

## Silicon PNP Darlington Power Transistors

## TIP125/126/127

## DESCRIPTION

- With TO-220C package
- DARLINGTON
- High DC current gain
- Low collector saturation voltage
- Complement to type TIP120/121/122

## APPLICATIONS

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

## PINNING

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

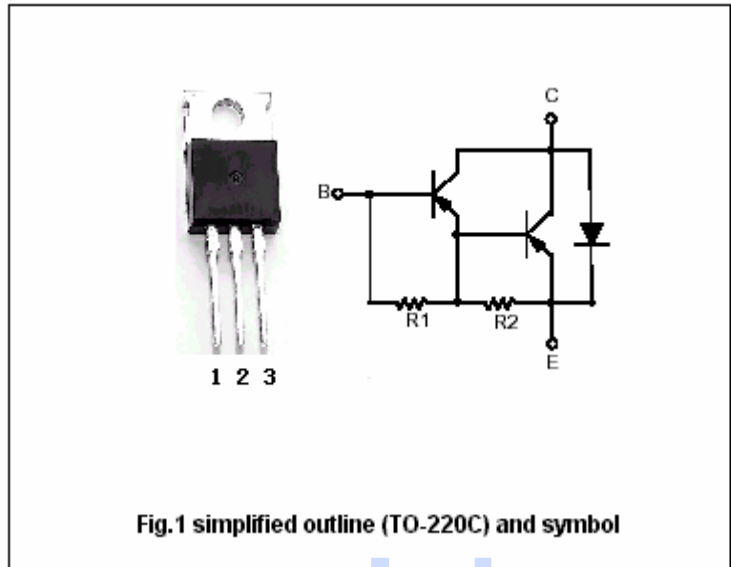


Fig.1 simplified outline (TO-220C) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	TIP125	-60	V
		TIP126	-80	
		TIP127	-100	
$V_{CEO}$	Collector-emitter voltage	TIP125	-60	V
		TIP126	-80	
		TIP127	-100	
$V_{EBO}$	Emitter-base voltage	Open collector	-5	V
$I_C$	Collector current-DC		-5	A
$I_{CM}$	Collector current-Pulse		-8	A
$I_B$	Base current-DC		-120	mA
$P_C$	Collector power dissipation	$T_c=25^\circ\text{C}$	65	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

T<sub>j</sub>=25 °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	TIP125	I <sub>C</sub> =-0.1A, I <sub>B</sub> =0	-60		V
		TIP126		-80		
		TIP127		-100		
V <sub>CE(sat)-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-3A, I <sub>B</sub> =-12mA			-2.0	V
V <sub>CE(sat)-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-5A, I <sub>B</sub> =-20mA			-4.0	V
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =-3.0A; V <sub>CE</sub> =-3V			-2.5	V
I <sub>CBO</sub>	Collector cut-off current	TIP125	V <sub>CB</sub> =-60V, I <sub>E</sub> =0		-0.2	mA
		TIP126		V <sub>CB</sub> =-80V, I <sub>E</sub> =0		
		TIP127		V <sub>CB</sub> =-100V, I <sub>E</sub> =0		
I <sub>CEO</sub>	Collector cut-off current	TIP125	V <sub>CE</sub> =-30V, I <sub>B</sub> =0		-0.5	mA
		TIP126		V <sub>CE</sub> =-40V, I <sub>B</sub> =0		
		TIP127		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> =-0.5A; V <sub>CE</sub> =-3V	1000			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-3.0A; V <sub>CE</sub> =-3V	1000			
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

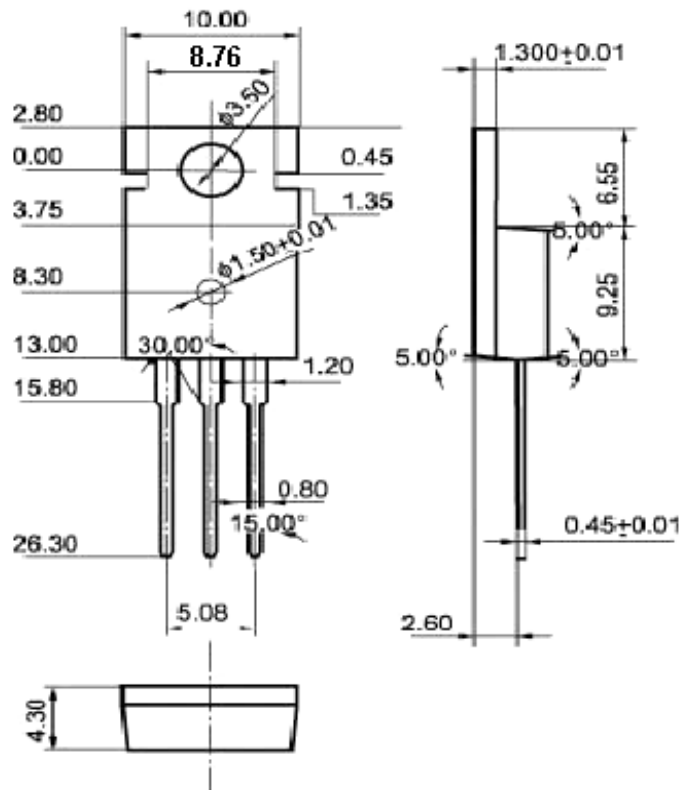


Fig.2 Outline dimensions

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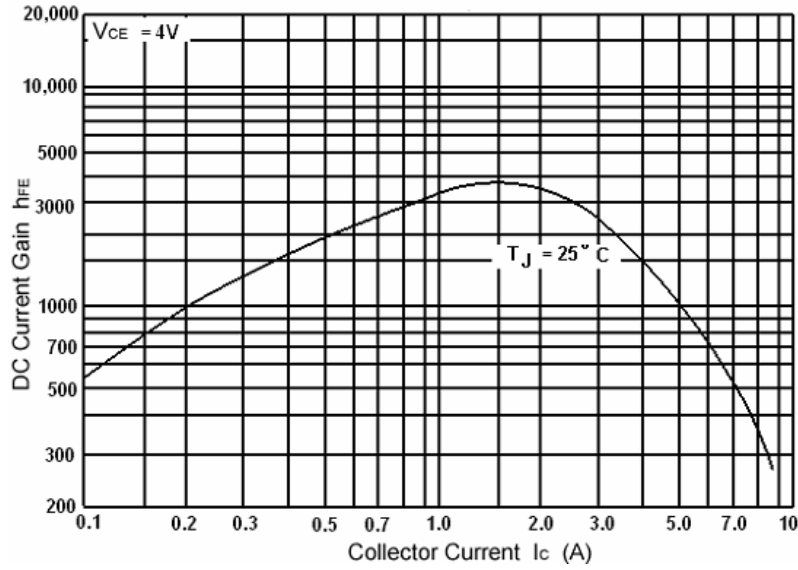


Fig.3 DC current Gain

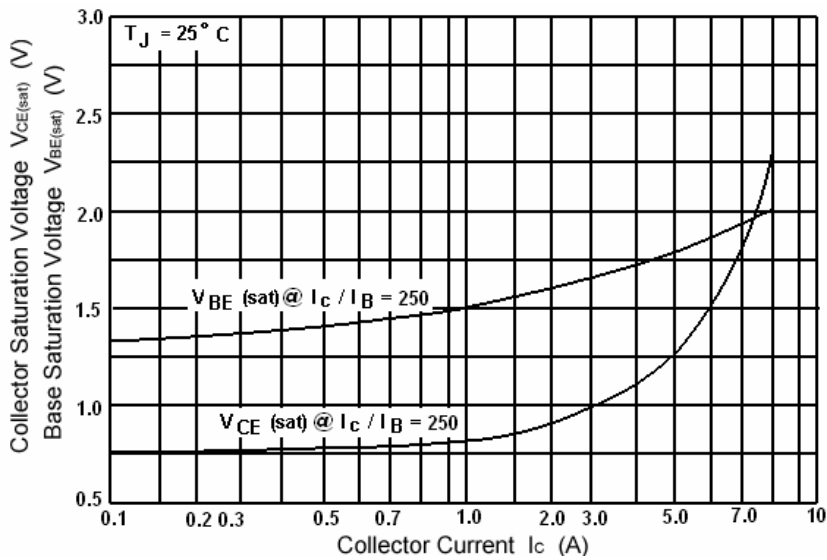


Fig.4 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

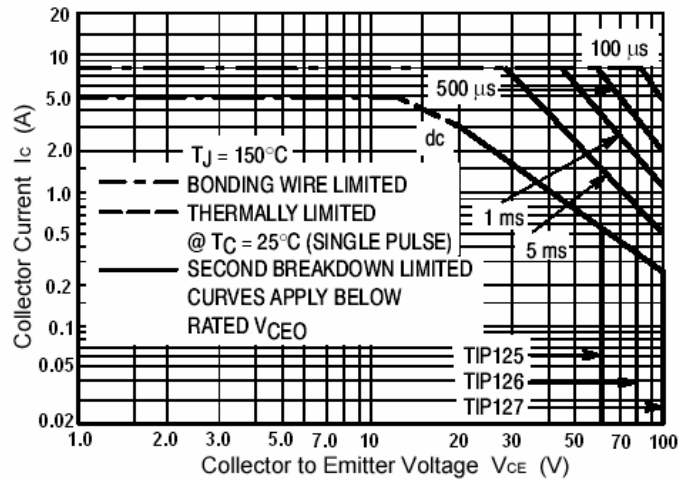


Fig.5 Safe Operating Area