

Silicon NPN Darlington Power Transistors

TIP110/111/112

DESCRIPTION

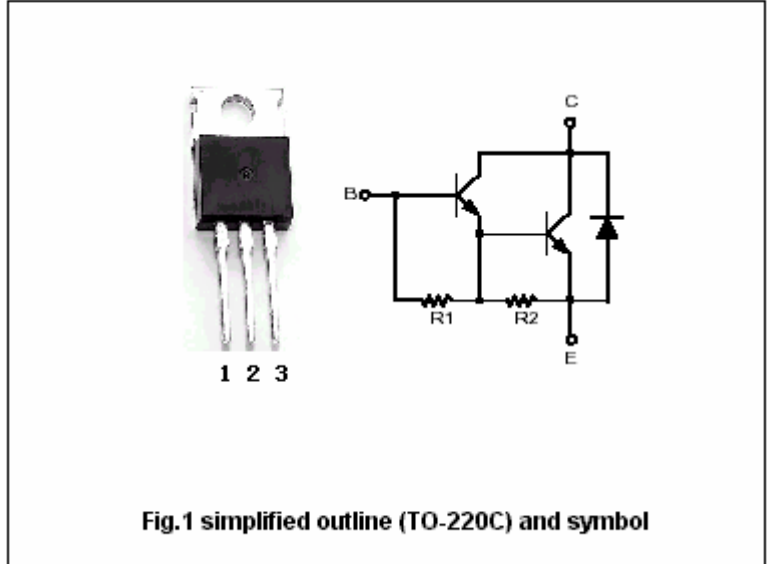
- With TO-220C package
- DARLINGTON
- High DC current gain
- Low collector saturation voltage
- Complement to type TIP115/116/117

APPLICATIONS

- For industrial use

PINNING

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



Absolute maximum ratings(Tc=25)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|--------------------|---------|------|
| V _{CBO} | Collector-base voltage | TIP110 | 60 | V |
| | | TIP111 | 80 | |
| | | TIP112 | 100 | |
| V _{CEO} | Collector-emitter voltage | TIP110 | 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 | 50 | W |
| | | T _a =25 | 2 | |
| T _j | Junction temperature | | 150 | |
| T _{stg} | Storage temperature | | -65~150 | |

Silicon NPN Darlington Power Transistors

TIP110/111/112

CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT | |
|-----------------------|--------------------------------------|--|---|------|-----|------|---|
| V _{CE0(SUS)} | Collector-emitter sustaining voltage | TIP110 | I _C =30mA, I _B =0 | 60 | | | V |
| | | TIP111 | | 80 | | | |
| | | TIP112 | | 100 | | | |
| V _{CEsat} | 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 | | | 1 | mA | |
| | | TIP111 | | | | | V _{CB} =60V, I _E =0 |
| | | TIP112 | | | | | V _{CB} =80V, I _E =0 |
| I _{CEO} | Collector cut-off current | TIP110 | | | 2 | mA | |
| | | TIP111 | | | | | V _{CE} =30V, I _B =0 |
| | | TIP112 | | | | | V _{CE} =40V, 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 | |

Silicon NPN Darlington Power Transistors

TIP110/111/112

PACKAGE OUTLINE

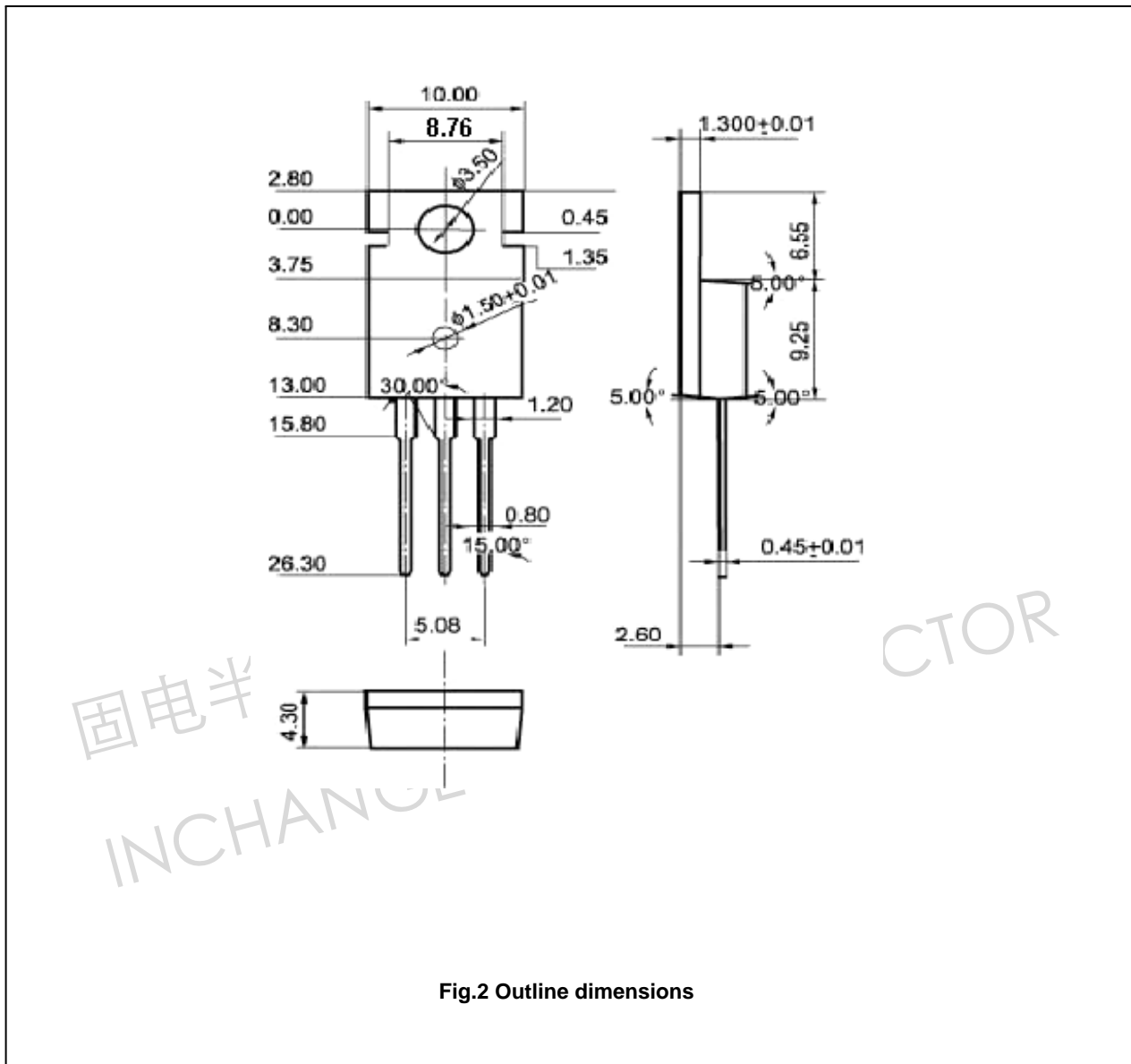


Fig.2 Outline dimensions

Silicon NPN Darlington Power Transistors

TIP110/111/112

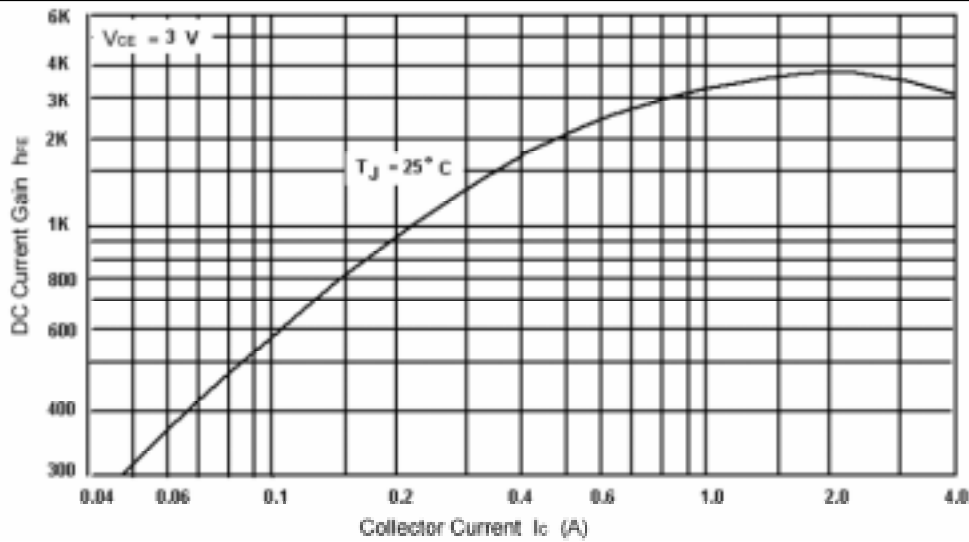


Fig.3 DC current Gain

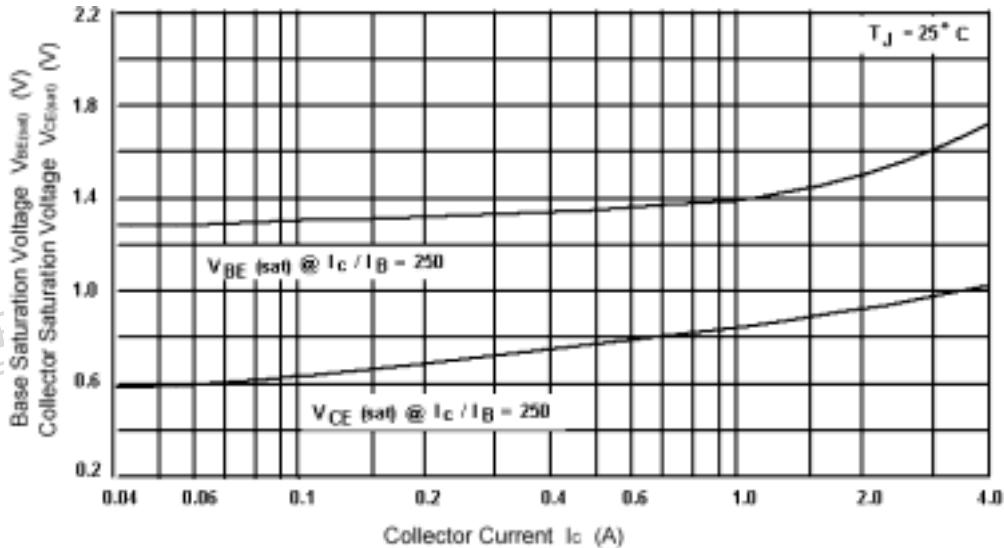


Fig.4 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

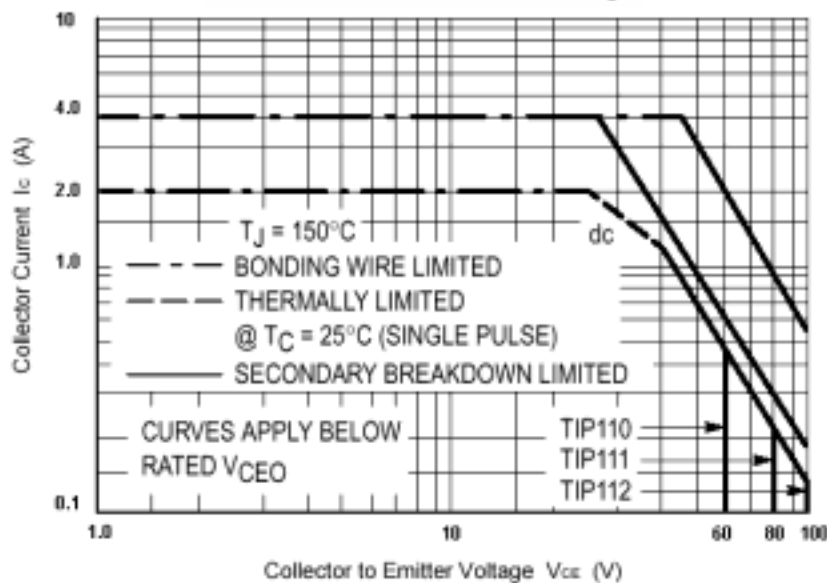


Fig.5 Safe Operating Area