



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

## TO-220F Plastic-Encapsulate Transistors

**3DD3852** TRANSISTOR (NPN)

### FEATURES

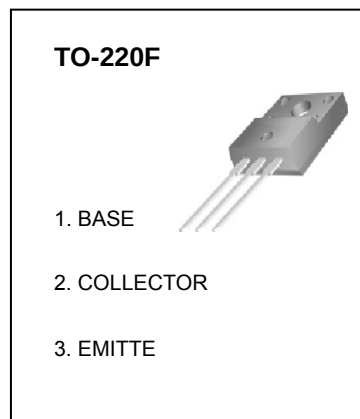
- High Current Gain
- Saturation Voltage Low
- Power dissipation

$P_{CW}$ : 2 W ( $T_{amb}=25^{\circ}C$ )

25 W ( $T_{case}=25^{\circ}C$ )

**MAXIMUM RATINGS** ( $T_A=25^{\circ}C$  unless otherwise noted)

| Symbol    | Parameter                     | Value   | Units       |
|-----------|-------------------------------|---------|-------------|
| $V_{CBO}$ | Collector-Base Voltage        | 80      | V           |
| $V_{CEO}$ | Collector-Emitter Voltage     | 60      | V           |
| $V_{EBO}$ | Emitter-Base Voltage          | 6       | V           |
| $I_C$     | Collector Current -Continuous | 3       | A           |
| $T_J$     | Junction Temperature          | 150     | $^{\circ}C$ |
| $T_{stg}$ | Storage Temperature           | -55-150 | $^{\circ}C$ |



### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}C$ unless otherwise specified)

| Parameter                            | Symbol          | Test conditions         | MIN | TYP | MAX | UNIT    |
|--------------------------------------|-----------------|-------------------------|-----|-----|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$   | $I_C=1mA, I_E=0$        | 80  |     |     | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$   | $I_C=10mA, I_B=0$       | 60  |     |     | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$   | $I_E=100\mu A, I_C=0$   | 6   |     |     | V       |
| Collector cut-off current            | $I_{CBO}$       | $V_{CB}=80V, I_E=0$     |     |     | 10  | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$       | $V_{EB}=6V, I_C=0$      |     |     | 10  | $\mu A$ |
| DC current gain                      | $h_{FE}^*$      | $V_{CE}=4V, I_C=500mA$  | 100 |     | 600 |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}^*$ | $I_C=3A, I_B=300mA$     |     |     | 1   | V       |
| Transition frequency                 | $f_T$           | $V_{CE}=12V, I_C=200mA$ | 7   |     |     | MHz     |

\*Pulse test:  $t_p \leq 300\mu s, \delta \leq 0.02$ .

### CLASSIFICATION OF $h_{FE}$

| Rank  | O       | P       | Q       |
|-------|---------|---------|---------|
| Range | 100-200 | 160-320 | 300-600 |

# Typical Characteristics

3DD3852

