

## Silicon PNP Darlington Power Transistors

## TIP105/106/107

## DESCRIPTION

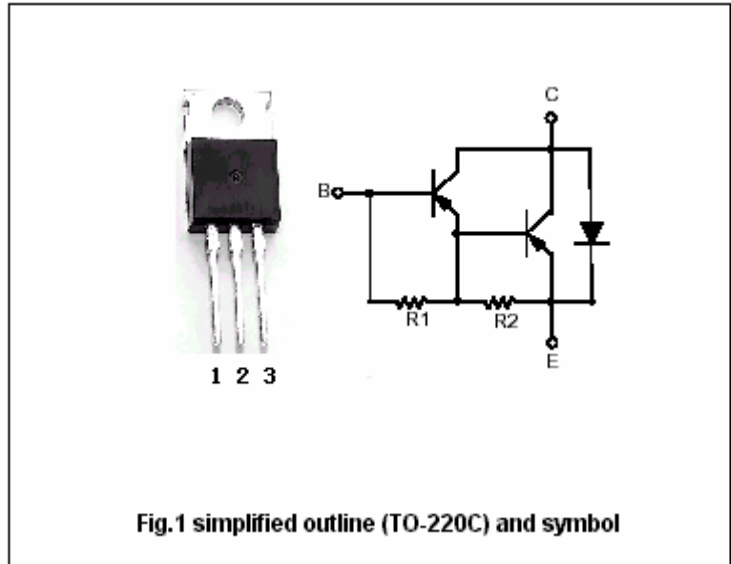
- With TO-220C package
- DARLINGTON
- High DC current gain
- Low collector saturation voltage
- Complement to type TIP100/101/102

## APPLICATIONS

- For industrial use

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

ABSOLUTE MAXIMUM RATINGS( $T_C=25^\circ\text{C}$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	TIP105	-60	V
		TIP106	-80	
		TIP107	-100	
$V_{CEO}$	Collector-emitter voltage	TIP105	-60	V
		TIP106	-80	
		TIP107	-100	
$V_{EBO}$	Emitter-base voltage	Open collector	-5	V
$I_C$	Collector current-DC		-8	A
$I_{CM}$	Collector current-peak		-15	A
$I_B$	Base current-DC		-1	A
$P_C$	Collector power dissipation	$T_C=25^\circ\text{C}$	80	W
		$T_a=25^\circ\text{C}$	2	
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-65~150	$^\circ\text{C}$

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## CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V <sub>CEQ(SUS)</sub>	Collector-emitter sustaining voltage	TIP105	-60			V	
		TIP106	-80				
		TIP107	-100				
V <sub>CE(sat)-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-3A, I <sub>B</sub> =-6mA			-2.0	V	
V <sub>CE(sat)-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-8A, I <sub>B</sub> =-80mA			-2.5	V	
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =-8A; V <sub>CE</sub> =-4V			-2.8	V	
I <sub>CBO</sub>	Collector cut-off current	TIP105	V <sub>CB</sub> =-60V, I <sub>E</sub> =0			-50	μA
		TIP106	V <sub>CB</sub> =-80V, I <sub>E</sub> =0				
		TIP107	V <sub>CB</sub> =-100V, I <sub>E</sub> =0				
I <sub>CEO</sub>	Collector cut-off current	TIP105	V <sub>CE</sub> =-30V, I <sub>B</sub> =0			-50	μA
		TIP106	V <sub>CE</sub> =-40V, I <sub>B</sub> =0				
		TIP107	V <sub>CE</sub> =-50V, I <sub>B</sub> =0				
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-5V; I <sub>C</sub> =0			-2	mA	
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-3A; V <sub>CE</sub> =-4V	1000		20000		
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-8A; V <sub>CE</sub> =-4V	200				
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0; V <sub>CB</sub> =-10V, f=0.1MHz			300	pF	

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PACKAGE OUTLINE

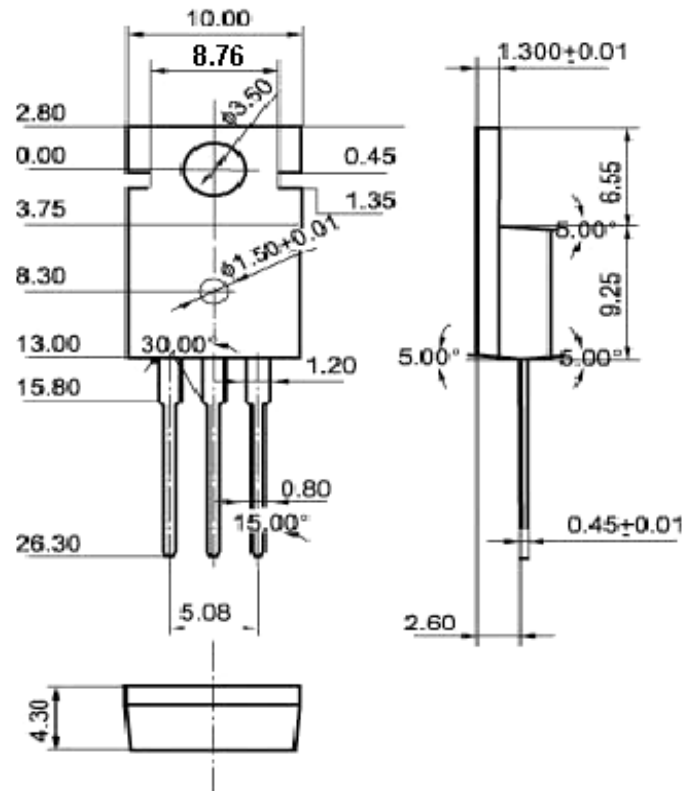


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.1$ mm)