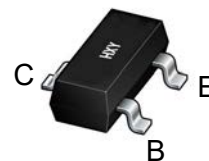


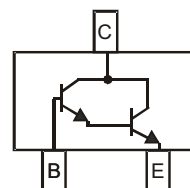


## Features

- High Collector Current
- High Current Gain



SOT-23



## Package Marking and Ordering Information

| Product ID | Pack   | Marking | Qty(PCS) |
|------------|--------|---------|----------|
| BCV27      | SOT-23 | FF      | 3000     |
| BCV47      | SOT-23 | FH      | 3000     |

## Maxmim Ratings (Ta=25 unless otherwise noted)

| Parameter                 | Symbol    | Value       | Unit |
|---------------------------|-----------|-------------|------|
| Collector Base Voltage    | $V_{CBO}$ | 40          | V    |
|                           |           | 80          |      |
| Collector Emitter Voltage | $V_{CEO}$ | 30          | V    |
|                           |           | 60          |      |
| Emitter Base Voltage      | $V_{EBO}$ | 10          | V    |
| Collector Current         | $I_C$     | 500         | mA   |
| Peak Collector Current    | $I_{CM}$  | 800         | mA   |
| Base Current              | $I_B$     | 100         | mA   |
| Maximum Power Dissipation | $P_D$     | 200         | mW   |
| Junction Temperature      | $T_J$     | 150         | °C   |
| Storage Temperature Range | $T_{STG}$ | -65 to +150 | °C   |

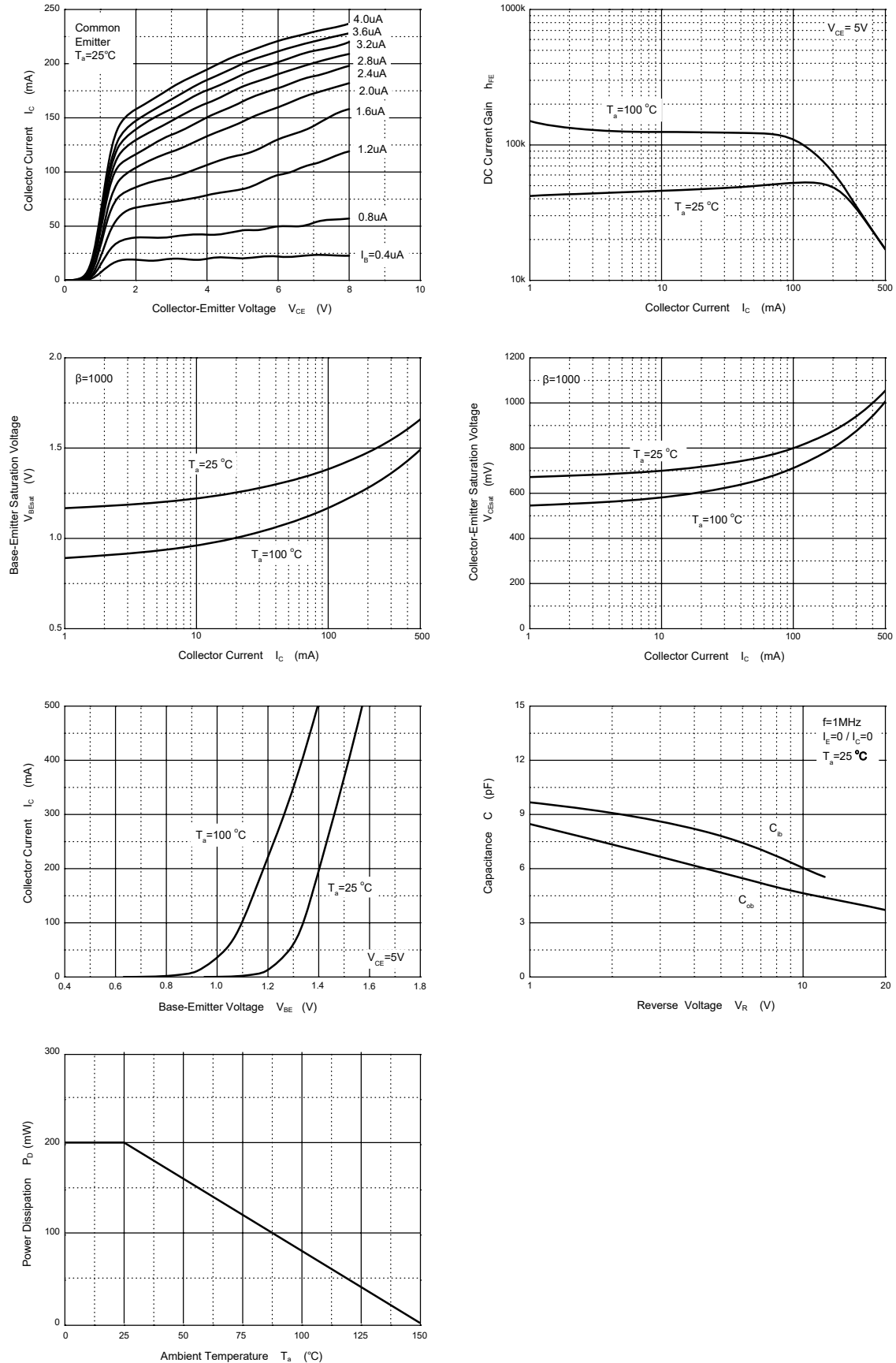


**Electrcal Charcteristics (Ta=25 unless otherwise specified)**

| Parameter                                                              |       | Symbol        | Min.  | Typ. | Max. | Unit |
|------------------------------------------------------------------------|-------|---------------|-------|------|------|------|
| DC Current Gain                                                        |       |               |       |      |      |      |
| at $V_{CE} = 5\text{ V}$ , $I_C = 1\text{ mA}$                         | BCV27 | $H_{FE}$      | 4000  | --   | --   | --   |
|                                                                        | BCV47 |               | 2000  | --   | --   |      |
| at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$                        | BCV27 |               | 10000 | --   | --   |      |
|                                                                        | BCV47 |               | 4000  | --   | --   |      |
| at $V_{CE} = 5\text{ V}$ , $I_C = 100\text{ mA}$                       | BCV27 |               | 20000 | --   | --   |      |
|                                                                        | BCV47 |               | 10000 | --   | --   |      |
| Collector Base Cutoff Current                                          |       |               |       |      |      |      |
| at $V_{CB} = 30\text{ V}$                                              | BCV27 | $I_{CBO}$     | --    | --   | 100  | nA   |
| at $V_{CB} = 60\text{ V}$                                              | BCV47 |               | --    | --   | 100  |      |
| Emitter Base Cutoff Current                                            |       |               |       |      |      |      |
| at $V_{EB} = 10\text{ V}$                                              |       | $I_{EBO}$     | --    | --   | 100  | nA   |
| Collector Base Breakdown Voltage                                       |       |               |       |      |      |      |
| at $I_C = 100\text{ }\mu\text{A}$                                      | BCV27 | $V_{(BR)CBO}$ | 40    | --   | --   | V    |
|                                                                        | BCV47 |               | 80    | --   | --   |      |
| Collector Emitter Breakdown Voltage                                    |       |               |       |      |      |      |
| at $I_C = 10\text{ mA}$                                                | BCV27 | $V_{(BR)CEO}$ | 30    | --   | --   | V    |
|                                                                        | BCV47 |               | 60    | --   | --   |      |
| Emitter Base Breakdown Voltage                                         |       |               |       |      |      |      |
| at $I_E = 10\text{ }\mu\text{A}$                                       |       | $V_{(BR)EBO}$ | 10    | --   | --   | V    |
| Collector Emitter Saturation Voltage                                   |       |               |       |      |      |      |
| at $I_C = 100\text{ mA}$ , $I_B = 0.1\text{ mA}$                       |       | $V_{CE(sat)}$ | --    | --   | 1    | V    |
| Base Emitter Saturation Voltage                                        |       |               |       |      |      |      |
| at $I_C = 100\text{ mA}$ , $I_B = 0.1\text{ mA}$                       |       | $V_{BE(sat)}$ | --    | --   | 1.5  | V    |
| Base Emitter On Voltage                                                |       |               |       |      |      |      |
| at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$                        |       | $V_{BE(on)}$  | --    | --   | 1.4  | V    |
| Transition Frequency                                                   |       |               |       |      |      |      |
| at $V_{CE} = 5\text{ V}$ , $I_C = 30\text{ mA}$ , $f = 100\text{ MHz}$ |       | $F_T$         | --    | 220  | --   | MHz  |

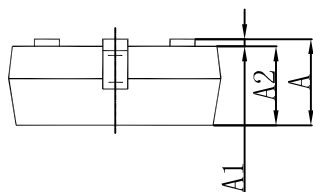
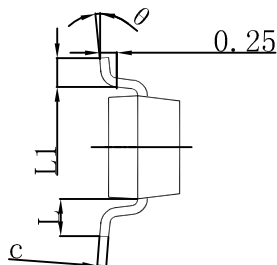
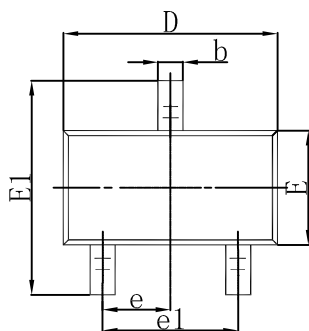


## Typical Characteristics





## SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF                 |       | 0.022 REF            |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOT-23 Suggested Pad Layout



Note:  
1. Controlling dimension: in millimeters.  
2. General tolerance:  $\pm 0.05\text{mm}$ .  
3. The pad layout is for reference purposes only.



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