



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

## TO-92 Plastic-Encapsulate Transistors

### S8050 TRANSISTOR (NPN)

#### FEATURES

Power dissipation

$P_{CM}$ : 0.625 W ( $T_{amb}=25^{\circ}C$ )

Collector current

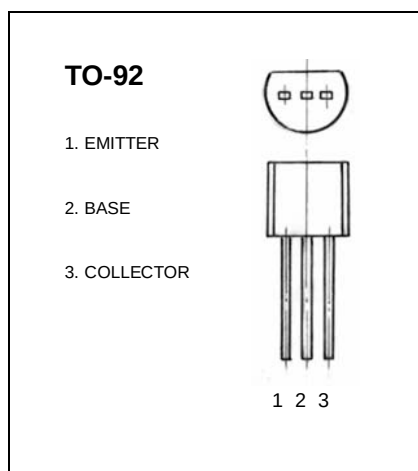
$I_{CM}$ : 0.5 A

Collector-base voltage

$V_{(BR)CBO}$ : 40 V

Operating and storage junction temperature range

$T_J, T_{stg}$ :  $-55^{\circ}C$  to  $+150^{\circ}C$



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

| Parameter                            | Symbol        | Test conditions                          | MIN | TYP | MAX | UNIT    |
|--------------------------------------|---------------|------------------------------------------|-----|-----|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = 100\mu A, I_E = 0$                | 40  |     |     | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = 0.1mA, I_B = 0$                   | 25  |     |     | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = 100\mu A, I_C = 0$                | 5   |     |     | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = 40V, I_E = 0$                  |     |     | 0.1 | $\mu A$ |
| Collector cut-off current            | $I_{CEO}$     | $V_{CE} = 20V, I_B = 0$                  |     |     | 0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = 5V, I_C = 0$                   |     |     | 0.1 | $\mu A$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE} = 1V, I_C = 50mA$                | 85  |     | 300 |         |
|                                      | $h_{FE(2)}$   | $V_{CE} = 1V, I_C = 500mA$               | 50  |     |     |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 500mA, I_B = 50mA$                |     |     | 0.6 | V       |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = 500mA, I_B = 50mA$                |     |     | 1.2 | V       |
| Transition frequency                 | $f_T$         | $V_{CE} = 6V, I_C = 20mA$<br>$f = 30MHz$ | 150 |     |     | MHz     |

#### CLASSIFICATION OF $h_{FE(1)}$

| Rank  | B      | C       | D       |
|-------|--------|---------|---------|
| Range | 85-160 | 120-200 | 160-300 |