# Silicon NPN Power Transistors 2SC4381 2SC4382

## DESCRIPTION

·With TO-220F package
·Complement to type 2SA1667/1668

## APPLICATIONS

·For TV vertical output ,audio output driver and general purpose applications

**PINNING**

| PIN | DESCRIPTION |
|---|---|
| 1 | Base |
| 2 | Collector |
| 3 | Emitter |

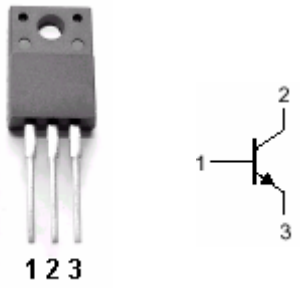


**Fig.1 simplified outline (TO-220F) and symbol**

## Absolute maximum ratings (Ta=25□)

| SYMBOL | PARAMETER | | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | 2SC4381 | Open emitter | 150 | V |
| | | 2SC4382 | | 200 | |
| $V_{CEO}$ | Collector-emitter voltage | 2SC4381 | Open base | 150 | V |
| | | 2SC4382 | | 200 | |
| $V_{EBO}$ | Emitter-base voltage | | Open collector | 6 | V |
| $I_C$ | Collector current | | | 2 | A |
| $I_B$ | Base current | | | 1 | A |
| $P_C$ | Collector dissipation | | $T_C$=25□ | 25 | W |
| $T_j$ | Junction temperature | | | 150 | □ |
| $T_{stg}$ | Storage temperature | | | -55~150 | □ |

## CHARACTERISTICS

**Tj=25□ unless otherwise specified**

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage | 2SC4381 | $I_C$=25mA ; $I_B$=0 | 150 | | | V |
| | | 2SC4382 | | 200 | | | |
| $V_{CEsat}$ | Collector-emitter saturation voltage | | $I_C$=0.7A;$I_B$=70mA | | | 1.0 | V |
| $I_{CBO}$ | Collector cut-off current | 2SC4381 | $V_{CB}$=150V;$I_E$=0 | | | 10 | μA |
| | | 2SC4382 | $V_{CB}$=200V;$I_E$=0 | | | 10 | μA |
| $I_{EBO}$ | Emitter cut-off current | | $V_{EB}$=6V; $I_C$=0 | | | 10 | μA |
| $h_{FE}$ | DC current gain | | $I_C$=0.7A ; $V_{CE}$=10V | 60 | | | |
| $f_T$ | Transition frequency | | $I_C$=0.2A ; $V_{CE}$=12V | | 15 | | MHz |
| $C_{OB}$ | Output capacitance | | $I_E$=0 ; $V_{CB}$=10V;f=1MHz | | 35 | | pF |

Switching time

| | | | | | | |
|---|---|---|---|---|---|---|
| $t_{on}$ | Turn-on time | $I_C$=1A ;$I_{B1}$=-$I_{B2}$=0.1A<br>$V_{CC}$=20V ,$R_L$=20Ω | | 1.0 | | μs |
| $t_s$ | Storage time | | | 3.0 | | μs |
| $t_f$ | Fall time | | | 1.5 | | μs |

**PACKAGE OUTLINE**

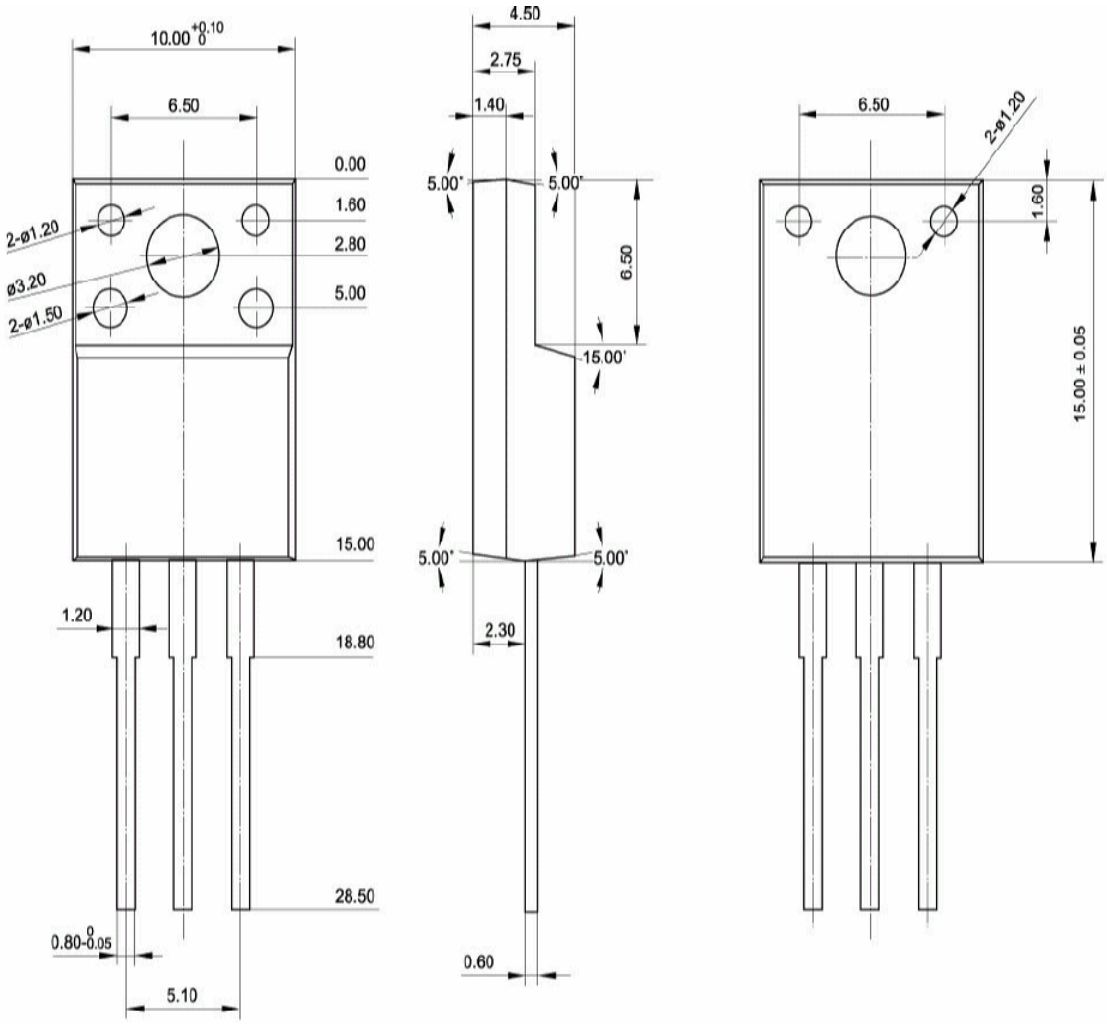


**Fig.2 Outline dimensions**

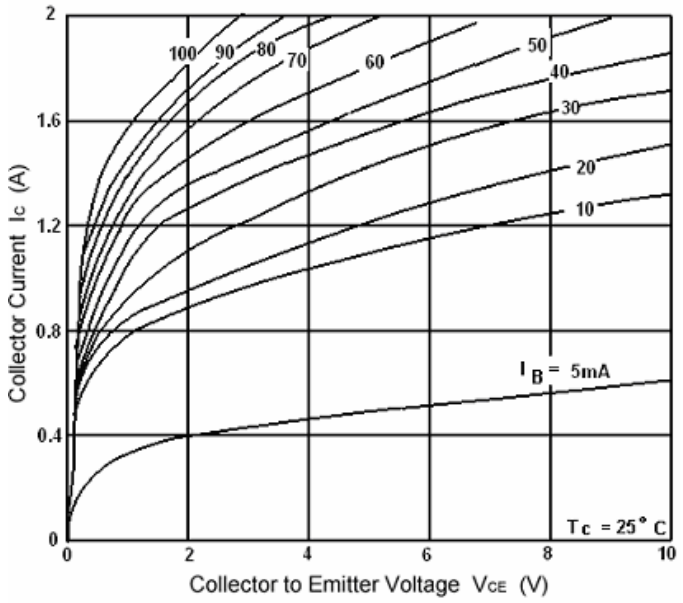


Fig.3 Static Characteristic

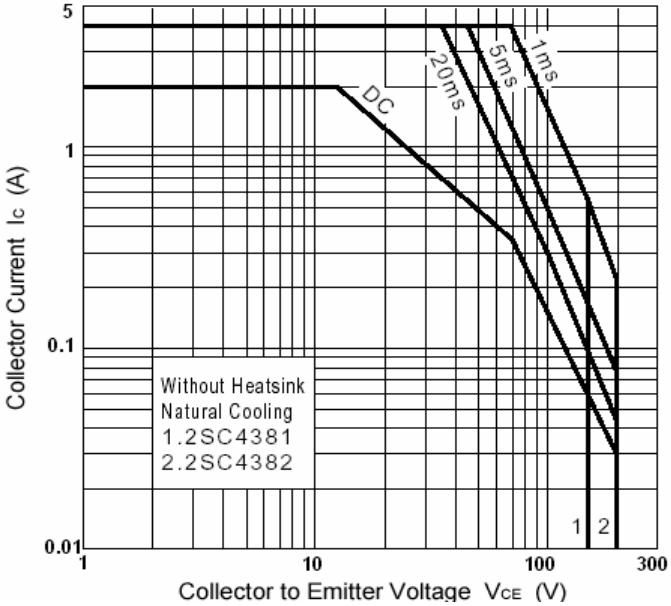


Fig.4 Safe Operating Area

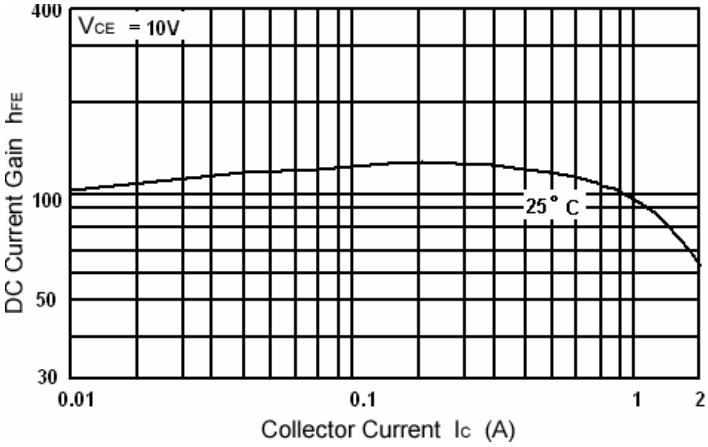


Fig.5 DC current Gain