (PNP)

Features

- Designed for general-purpose amplifier and low speed switching applications
- RoHS Compliant



TO-220



Mechanical Data

Case:	TO-220, Plastic Package
Terminals:	Solderable per MIL-STD-202, Method 208
Weight:	0.08 ounces, 2.24 grams

Maximum Ratings ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	TIP105	TIP106	TIP107	Unit
V_{CB0}	Collector-Base Voltage	60	80	100	V
V_{CEO}	Collector-Emitter Voltage	60	80	100	V
V_{EB0}	Emitter-Base Voltage	5.0			V
I_C	Collector Current Continuous	8.0			A
I_{CM}	Collector Current Peak	15			A
I_B	Base Current	1.0			A
P_D	Power Dissipation upto $T_C=25^{\circ}C$	80			W
	Power Dissipation upto $T_A=25^{\circ}C$	2.0			W
	Power Dissipation Derate above $T_A=25^{\circ}C$	16			mW/ $^{\circ}C$
R_{θJA}	Thermal Resistance from Junction to Ambient in Free Air	62.5			$^{\circ}C/W$
R_{θJC}	Thermal Resistance from Junction to Case	1.56			$^{\circ}C/W$
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-65 to +150			$^{\circ}C$

Darlington Power Transistors (PNP)

TIP105/106/107

Electrical Characteristics ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	Min.	Max.	Unit	Conditions	
*hFE	D.C. Current Gain	1000	20000		$V_{CE}=4V, I_C=3A$	
		200	-		$V_{CE}=4V, I_C=8A$	
*V_{CEO(sus)}	Collector-Emitter Sustaining Voltage	TIP105	60	-	V	$I_C=30mA, I_B=0$
		TIP106	80	-	V	
		TIP107	100	-	V	
*V_{CE(sat)}	Collector-Emitter Saturation Voltage	-	2.0	V	$I_C=3A, I_B=6mA$	
		-	2.5	V	$I_C=8A, I_B=80mA$	
*V_{BE(on)}	Base-Emitter On Voltage	-	2.8	V	$I_C=8A, V_{CE}=4V$	
I_{CEO}	Collector-Emitter Cut-off Current	TIP105	-	50	μA	$V_{CE}=30V, I_B=0$
		TIP106	-	50		$V_{CE}=40V, I_B=0$
		TIP107	-	50		$V_{CE}=50V, I_B=0$
I_{CBO}	Collector-Base Cut-off Current	TIP105	-	50	μA	$V_{CB}=60V, I_E=0$
		TIP106	-	50		$V_{CB}=80V, I_E=0$
		TIP107	-	50		$V_{CB}=100V, I_E=0$
I_{EBO}	Emitter-Base Cut-off Current	-	8.0	mA	$V_{EB}=5V, I_C=0$	
*V_F	Forward Voltage of Commutation Diode	-	6.0	V	$I_F=I_C=10A, I_B=0$	

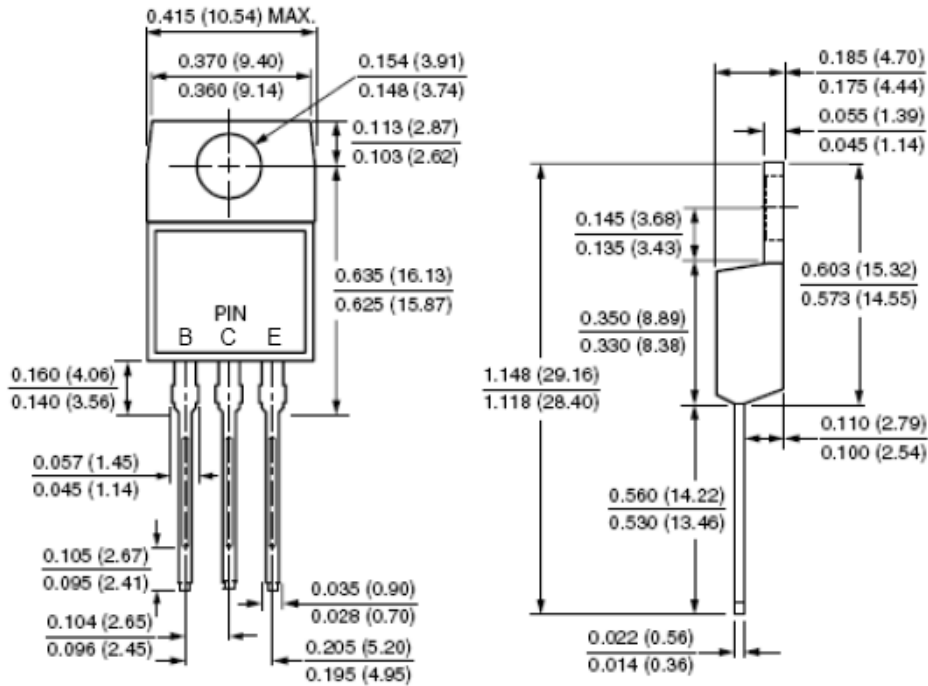
*Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Darlington Power Transistors (PNP)

TIP105/106/107

Dimensions in inch (mm)

TO-220



Pin Configuration

- B. Base
- C. Collector
- E. Emitter

Darlington Power Transistors (PNP)

TIP105/106/107

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