# *isc* Silicon NPN RF Transistor 2SC3585

## DESCRIPTION

- Collector Current $I_C$= 35mA
- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 10V(Min)
- High gain:

| S21e | $^2$ = 5.5 dB (typical) ( $I_C$=5mA,f=2GHz)

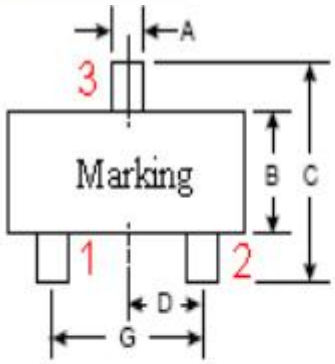
- Gain bandwidth product

fT = 10 GHZ (typical) ($I_C$=10mA,f=1GH)

- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- Designed forVHF, UHF and CATV high frequency wideband low noise amplifier applications.

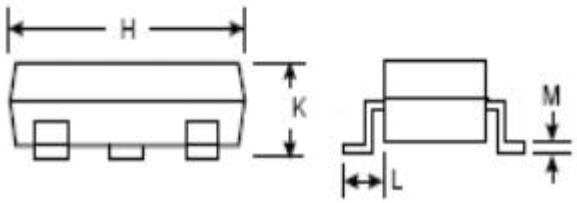



SC-59

1：Base

2：Emitter

3：Collector




| symbol | Min | Max |
|---|---|---|
| A | 0.35 | 0.50 |
| B | 1.40 | 1.70 |
| C | 2.70 | 3.10 |
| D | 0.95 | |
| G | 1.70 | 2.10 |
| H | 2.70 | 3.10 |
| K | 1.00 | 1.30 |
| L | 0.5 | 0.85 |
| M | 0.10 | 0.35 |

## ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 20 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 10 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 1.5 | V |
| $I_C$ | Collector Current-Continuous | 35 | mA |
| $P_C$ | Collector Power Dissipation | 200 | mW |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -65~150 | ℃ |

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## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C$= 1uA ; $I_E$= 0 | 20 | | | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 10V; $I_E$= 0 | | | 0.1 | μA |
| $I_{EBO}$ | Emitter-Base Cutoff Current | $V_{EB}$= 1V; $I_E$= 0 | | | 0.1 | μA |
| $h_{FE}$ | DC Current Gain | $I_C$= 10mA ; $V_{CE}$= 6V | 50 | 150 | 300 | |
| $f_T$ | Current-Gain—Bandwidth Product | $V_{CE}$=6V,$I_C$=10mA,f=1GHz | | 10 | | GHz |
| Cre | Output feedback capacitance | $V_{CB}$=10V,$I_E$=0mA,f=1MHz | | 0.65 | | pF |
| $\|S21e\|^2$ | Power gain | $V_{CE}$=6V,$I_C$=10mA,f=2GHz | | 5.5 | | dB |
| NF | Noise factor | $V_{CE}$=6V,$I_C$=5mA,f=2GHz | | 2.5 | | dB |

◆ **$h_{FE}$ Classifications**

| step | A | B | C | D | E |
|---|---|---|---|---|---|
| label | R43 | R44 | R45 | | |
| hFE | 60-100 | 90-140 | 130-180 | 170-250 | 250-300 |

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