

Silicon NPN Darlington Power Transistors

TIP110/111/112

DESCRIPTION

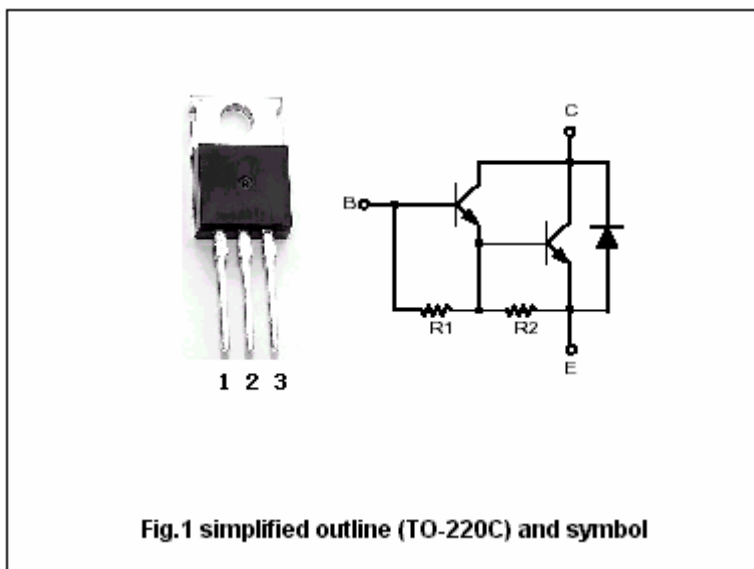
- With TO-220C package
- DARLINGTON
- High DC current gain
- Low collector saturation voltage
- Complement to type TIP115/116/117

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	TIP110	Open emitter	60	V
		TIP111		80	
		TIP112		100	
V_{CEO}	Collector-emitter voltage	TIP110	Open base	60	V
		TIP111		80	
		TIP112		100	
V_{EBO}	Emitter-base voltage		Open collector	5	V
I_C	Collector current-DC			2	A
I_{CM}	Collector current-Pulse			4	A
I_B	Base current-DC			50	mA
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$		50	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
$V_{CE(SUS)}$	Collector-emitter sustaining voltage	TIP110	$I_C=30mA, I_B=0$	60			V
		TIP111		80			
		TIP112		100			
$V_{CE(sat)}$	Collector-emitter saturation voltage		$I_C=2A, I_B=8mA$			2.5	V
V_{BE}	Base-emitter on voltage		$I_C=2A; V_{CE}=4V$			2.8	V
I_{CBO}	Collector cut-off current	TIP110	$V_{CB}=60V, I_E=0$			1	mA
		TIP111	$V_{CB}=80V, I_E=0$				
		TIP112	$V_{CB}=100V, I_E=0$				
I_{CEO}	Collector cut-off current	TIP110	$V_{CE}=30V, I_B=0$			2	mA
		TIP111	$V_{CE}=40V, I_B=0$				
		TIP112	$V_{CE}=50V, I_B=0$				
I_{EBO}	Emitter cut-off current		$V_{EB}=5V; I_C=0$			2	mA
h_{FE-1}	DC current gain		$I_C=1A; V_{CE}=4V$	1000			
h_{FE-2}	DC current gain		$I_C=2A; V_{CE}=4V$	500			
C_{OB}	Output capacitance		$I_E=0; V_{CB}=10V, f=0.1MHz$			100	pF

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PACKAGE OUTLINE

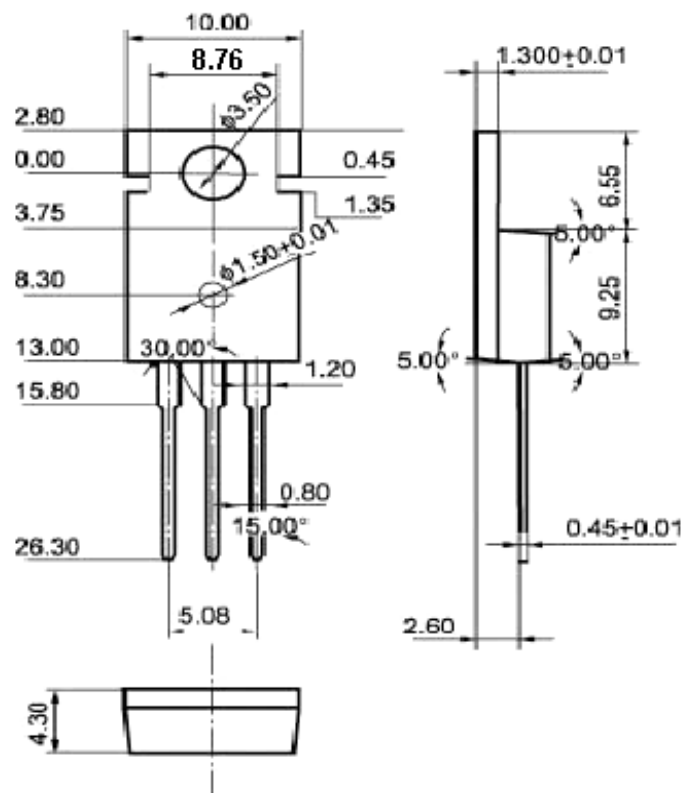


Fig.2 Outline dimensions

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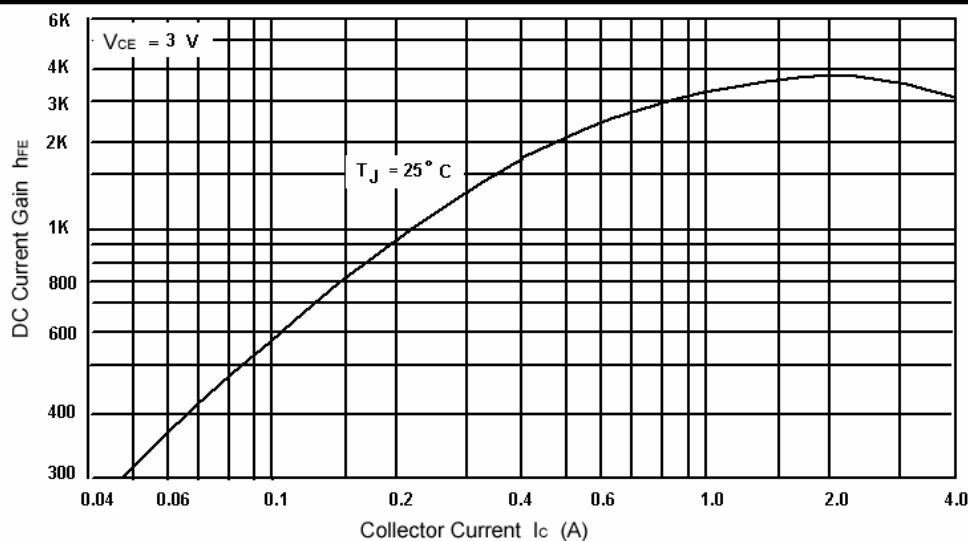


Fig.3 DC current Gain

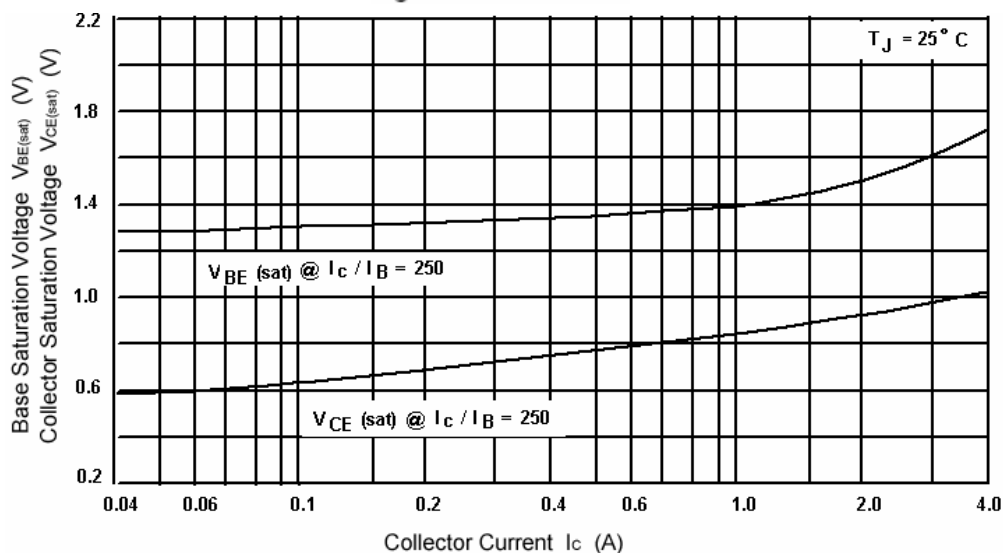
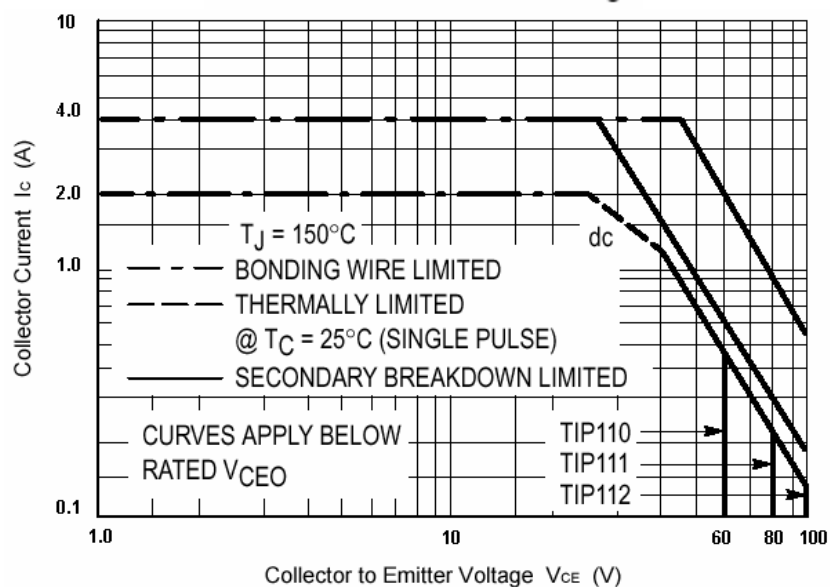
Fig.4 Base-Emitter Saturation Voltage
Collector-Emmitter Saturation Voltage

Fig.5 Safe Operating Area