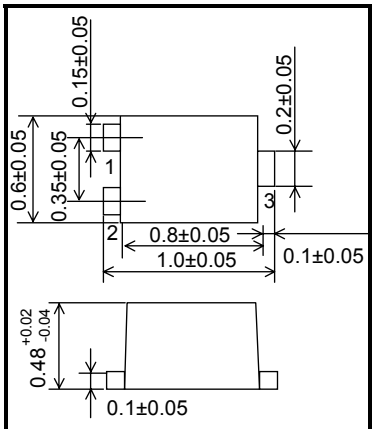
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

# 2SA2154

## General-Purpose Amplifier Applications

- High voltage and high current
  : $V_{CEO}$ = −50 V, $I_C$ = −100 mA (max)
- Excellent $h_{FE}$ linearity
  : $h_{FE}$ ($I_C$ = −0.1 mA)/$h_{FE}$ ($I_C$ = −2 mA) = 0.95 (typ.)
- High $h_{FE}$ : $h_{FE}$ = 120~400
- Complementary to 2SC6026
- Lead (Pb) free

Unit: mm




1.BASE
2.EMITTER
3.COLLECTOR

| | |
|---|---|
| fSM | |
| JEDEC | — |
| JEITA | — |
| TOSHIBA | 2-1E1A |

Weight: 0.0006 g (typ.)

## Maximum Ratings (Ta = 25°C)

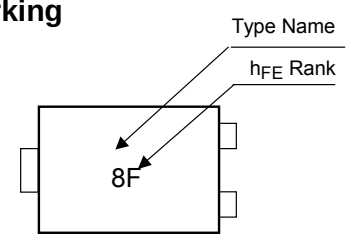
| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-base voltage | $V_{CBO}$ | −50 | V |
| Collector-emitter voltage | $V_{CEO}$ | −50 | V |
| Emitter-base voltage | $V_{EBO}$ | −5 | V |
| Collector current | $I_C$ | −100 | mA |
| Base current | $I_B$ | −30 | mA |
| Collector power dissipation | $P_C$ | 50 | mW |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature range | $T_{stg}$ | −55~150 | °C |

## Electrical Characteristics (Ta = 25°C)

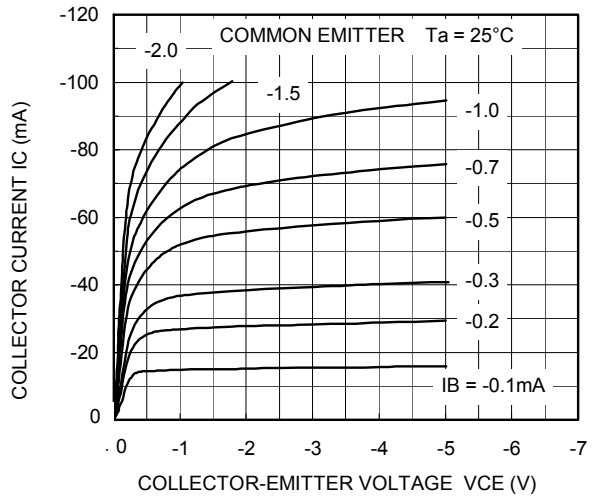
| Characteristic | Symbol | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| Collector cutoff current | $I_{CBO}$ | $V_{CB}$ = −50 V, $I_E$ = 0 | — | — | −0.1 | μA |
| Emitter cutoff current | $I_{EBO}$ | $V_{EB}$ = −5 V, $I_C$ = 0 | — | — | −0.1 | μA |
| DC current gain | $h_{FE}$ (Note) | $V_{CE}$ = −6 V, $I_C$ = −2 mA | 120 | — | 400 | — |
| Collector-emitter saturation voltage | $V_{CE\ (sat)}$ | $I_C$ = −100 mA, $I_B$ = −10 mA | — | −0.18 | −0.3 | V |
| Transition frequency | $f_T$ | $V_{CE}$ = −10 V, $I_C$ = −1 mA | 80 | — | — | MHz |
| Collector output capacitance | $C_{ob}$ | $V_{CB}$ = −10 V, $I_E$ = 0, f = 1 MHz | — | 1.6 | — | pF |

Note: $h_{FE}$ classification Y (F): 120~240, GR (H): 200~400
( ) marking symbol

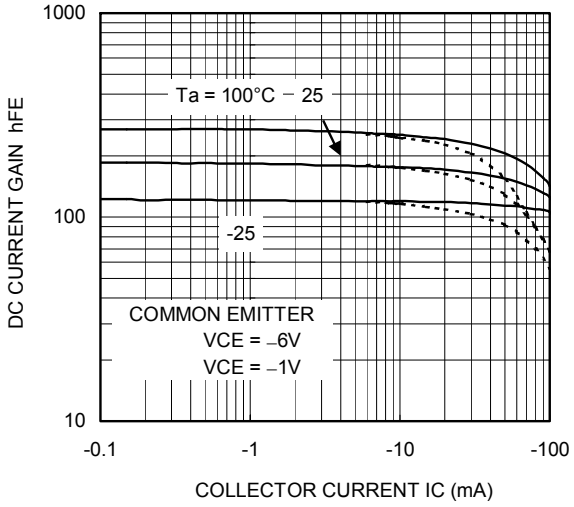
## Marking



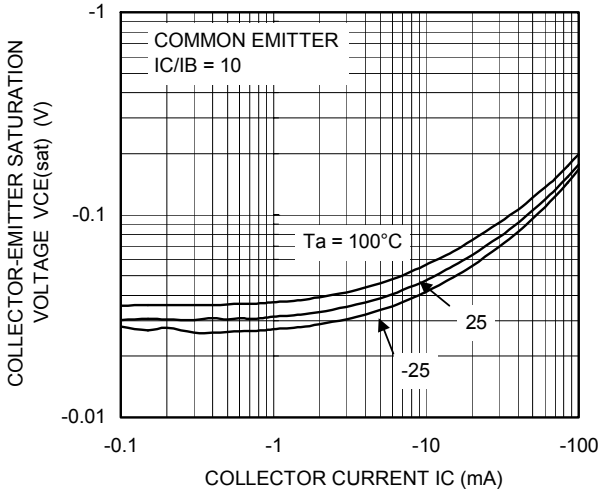
IC - VCE



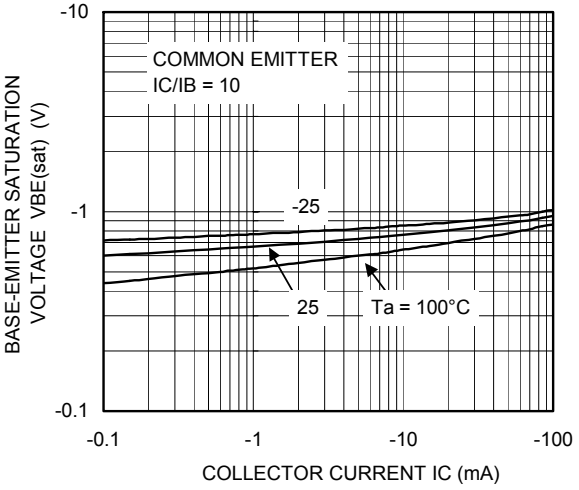

hFE - IC



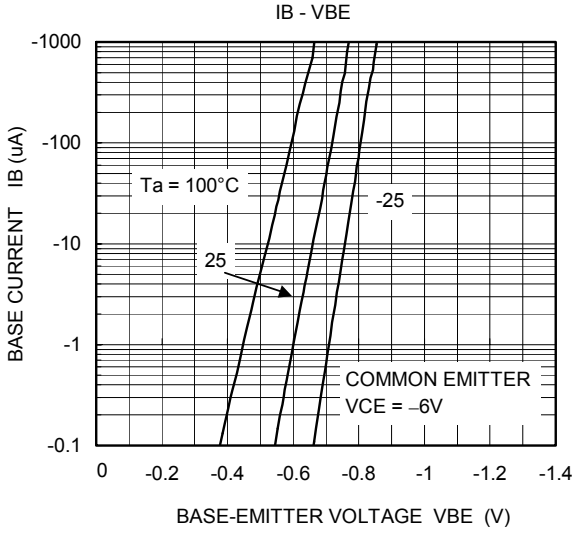

VCE(sat) - IC



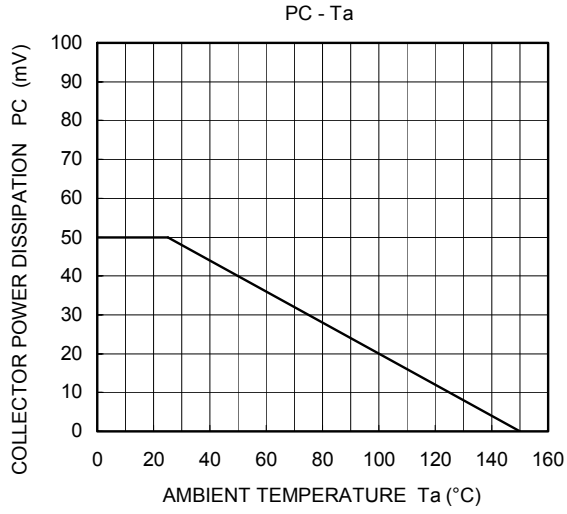

VBE(sat) - IC




IB - VBE




PC - Ta



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