# Silicon PNP Power Transistors 2SA1470

## DESCRIPTION

- With TO-220F package
- Complement to type 2SC3747
- Low saturation voltage
- Fast switching time

## APPLICATIONS

- Inductance,lamp drivers
- Inverters ,converters
- Power amplification
- High-speed switching

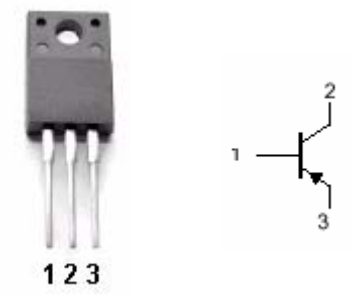



**Fig.1 simplified outline (TO-220F) and symbol**

**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 | | -7 | A |
| $I_{CM}$ | Collector current-peak | | -10 | A |
| $P_C$ | Collector power dissipation | $T_a$=25℃ | 2 | W |
| | | $T_C$=25℃ | 25 | |
| $T_j$ | Junction temperature | | 150 | ℃ |
| $T_{stg}$ | Storage temperature | | -55~150 | ℃ |

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## CHARACTERISTICS

**Tj=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 | $I_C$=-1mA ;$I_E$=0 | -80 | | | V |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage | $I_E$=-1mA ;$I_C$=0 | -5 | | | V |
| $V_{CEsat}$ | Collector-emitter saturation voltage | $I_C$=-3.5A $I_B$=-0.175A | | | -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 | $I_C$=-3.0A;$I_{B1}$=-$I_{B2}$=-0.15A $V_{CC}$=20V ,$R_L$=6.67Ω | | 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 |

**PACKAGE OUTLINE**

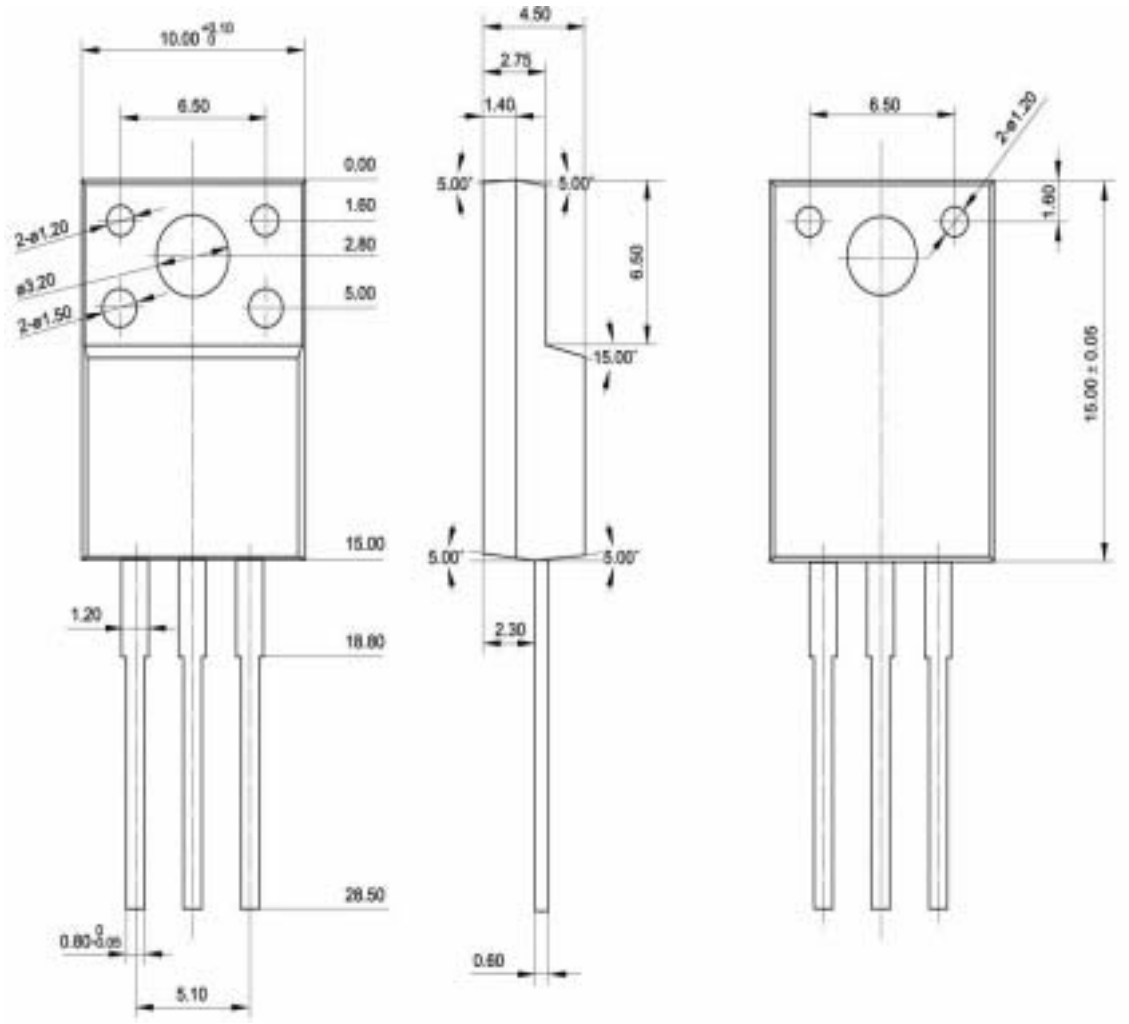



**Fig.2 Outline dimensions**

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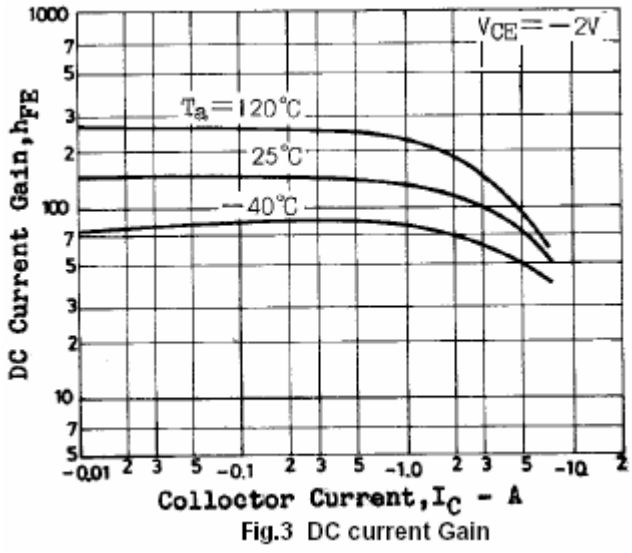


Fig.3 DC current Gain

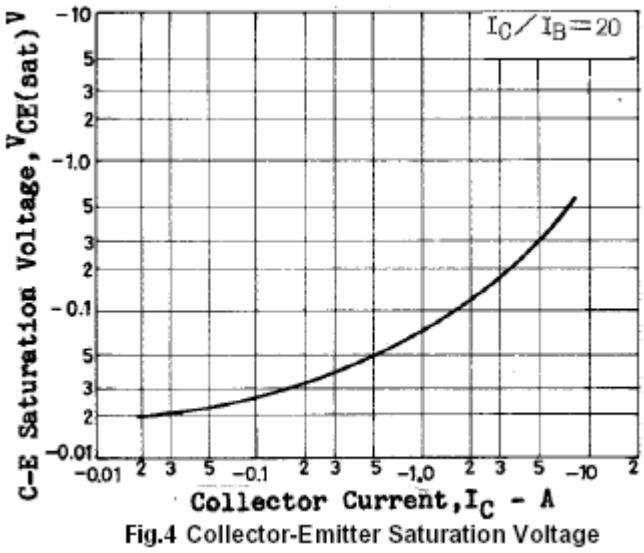


Fig.4 Collector-Emitter Saturation Voltage

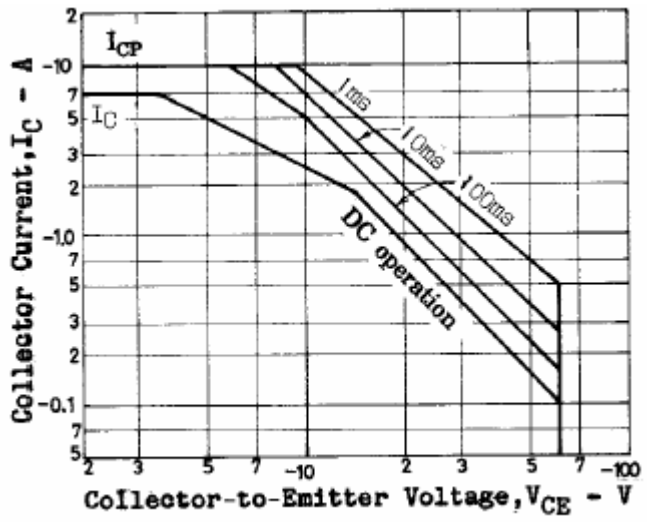


Fig.5 Safe Operating Area