



# TO-92 Plastic-Encapsulate Transistors

## BC347 TRANSISTOR (NPN)

### FEATURES

Power dissipation

$$P_{CM} : 0.3 \text{ W ( } T_{amb}=25 \text{ )}$$

Collector current

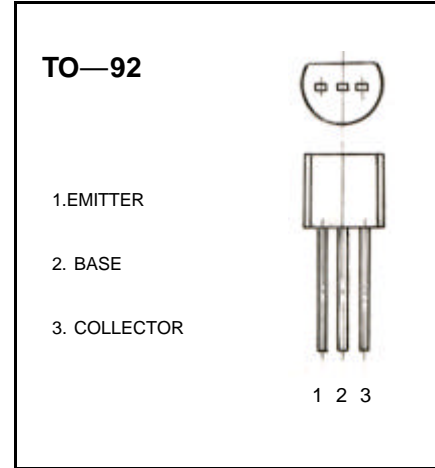
$$I_{CM} : 0.1 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 50 \text{ V}$$

Operating and storage junction temperature range

$$T_J , T_{stg} : -55 \text{ to } +150$$

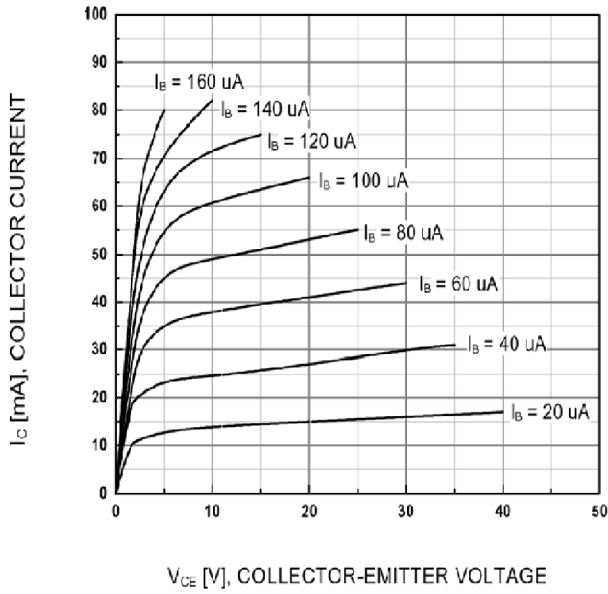


### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25$ unless otherwise specified )

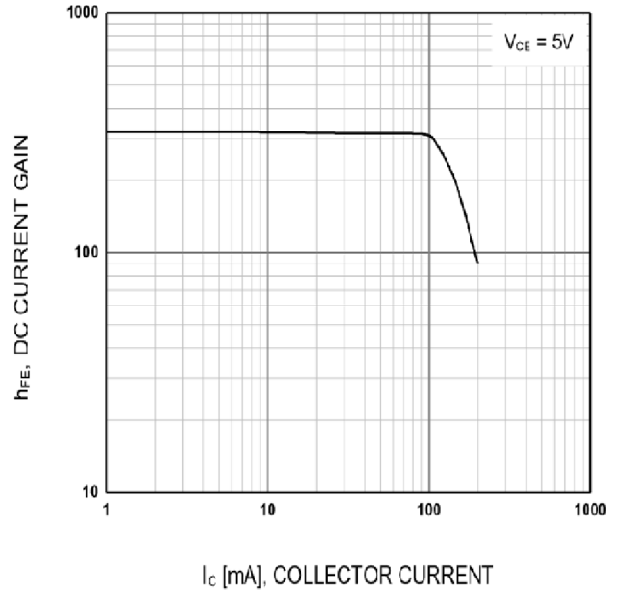
| Parameter                            | Symbol            | Test conditions   | MIN | TYP | MAX | UNIT    |
|--------------------------------------|-------------------|---|-----|-----|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CB}$<br>O | $I_C = 100 \mu A, I_E = 0$                                      | 50  |     |     | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CE}$<br>O | $I_C = 1 \text{ mA}, I_B = 0$                                   | 45  |     |     | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$     | $I_E = 100 \mu A, I_C = 0$                                      | 5   |     |     | V       |
| Collector cut-off current            | $I_{CBO}$         | $V_{CB} = 50 \text{ V}, I_E = 0$                                |     |     | 0.1 | $\mu A$ |
| Collector cut-off current            | $I_{CEO}$         | $V_{CE} = 35 \text{ V}, I_B = 0$                                |     |     | 0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$         | $V_{EB} = 3 \text{ V}, I_C = 0$                                 |     |     | 0.1 | $\mu A$ |
| DC current gain                      | $h_{FE}$          | $V_{CE} = 5 \text{ V}, I_C = 2 \text{ mA}$                      | 40  |     | 450 |         |
| Collector-emitter saturation voltage | $V_{CEsat}$       | $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$                       |     |     | 0.3 | V       |
| Base-emitter saturation voltage      | $V_{BEsat}$       | $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$                       |     |     | 1   | V       |
| Transition frequency                 | $f_T$             | $V_{CE} = 5 \text{ V}, I_C = 10 \text{ mA}, f = 30 \text{ MHz}$ | 125 |     |     | MHz     |

# Typical Characteristics

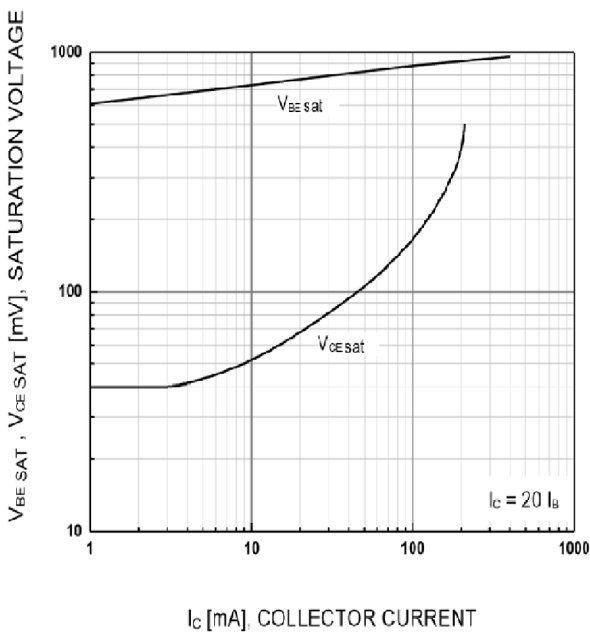
**BC347**



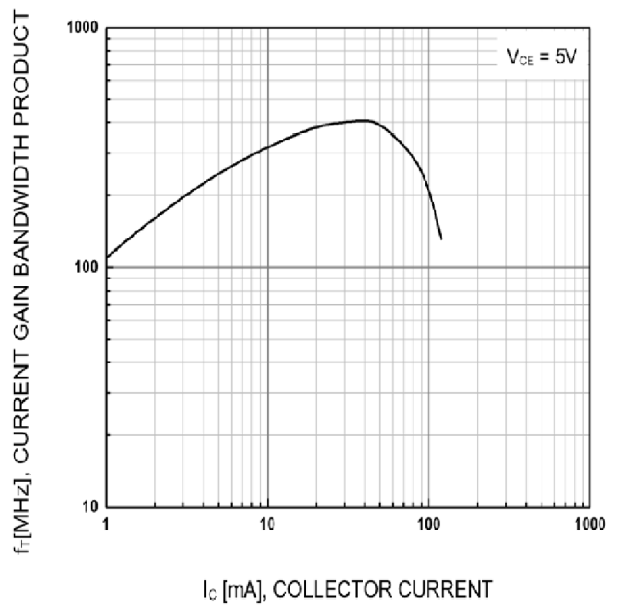
**Static Characteristic**



**DC current Gain**



**Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Current Gain Bandwidth Product**

## TO-92 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min                       | Max    | Min                  | Max   |
| A      | 3.300                     | 3.700  | 0.130                | 0.146 |
| A1     | 1.100                     | 1.400  | 0.043                | 0.055 |
| b      | 0.380                     | 0.550  | 0.015                | 0.022 |
| c      | 0.360                     | 0.510  | 0.014                | 0.020 |
| D      | 4.400                     | 4.700  | 0.173                | 0.185 |
| D1     | 3.430                     |        | 0.135                |       |
| E      | 4.300                     | 4.700  | 0.169                | 0.185 |
| e      | 1.270TYP                  |        | 0.050TYP             |       |
| e1     | 2.440                     | 2.640  | 0.096                | 0.104 |
| L      | 14.100                    | 14.500 | 0.555                | 0.571 |
| Ö      |                           | 1.600  |                      | 0.063 |
| ↓      | 0.000                     | 0.380  | 0.000                | 0.015 |