Silicon NPN Darlington Power Transistors TIP120/121/122

DESCRIPTION

- With TO-220C package
- DARLINGTON
- High DC current gain
- Low collector saturation voltage
- Complement to type TIP125/126/127

APPLICATIONS

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

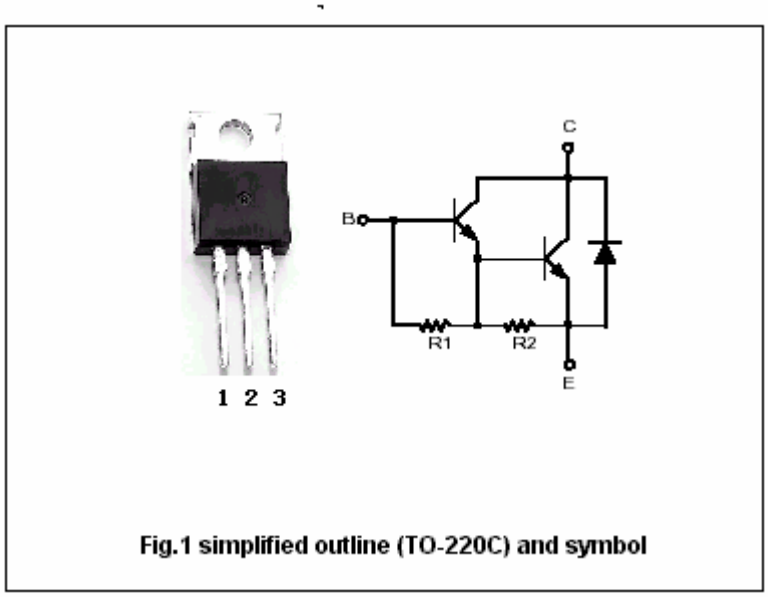

Fig.1 simplified outline (TO-220C) and symbol

PINNING

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

Absolute maximum ratings(Tc=25℃)

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	TIP120	Open emitter	60	V
		TIP121		80	
		TIP122		100	
V_{CEO}	Collector-emitter voltage	TIP120	Open base	60	V
		TIP121		80	
		TIP122		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℃	65	W
			T_a=25℃	2	
T_j	Junction temperature			150	℃
T_{stg}	Storage temperature			-65~150	℃

INCHANGE SEMICONDUCTOR

Silicon NPN Darlington Power Transistors TIP120/121/122

CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-emitter sustaining voltage	TIP120	I_C=0.1A, I_B=0	60			V
		TIP121		80			
		TIP122		100			
$V_{CEsat-1}$	Collector-emitter saturation voltage		I_C=3A ,I_B=12mA			2.0	V
$V_{CEsat-2}$	Collector-emitter saturation voltage		I_C=5A ,I_B=20mA			4.0	V
V_{BE}	Base-emitter on voltage		I_C=3.0A ; V_{CE}=3V			2.5	V
I_{CBO}	Collector cut-off current	TIP120	V_{CB}=60V, I_E=0			0.2	mA
		TIP121	V_{CB}=80V, I_E=0				
		TIP122	V_{CB}=100V, I_E=0				
I_{CEO}	Collector cut-off current	TIP120	V_{CE}=30V, I_B=0			0.5	mA
		TIP121	V_{CE}=40V, I_B=0				
		TIP122	V_{CE}=50V, I_B=0				
I_{EBO}	Emitter cut-off current		V_{EB}=5V; I_C=0			2	mA
h_{FE-1}	DC current gain		I_C=0.5A ; V_{CE}=3V	1000			
h_{FE-2}	DC current gain		I_C=3.0A ; V_{CE}=3V	1000			
C_{ob}	Output capacitance		I_E=0 ; V_{CB}=10V,f=0.1MHz			200	pF

国电半导体 INCHANGE SEMICONDUCTOR

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PACKAGE OUTLINE

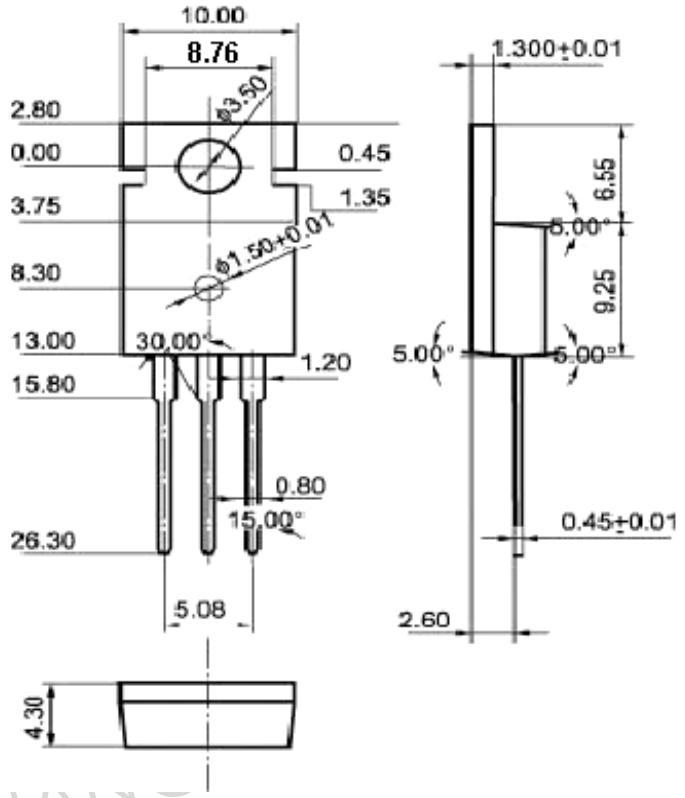

Fig.2 Outline dimensions

固电半 CTOR
INCHANGE

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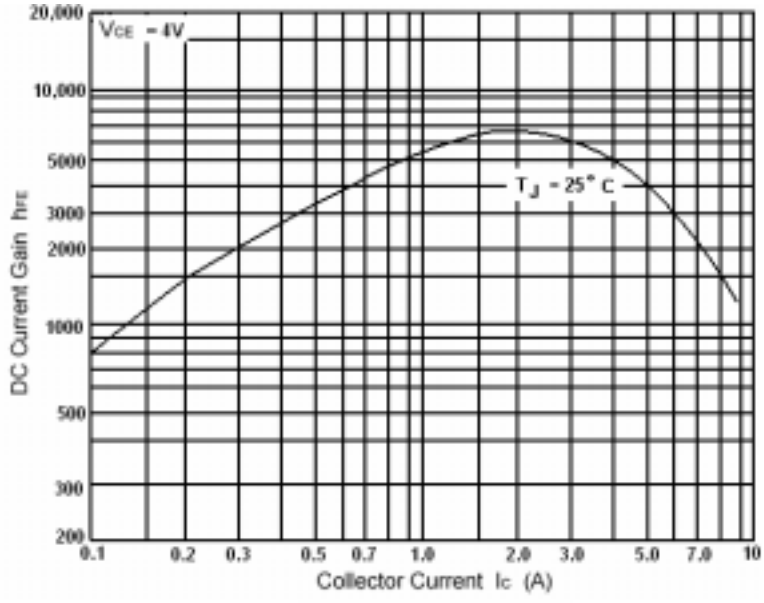

Fig.3 DC current Gain

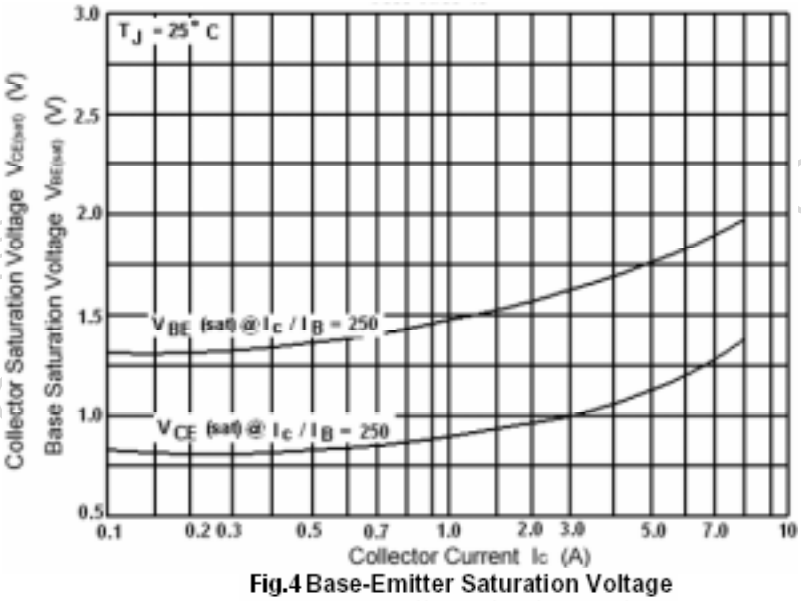

Fig.4 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

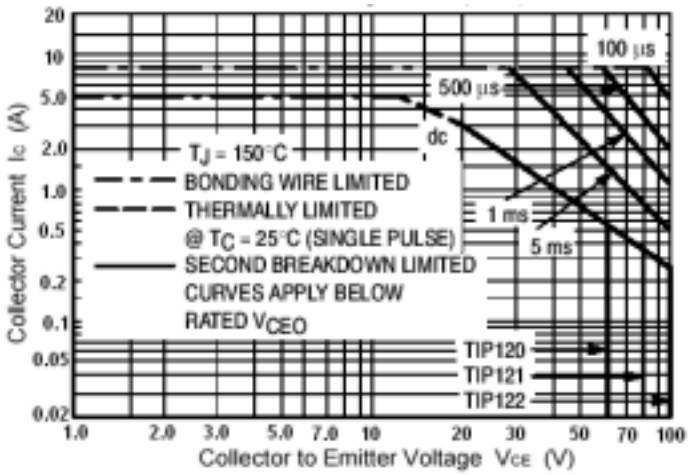

Fig.5 Safe Operating Area