TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

# 2SB905

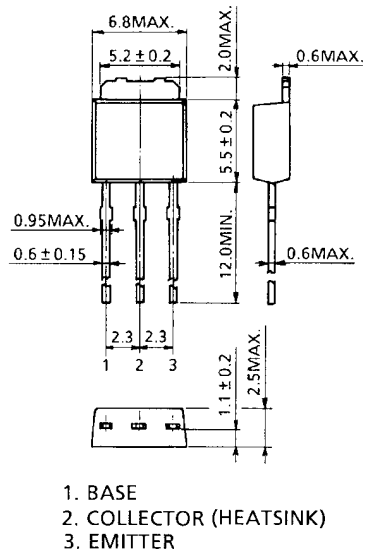
Power Amplifier Applications

- Complementary to SD1220

## Maximum Ratings (Ta = 25°C)

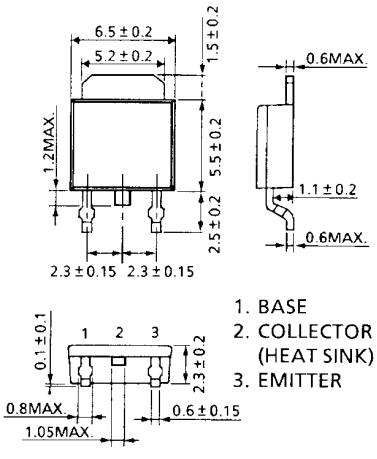
| Characteristics | | Symbol | Rating | Unit |
|---|---|---|---|---|
| Collector-base voltage | | $V_{CBO}$ | −150 | V |
| Collector-emitter voltage | | $V_{CEO}$ | −150 | V |
| Emitter-base voltage | | $V_{EBO}$ | −6 | V |
| Collector current | | $I_C$ | −1.5 | A |
| Base current | | $I_B$ | −1.0 | A |
| Collector power dissipation | Ta = 25°C | $P_C$ | 1.0 | W |
| | Tc = 25°C | | 10 | |
| Junction temperature | | $T_j$ | 150 | °C |
| Storage temperature range | | $T_{stg}$ | −55 to 150 | °C |

Unit: mm




| | |
|---|---|
| JEDEC | — |
| JEITA | — |
| TOSHIBA | 2-7B1A |

Weight: 0.36 g (typ.)




| | |
|---|---|
| JEDEC | — |
| JEITA | — |
| TOSHIBA | 2-7J1A |

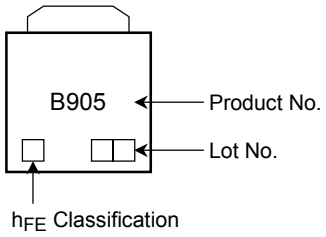
Weight: 0.36 g (typ.)

## Electrical Characteristics (Ta = 25°C)

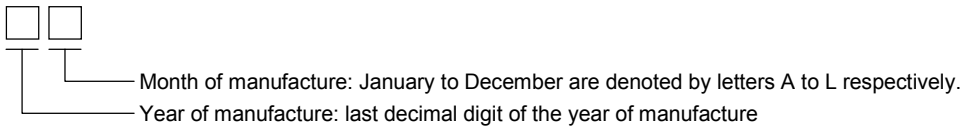
| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$ = −150 V, $I_E$ = 0 | — | — | −1.0 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$ = −6 V, $I_C$ = 0 | — | — | −1.0 | μA |
| Collector-emitter breakdown voltage | $V_{(BR)\ CEO}$ | $I_C$ = −10 mA, $I_B$ = 0 | −150 | — | — | V |
| DC current gain | $h_{FE}$ (Note) | $V_{CE}$ = −5 V, $I_C$ = −200 mA | 60 | — | 320 | |
| Collector-emitter saturation voltage | $V_{CE\ (sat)}$ | $I_C$ = −500 mA, $I_B$ = −50 mA | — | — | −1.5 | V |
| Base-emitter voltage | $V_{BE}$ | $V_{CE}$ = −5 V, $I_C$ = −5 mA | −0.5 | — | −0.8 | V |
| Transition frequency | $f_T$ | $V_{CE}$ = −5 V, $I_C$ = −200 mA | 15 | 50 | — | MHz |
| Collector output capacitance | $C_{ob}$ | $V_{CB}$ = −10 V, $I_E$ = 0, f = 1 MHz | — | — | 35 | pF |

Note: $h_{FE}$ classification R: 60 to 120, O: 100 to 200, Y: 160 to 320

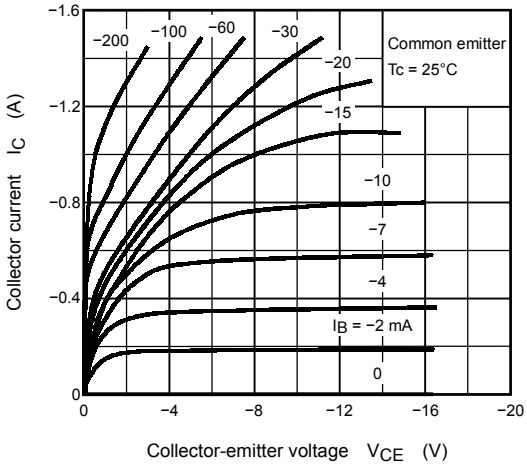
## Marking



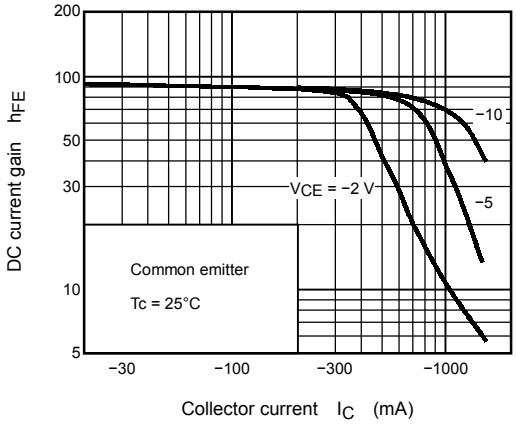

## Explanation of Lot No.



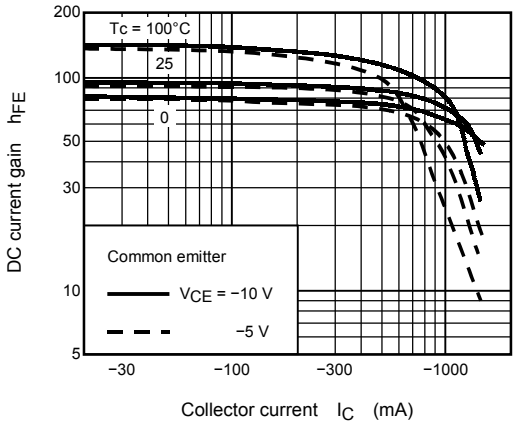
$I_C - V_{CE}$



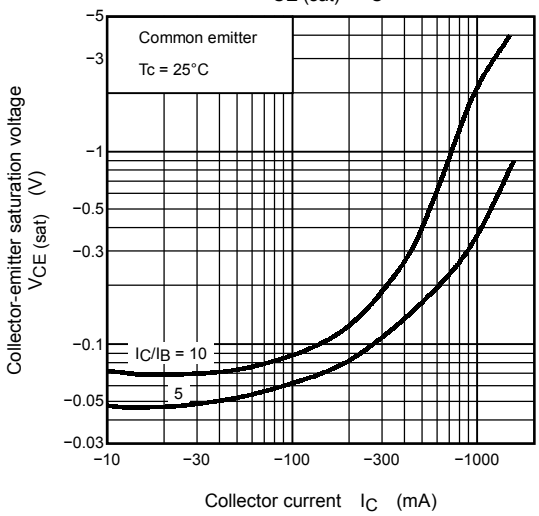

$h_{FE} - I_C$



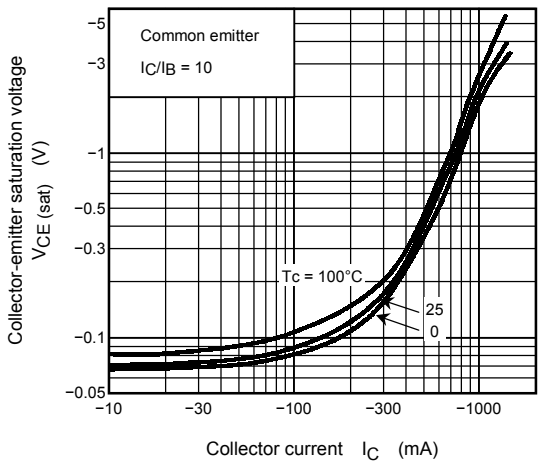

$h_{FE} - I_C$



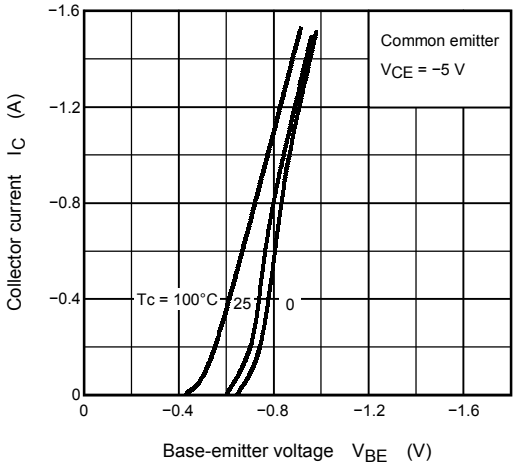

$V_{CE\ (sat)} - I_C$



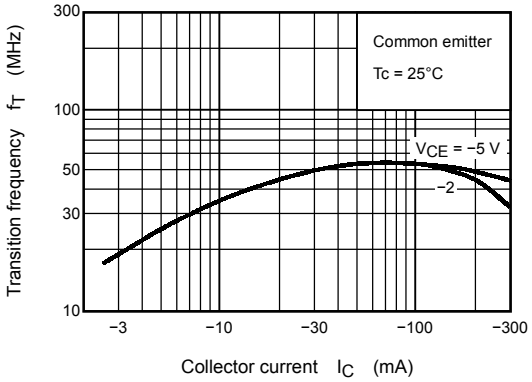

$V_{CE\ (sat)} - I_C$



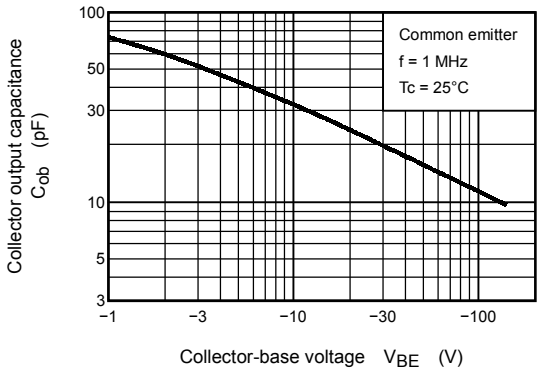

$I_C - V_{BE}$



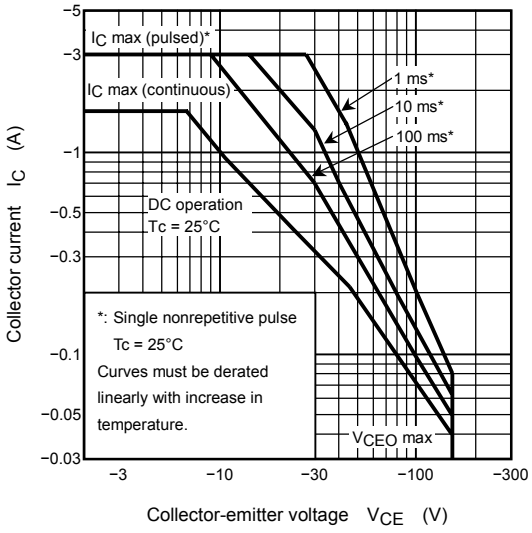
$f_T - I_C$



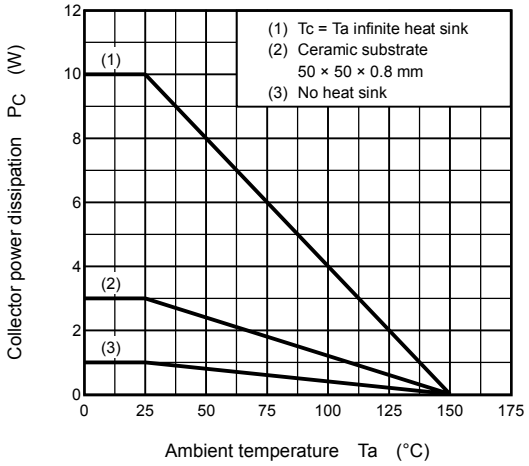

$C_{ob} - V_{CB}$




Safe Operating Area




$P_C - Ta$



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