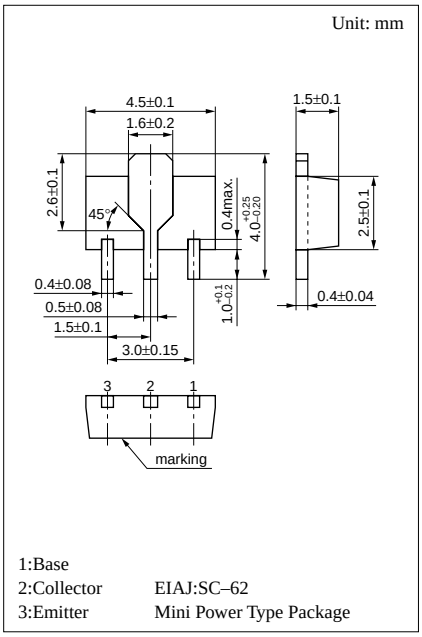
# 2SC4543

## Silicon NPN epitaxial planer type

For video amplifier




Marking symbol : 1F

### Features

- High transition frequency $f_T$.
- Small collector output capacitance $C_{ob}$.
- Wide current range.

### Absolute Maximum Ratings (Ta=25˚C)

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector to base voltage | $V_{CBO}$ | 110 | V |
| Collector to emitter voltage | $V_{CER}$ *1 | 100 | V |
| Collector to emitter voltage | $V_{CEO}$ | 50 | V |
| Emitter to base voltage | $V_{EBO}$ | 3.5 | V |
| Peak collector current | $I_{CP}$ | 300 | mA |
| Collector current | $I_C$ | 150 | mA |
| Collector power dissipation | $P_C$ *2 | 1.0 | W |
| Junction temperature | $T_j$ | 150 | ˚C |
| Storage temperature | $T_{stg}$ | –55 ~ +150 | ˚C |

*1 $R_{EB}$ = 1.2kΩ

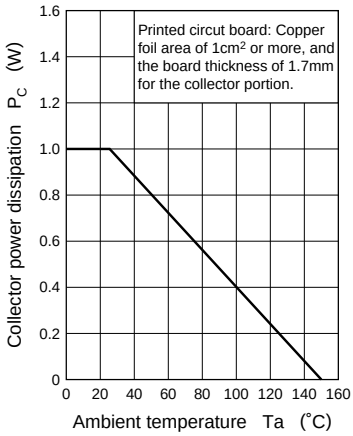
*2 Printed circuit board: Copper foil area of 1cm$^2$ or more, and the board thickness of 1.7mm for the collector portion

### Electrical Characteristics (Ta=25˚C)

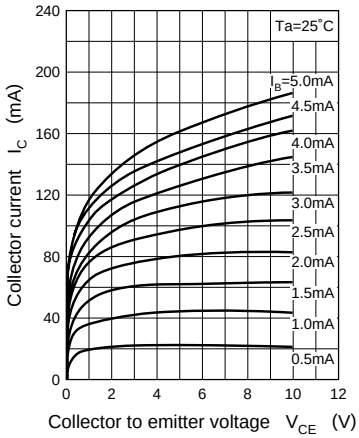
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|---|---|---|---|---|---|
| Collector cutoff current | $I_{CEO}$ | $V_{CE}$ = 35V, $I_B$ = 0 | | | 10 | μA |
| Collector to base voltage | $V_{CBO}$ | $I_C$ = 100μA, $I_E$ = 0 | 110 | | | V |
| Collector to emitter voltage | $V_{CER}$ | $I_C$ = 500μA, $R_{BE}$ = 470Ω | 100 | | | V |
| | $V_{CEO}$ | $I_C$ = 1mA, $I_B$ = 0 | 50 | | | V |
| Emitter to base voltage | $V_{EBO}$ | $I_E$ = 100μA, $I_C$ = 0 | 3.5 | | | V |
| Forward current transfer ratio | $h_{FE}$ | $V_{CE}$ = 5V, $I_C$ = 100mA* | 20 | | | |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C$ = 150mA, $I_B$ = 15mA* | | | 0.5 | V |
| Transition frequency | $f_{T1}$ | $V_{CB}$ = 10V, $I_E$ = –10mA, f = 200MHz | | 300 | | MHz |
| | $f_{T2}$ | $V_{CB}$ = 10V, $I_E$ = –110mA*, f = 200MHz | | 350 | | MHz |
| Collector output capacitance | $C_{ob}$ | $V_{CB}$ = 30V, $I_E$ = 0, f = 1MHz | | 3 | | pF |

* Pulse measurement

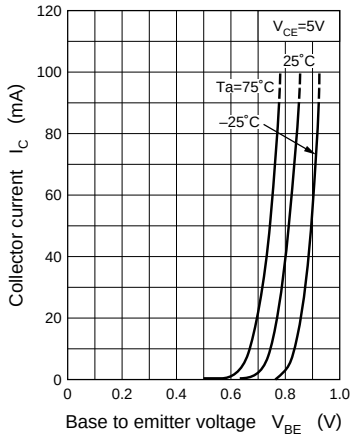
$P_C$ — Ta



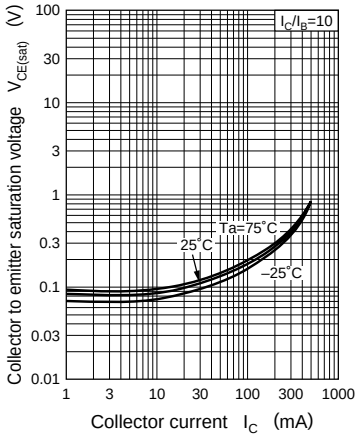

$I_C$ — $V_{CE}$



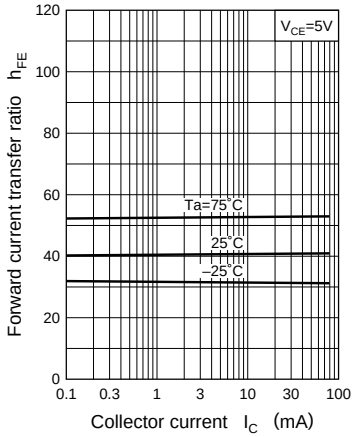

$I_C$ — $V_{BE}$



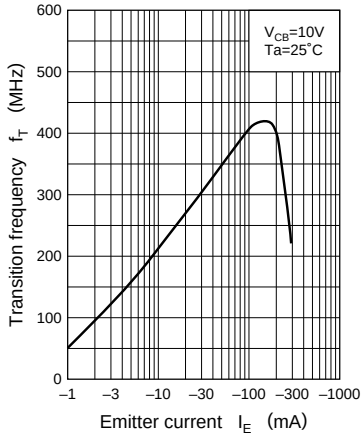

$V_{CE(sat)}$ — $I_C$




$h_{FE}$ — $I_C$




$f_T$ — $I_E$




$C_{ob}$ — $V_{CB}$