

Silicon NPN Power Transistors

2N6043 2N6044 2N6045

DESCRIPTION

- With TO-220C package
- Complement to type 2N6040/6041/6042
- DARLINGTON
- High DC current gain
- Low collector saturation voltage
-

APPLICATIONS

- For general-purpose amplifier and low-speed switching applications

PINNING

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

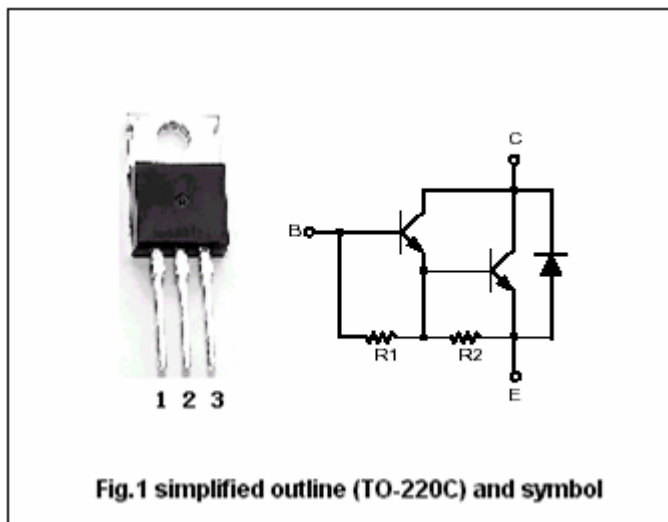


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings(Tc=25)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|---------------------------|--------------------|---------|------|
| V _{CBO} | Collector-base voltage | 2N6043 | 60 | V |
| | | 2N6044 | 80 | |
| | | 2N6045 | 100 | |
| V _{CEO} | Collector-emitter voltage | 2N6043 | 60 | V |
| | | 2N6044 | 80 | |
| | | 2N6045 | 100 | |
| V _{EBO} | Emitter-base voltage | Open collector | 5 | V |
| I _C | Collector current-DC | | 8 | A |
| I _{CM} | Collector current-Peak | | 16 | A |
| I _B | Base current-DC | | 120 | mA |
| P _D | Total power dissipation | T _c =25 | 75 | W |
| | | T _a =25 | 2.2 | |
| T _j | Junction temperature | | 150 | |
| T _{stg} | Storage temperature | | -65~150 | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | VALUE | UNIT |
|---------------------|-------------------------------------|-------|------|
| R _{th j-c} | Thermal resistance junction to case | 1.67 | /W |

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CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|-------------|--|------|------|-----------|------|
| V _{CE0(SUS)} | Collector-emitter sustaining voltage | 2N6043 | I _C =30mA, I _B =0 | 60 | | | V |
| | | 2N6044 | | 80 | | | |
| | | 2N6045 | | 100 | | | |
| V _{CEsat-1} | Collector-emitter saturation voltage | 2N6043/6044 | I _C =4A, I _B =16mA | | | 2.0 | V |
| | | 2N6045 | I _C =3A, I _B =12mA | | | | |
| V _{CEsat-2} | Collector-emitter saturation voltage | | I _C =8A, I _B =80mA | | | 4.0 | V |
| V _{BEsat} | Base-emitter saturation voltage | | I _C =8A, I _B =80mA | | | 4.5 | V |
| V _{BE} | Base-emitter on voltage | | I _C =4A; V _{CE} =4V | | | 2.8 | V |
| I _{CBO} | Collector cut-off current | | V _{CB} =Rated V _{CB} , I _E =0 | | | 20 | μA |
| I _{CEO} | Collector cut-off current | | V _{CE} =Rated V _{CE} , V _{BE} =-1.5V T _C =150 | | | 20 200 | μA |
| I _{CEO} | Collector cut-off current | | V _{CE} =Rated V _{CE} , I _B =0 | | | 20 | μA |
| I _{EBO} | Emitter cut-off current | | V _{EB} =5V; I _C =0 | | | 2.0 | mA |
| h _{FE-1} | DC current gain | 2N6043/6044 | I _C =4A; V _{CE} =4V | 1000 | | 20000 | |
| | | 2N6045 | I _C =3A; V _{CE} =4V | | | | |
| h _{FE-2} | DC current gain | | I _C =8A; V _{CE} =4V | 100 | | | |
| C _{ob} | Output capacitance | | I _E =0; V _{CB} =10V, f=0.1MHz | | | 200 | pF |

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PACKAGE OUTLINE

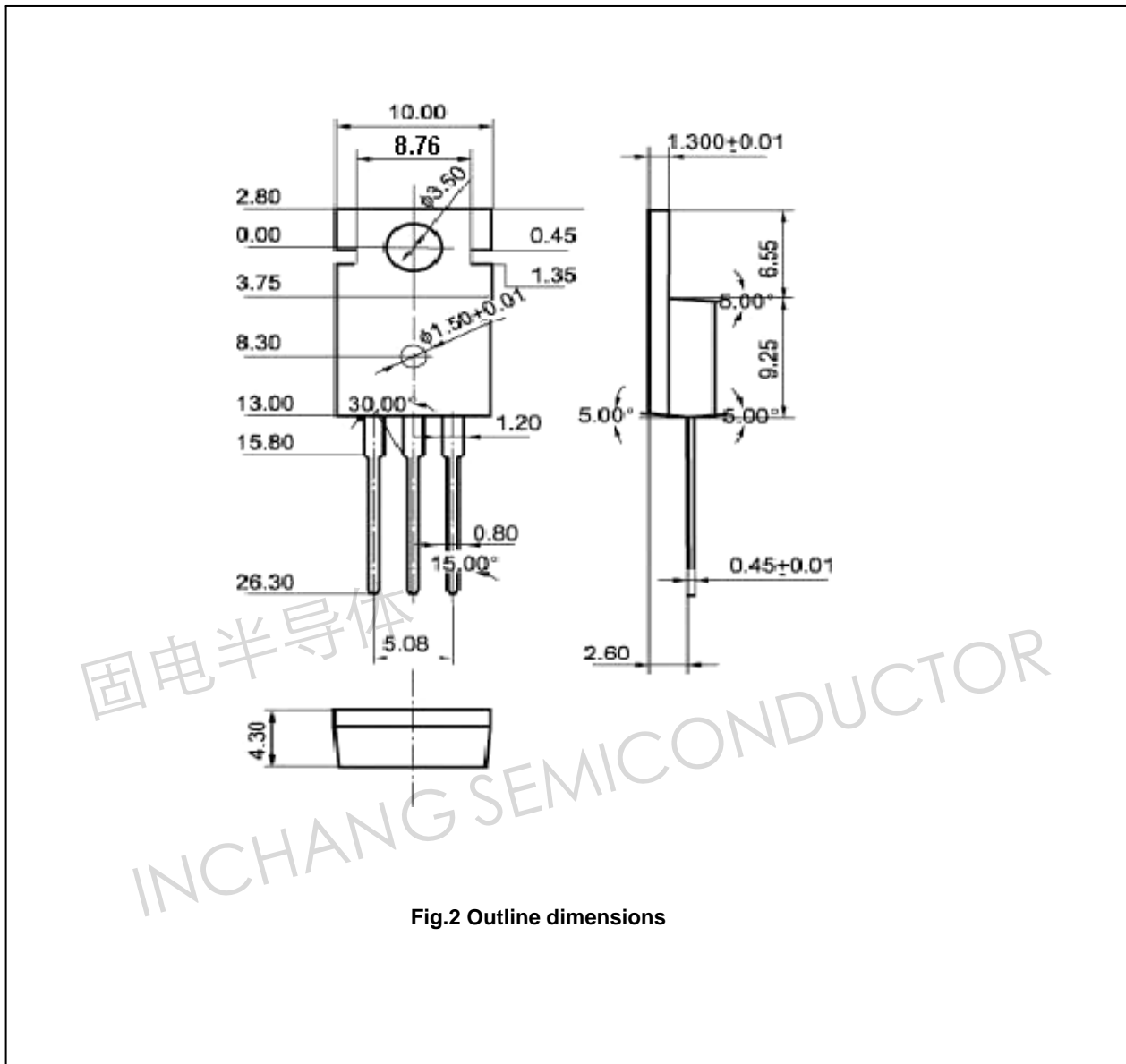


Fig.2 Outline dimensions