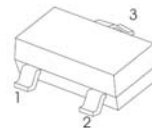


## FEATURES

- Complimentary to S8050
- Collector Current:  $I_C=0.5A$

## SOT-23



1.BASE  
2.EMITTER  
3.COLLECTOR

## Marking

| Type number | Marking code |
|-------------|--------------|
| S8550       | 2TY          |

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

| Parameter                                        | Symbol         | Value    | Unit        |
|--------------------------------------------------|----------------|----------|-------------|
| Collector–Base Voltage                           | $V_{CBO}$      | -40      | V           |
| Collector–Emitter Voltage                        | $V_{CEO}$      | -25      | V           |
| Emitter–Base Voltage                             | $V_{EBO}$      | -5       | V           |
| Collector Current — Continuous                   | $I_C$          | -0.5     | A           |
| Collector Dissipation                            | $P_C$          | 0.3      | W           |
| Operation Junction and Storage Temperature Range | $T_J, T_{stg}$ | -55~+150 | $^{\circ}C$ |

### CLASSIFICATION OF $h_{FE1}$

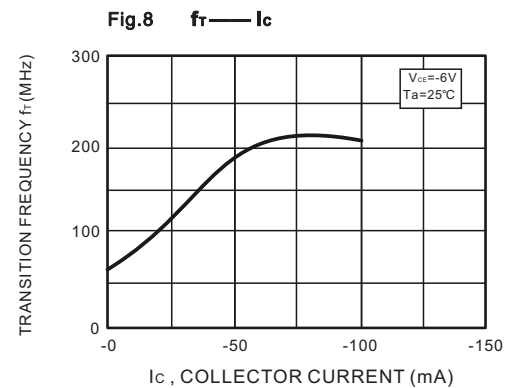
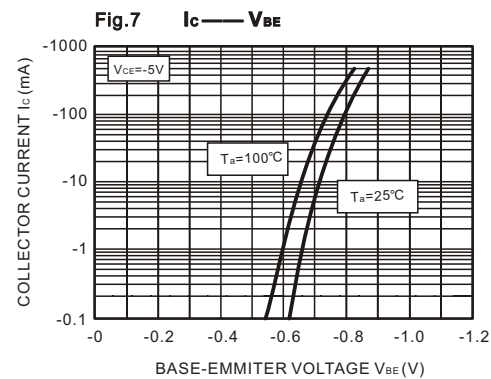
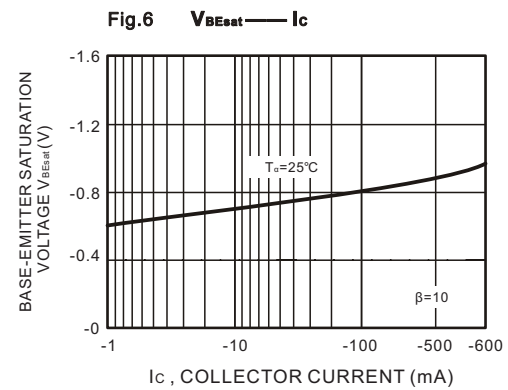
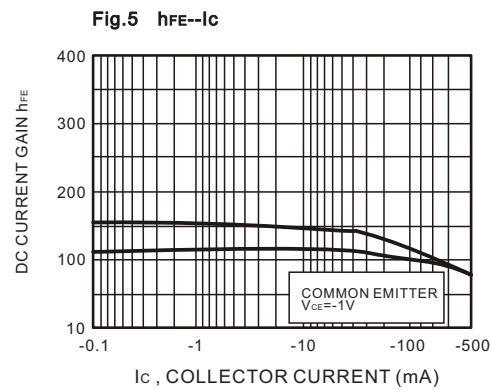
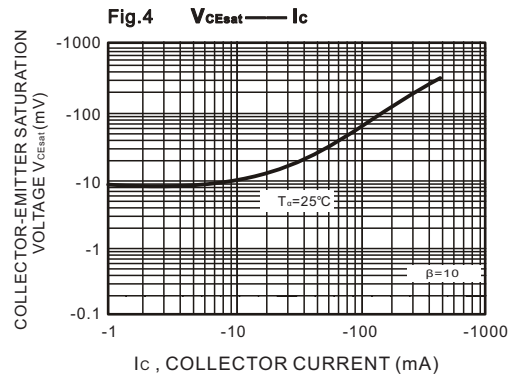
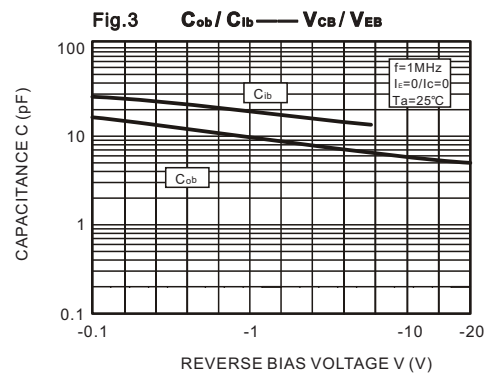
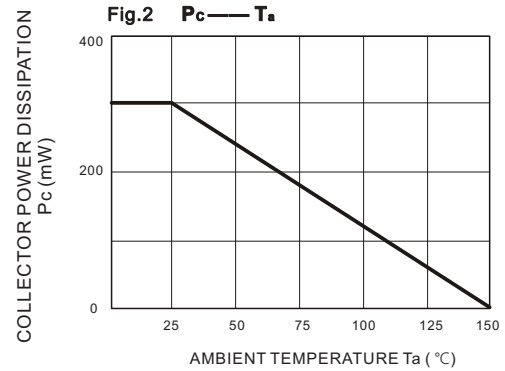
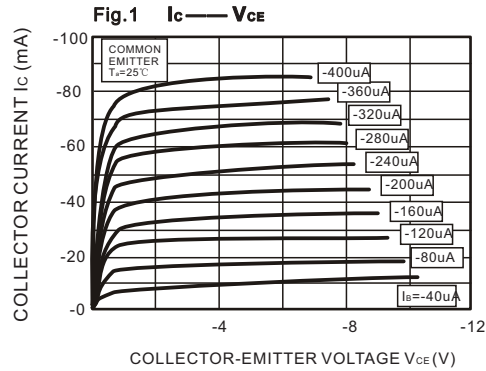
| Rank  | L       | H       | J       |
|-------|---------|---------|---------|
| Range | 120-200 | 200-350 | 300-400 |

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

| Parameter                            | Symbol        | Test conditions                        | Min | Max  | Unit    |
|--------------------------------------|---------------|----------------------------------------|-----|------|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = -100\mu A, I_E = 0$             | -40 |      | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = -1\text{ mA}, I_B = 0$          | -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              | $I_{EBO}$     | $V_{EB} = -3V, I_C = 0$                |     | -0.1 | $\mu A$ |
| DC current gain                      | $h_{FE1}$     | $V_{CE} = -1V, I_C = -50mA$            | 120 | 400  |         |
|                                      | $h_{FE2}$     | $V_{CE} = -1V, I_C = -500mA$           | 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                 | $f_T$         | $V_{CE} = -6V, I_C = -20mA, f = 30MHz$ | 150 |      | MHz     |

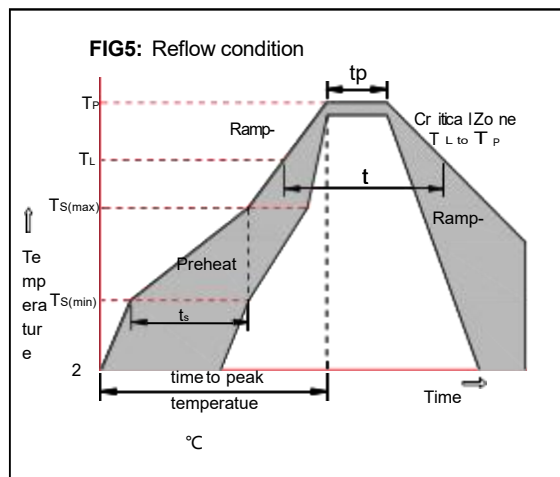


RATING AND CHARACTERISTIC CURVES



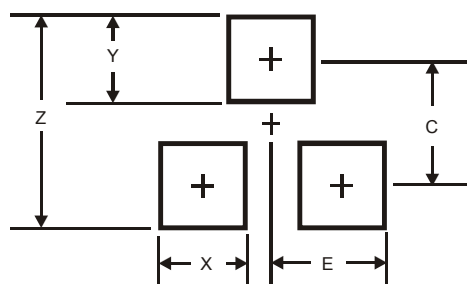
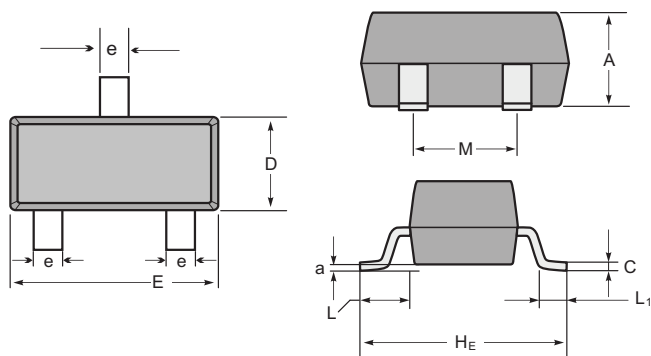
## Soldering parameters

| Reflow Condition                                        |                                   | Pb-Free assembly<br>(see as below) |
|---------------------------------------------------------|-----------------------------------|------------------------------------|
| Pre Heat                                                | -Temperature Min ( $T_{s(min)}$ ) | +150°C                             |
|                                                         | -Temperature Max( $T_{s(max)}$ )  | +200°C                             |
|                                                         | -Time (Min to Max) (ts)           | 60-180 secs.                       |
| Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak) |                                   | 3°C/sec. Max                       |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                    |                                   | 3°C/sec. Max                       |
| Reflow                                                  | -Temperature( $T_L$ )(Liquid us)  | +217°C                             |
|                                                         | -Temperature( $t_L$ )             | 60-150 secs.                       |
| Peak Temp ( $T_P$ )                                     |                                   | +260(+0/-5)°C                      |
| Time within 5°C of actual Peak Temp ( $t_P$ )           |                                   | 30 secs. Max                       |
| Ramp-down Rate                                          |                                   | 6°C/sec. Max                       |
| Time 25°C to Peak Temp ( $T_P$ )                        |                                   | 8 min. Max                         |
| Do not exceed                                           |                                   | +260°C                             |



## Package Dimensions & Suggested Pad Layout

### SOT23

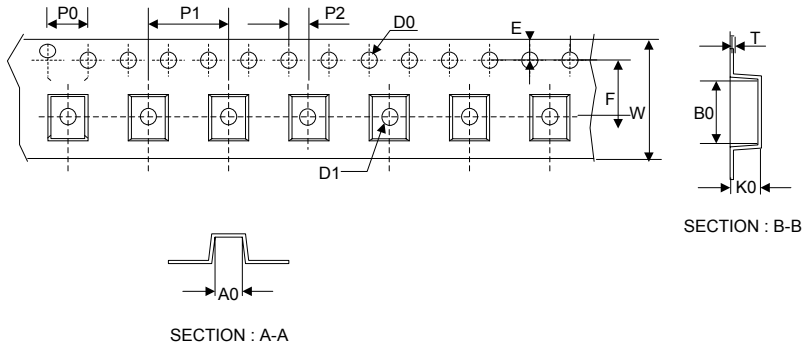
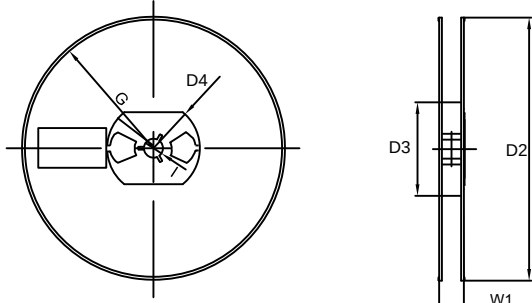


### SOT-23 mechanical data

| UNIT | A   | C   | D    | E   | H <sub>E</sub> | e   | M   | L    | L <sub>1</sub> | a          |
|------|-----|-----|------|-----|----------------|-----|-----|------|----------------|------------|
| mm   | max | 1.1 | 0.15 | 1.4 | 3.0            | 2.6 | 0.5 | 1.95 | 0.55 (ref)     | 0.36 (ref) |
|      | min | 0.9 | 0.08 | 1.2 | 2.8            | 2.2 | 0.3 | 1.7  |                | 0.15       |
| mil  | max | 43  | 6    | 55  | 118            | 102 | 20  | 77   | 22 (ref)       | 14 (ref)   |
|      | min | 35  | 3    | 47  | 110            | 87  | 12  | 67   |                | 6          |

| Dimensions | SOT23 |
|------------|-------|
| Z          | 2.9   |
| X          | 0.8   |
| Y          | 0.9   |
| C          | 2.0   |
| E          | 1.35  |

## Tape & reel specification

| Tape                                                                                |  | Symbol            | Dimension (mm) |
|-------------------------------------------------------------------------------------|--|-------------------|----------------|
|    |  | P0                | 4.00±0.10      |
|                                                                                     |  | P1                | 4.00±0.10      |
|                                                                                     |  | P2                | 2.00±0.10      |
|                                                                                     |  | D0                | 1.55±0.10      |
|                                                                                     |  | D1                | 1.05±0.10      |
|                                                                                     |  | E                 | 1.55±0.10      |
|                                                                                     |  | F                 | 3.60±0.10      |
|                                                                                     |  | W                 | 8.00±0.10      |
|                                                                                     |  | A0                | 3.80±0.20      |
|                                                                                     |  | B0                | 3.25±0.20      |
|                                                                                     |  | K0                | 1.45±0.10      |
|                                                                                     |  | T                 | 0.25±0.05      |
|                                                                                     |  | D2                | 178.0±3.0      |
|                                                                                     |  | D3                | 55Min.         |
| 7" Reel                                                                             |  | D4                | R24.0±3.0      |
|  |  | G                 | R82.0±3.0      |
|                                                                                     |  | I                 | 13.0±2.0       |
|                                                                                     |  | W1                | 11.0±3.0       |
|                                                                                     |  | Quantity: 3000PCS |                |