

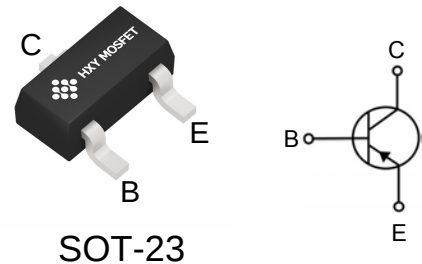


## Features

- Collector Current:  $I_C = -0.1A$
- Power Dissipation of 200mW

## Package Marking and Ordering Information

| Product ID | Pack   | Marking | Qty(PCS) |
|------------|--------|---------|----------|
| BCW89      | SOT-23 | 3A      | 3000     |



## Maximum Ratings ( $T_a = 25^\circ C$ unless otherwise noted)

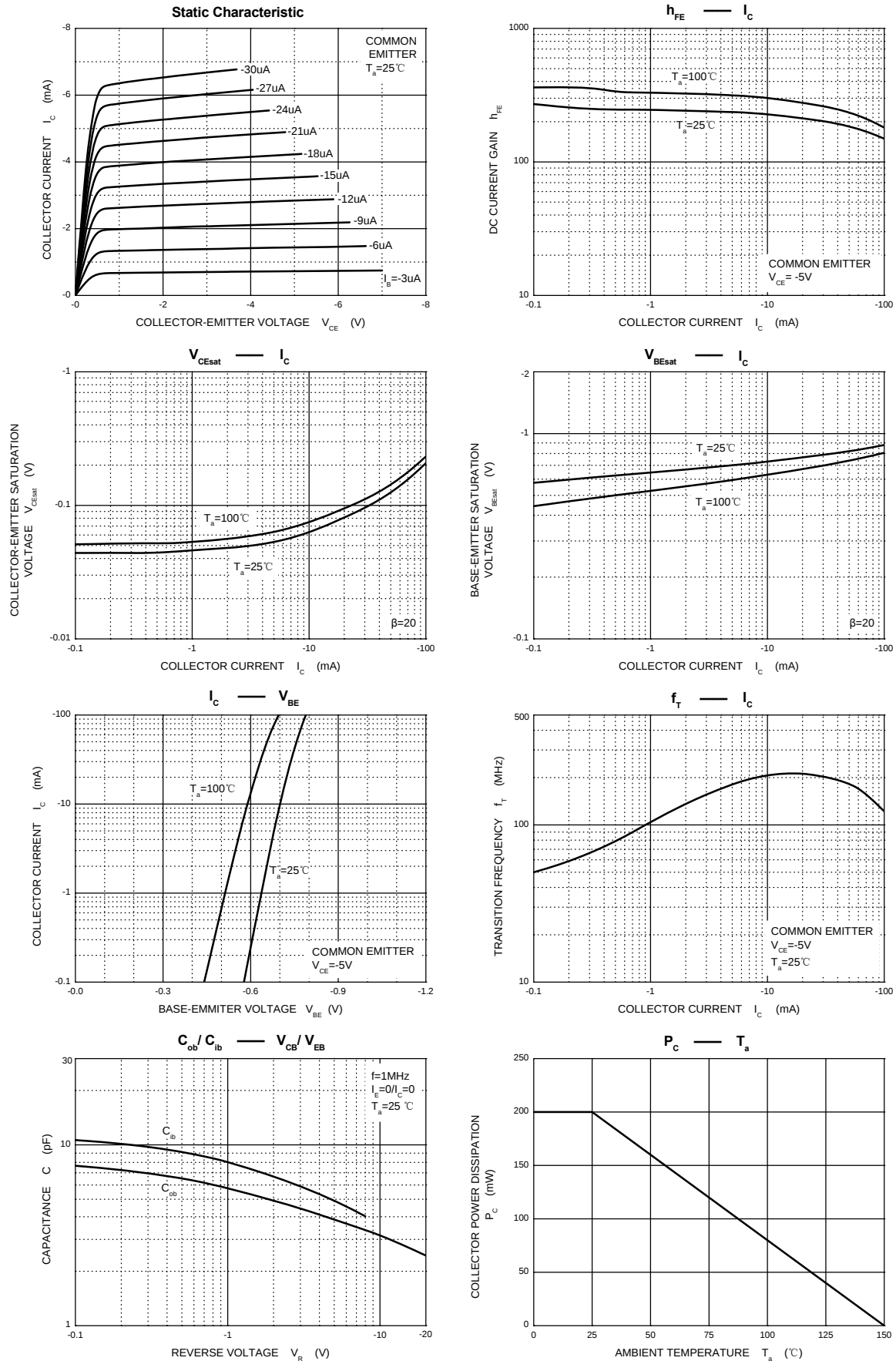
| Symbol    | Parameter                    | Value   | Unit       |
|-----------|------------------------------|---------|------------|
| $V_{CBO}$ | Collector-Base Voltage       | -85     | V          |
| $V_{CEO}$ | Collector-Emitter Voltage    | -65     | V          |
| $V_{EBO}$ | Emitter-Base Voltage         | -5      | V          |
| $I_C$     | Collector Current-Continuous | -0.1    | A          |
| $P_C$     | Collector Power Dissipation  | 200     | mW         |
| $T_j$     | Junction Temperature         | 150     | $^\circ C$ |
| $T_{stg}$ | Storage Temperature          | -55-150 | $^\circ C$ |

## Electrical Characteristics ( $T_a = 25^\circ C$ unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                         | Min | Max  | Unit    |
|--------------------------------------|---------------|-----------------------------------------|-----|------|---------|
| Collector-base breakdown voltage     | $V_{CBO}$     | $I_C = -10\mu A, I_E = 0$               | -80 |      | V       |
| Collector-emitter breakdown voltage  | $V_{CEO}$     | $I_C = -10mA, I_B = 0$                  | -65 |      | V       |
| Emitter-base breakdown voltage       | $V_{EBO}$     | $I_E = -1\mu A, I_C = 0$                | -5  |      | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = -70V, I_E = 0$                |     | -0.1 | $\mu A$ |
| Collector cut-off current            | $I_{CEO}$     | $V_{CE} = -60V, I_B = 0$                |     | -0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -5V, I_C = 0$                 |     | -0.1 | $\mu A$ |
| DC current gain                      | $h_{FE}$      | $V_{CE} = -5V, I_C = -2mA$              | 125 | 250  |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -100mA, I_B = -5mA$              |     | -0.5 | V       |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = -100mA, I_B = -5mA$              |     | -1.1 | V       |
| Transition frequency                 | $f_T$         | $V_{CE} = -5V, I_C = -10mA, f = 100MHz$ | 100 |      | MHz     |
| Collector capacitance                | $C_{ob}$      | $V_{CB} = -10V, f = 1MHz$               |     | 4.5  | pF      |



## Typical Characteristics





## Package Dimensions SOT-23



| 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°    |

## 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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