

Inchange Semiconductor

Product Specification

Silicon NPN Power Transistors

2SC3746

DESCRIPTION

- With TO-220F package
- Complement to type 2SA1469
- Low saturation voltage
- Excellent current dependence of h_{FE}
- Short switching time

APPLICATIONS

- Various inductance of lamp drivers for electronic equipment
- Inverters ,converters
- Switching regulator ,driver

PINNING

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



Absolute maximum ratings (Ta=25)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|-----------|---------------------------|----------------|---------|------|
| V_{CBO} | Collector-base voltage | Open emitter | 80 | V |
| V_{CEO} | Collector-emitter voltage | Open base | 60 | V |
| V_{EBO} | Emitter-base voltage | Open collector | 5 | V |
| I_C | Collector current | | 5 | A |
| I_{CM} | Collector current-peak | | 7 | A |
| P_C | Collector dissipation | $T_a=25$ | 2 | W |
| | | $T_C=25$ | 20 | |
| T_j | Junction temperature | | 150 | |
| T_{stg} | Storage temperature | | -55~150 | |

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CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|---|-----|------|-----|------|
| V _{(BR)CEO} | Collector-emitter breakdown voltage | I _C =1mA ; R _{BE} = | 60 | | | V |
| V _{(BR)CBO} | Collector-base breakdown voltage | I _C =10mA ; I _E =0 | 80 | | | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =10mA ; I _C =0 | 5 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =2.5A ; I _B =0.125A | | | 0.4 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =40V ; I _E =0 | | | 0.1 | mA |
| I _{EBO} | Emitter cut-off current | V _{EB} =4V ; I _C =0 | | | 0.1 | mA |
| h _{FE} | DC current gain | I _C =1A ; V _{CE} =2V | 70 | | 280 | |
| f _T | Transition frequency | I _C =1A ; V _{CE} =5V | | 100 | | MHz |

Switching times

| | | | | | | |
|-----------------|--------------|---|--|-----|--|----|
| t _{on} | Turn-on time | I _C =2.0A ; I _{B1} =-I _{B2} =0.1A V _{CC} =20V , R _L =10 | | 0.1 | | μs |
| t _s | Storage time | | | 0.5 | | μs |
| t _f | Fall time | | | 0.1 | | μs |

◆ h_{FE} Classifications

| Q | R | S |
|--------|---------|---------|
| 70-140 | 100-200 | 140-280 |

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PACKAGE OUTLINE

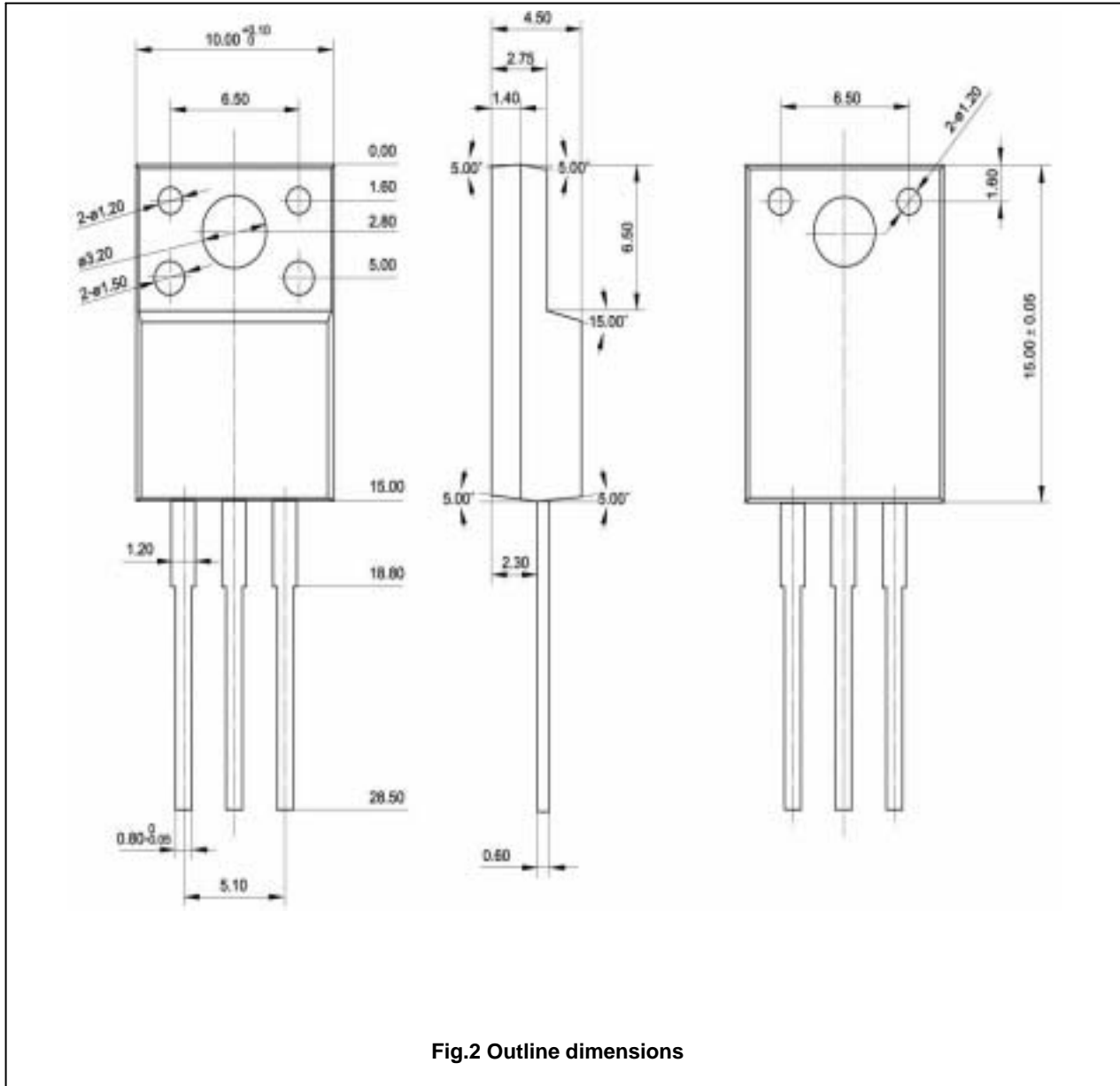


Fig.2 Outline dimensions

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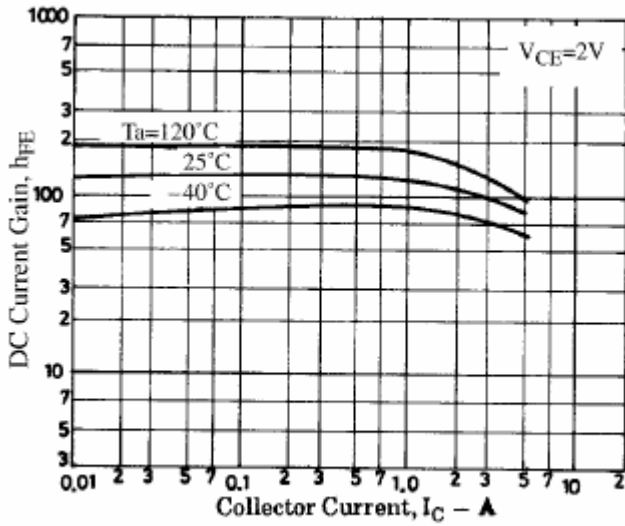


Fig.3 DC current Gain

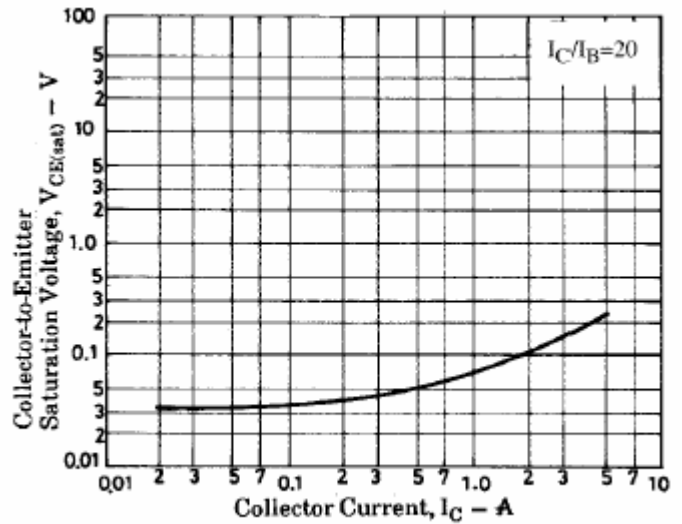


Fig.4 Collector-Emitter Saturation Voltage

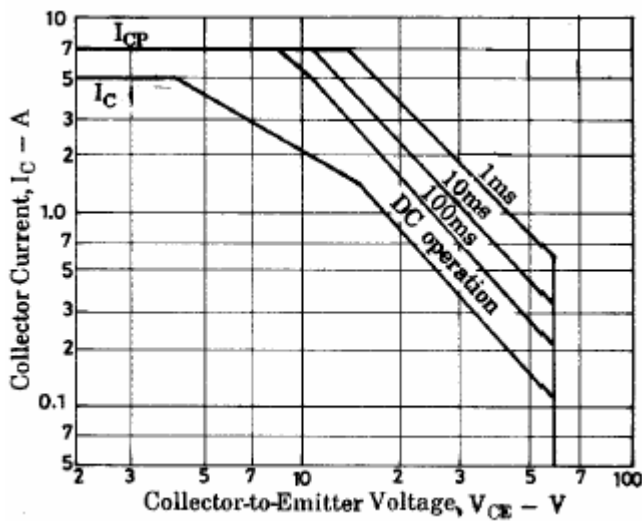


Fig.5 Safe Operating Area

WICONDUCTOR