



Micro Commercial Components



Micro Commercial Components  
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# BC868-10/16/25

## Features

- Halogen free available upon request by adding suffix "-HF"
- High current
- Low voltage
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

**0.5W**  
**NPN Medium**  
**Power Transistors**

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Max | Units |
|--------|-----------|-----|-----|-------|
|--------|-----------|-----|-----|-------|

### OFF CHARACTERISTICS

|               |                                                                       |     |     |              |
|---------------|-----------------------------------------------------------------------|-----|-----|--------------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage<br>( $I_C=100\mu A_{dc}$ , $I_E=0$ ) | 32  | --- | Vdc          |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage<br>( $I_C=1mA_{dc}$ , $I_B=0$ )   | 20  | --- | Vdc          |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage<br>( $I_E=100\mu A_{dc}$ , $I_C=0$ )   | 5.0 | --- | Vdc          |
| $I_{CBO}$     | Collector Cutoff Current<br>( $V_{CB}=25V$ , $I_E=0$ )                | --- | 0.1 | $\mu A_{dc}$ |
| $I_{EBO}$     | Emitter Cutoff Current<br>( $V_{EB}=5.0V_{dc}$ , $I_C=0$ )            | --- | 0.1 | $\mu A_{dc}$ |

### ON CHARACTERISTICS

|               |                                                                              |     |               |     |
|---------------|------------------------------------------------------------------------------|-----|---------------|-----|
| $h_{FE(1)}$   | DC Current Gain<br>( $I_C=50mA_{dc}$ , $V_{CE}=1.0V_{dc}$ )                  | 85  | 375           | --- |
| $h_{FE(2)}$   | DC Current Gain<br>( $I_C=1A_{dc}$ , $V_{CE}=1.0V_{dc}$ )                    | 60  | ---           | --- |
| $h_{FE(3)}$   | DC Current Gain<br>( $I_C=5mA_{dc}$ , $V_{CE}=10V_{dc}$ )                    | 50  | ---           | --- |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage<br>( $I_C=1A_{dc}$ , $I_B=100mA_{dc}$ ) | --- | 0.5           | Vdc |
| $V_{BE(on)}$  | Base-Emitter On Voltage(1)<br>( $I_C=5mA_{dc}$ , $V_{CE}=10V_{dc}$ )         | --- | 0.62<br>(Typ) | Vdc |
| $V_{BE(on)}$  | Base-Emitter On Voltage(2)<br>( $I_C=1A_{dc}$ , $V_{CE}=1V_{dc}$ )           | --- | 1             | Vdc |

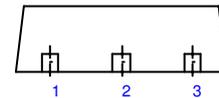
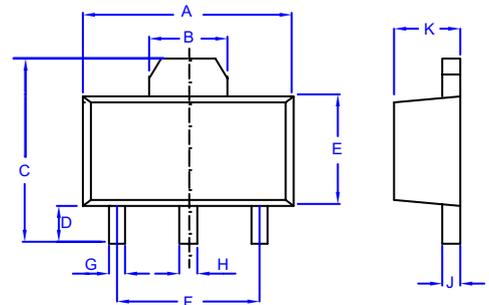
### SMALL-SIGNAL CHARACTERISTICS

|       |                                                                             |    |     |     |
|-------|-----------------------------------------------------------------------------|----|-----|-----|
| $f_T$ | Transition Frequency<br>( $I_C=10mA_{dc}$ , $V_{CE}=5V_{dc}$ , $f=100MHz$ ) | 40 | --- | MHz |
|-------|-----------------------------------------------------------------------------|----|-----|-----|

### CLASSIFICATION OF $h_{FE(1)}$

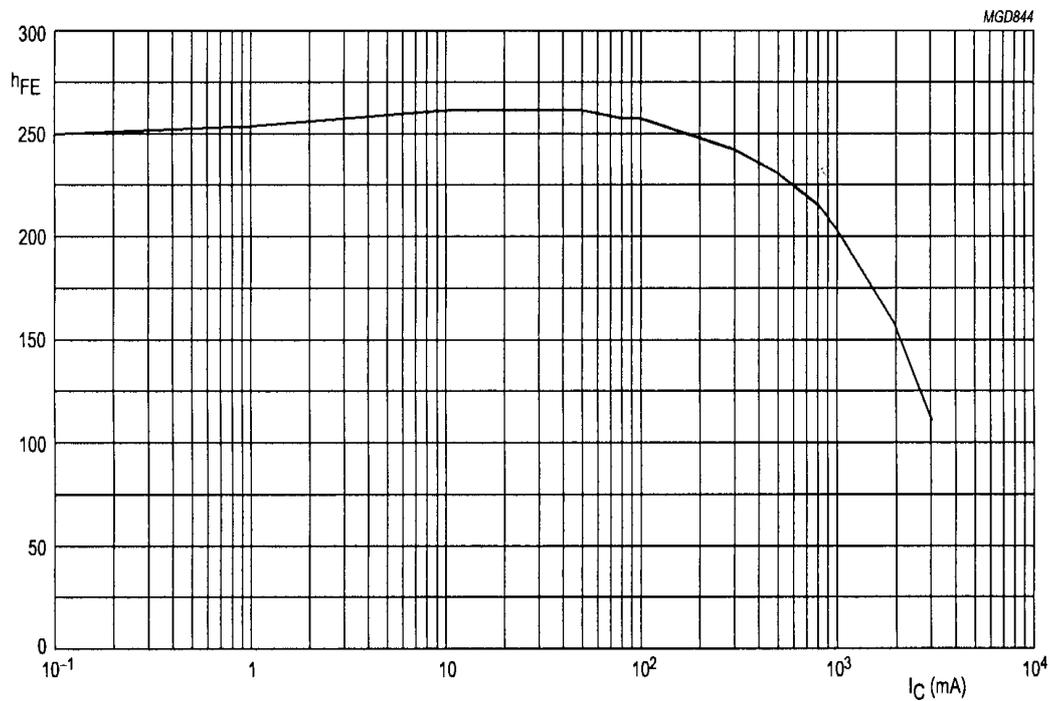
| Rank    | BC868-10 | BC868-16 | BC868-25 |
|---------|----------|----------|----------|
| Range   | 85-160   | 120-200  | 160-375  |
| Marking | CBC      | CCC      | CDC      |

## SOT-89



1. BASE
2. COLLECTOR
3. EMITTER

| DIM | DIMENSIONS |      |      |      | NOTES |
|-----|------------|------|------|------|-------|
|     | INCHES     |      | MM   |      |       |
|     | MIN        | MAX  | MIN  | MAX  |       |
| A   | .173       | .181 | 4.39 | 4.60 |       |
| B   | .061       | ---- | 1.55 | ---- | REF.  |
| C   | .154       | .165 | 3.91 | 4.25 |       |
| D   | .031       | .039 | 0.80 | 1.00 |       |
| E   | .092       | .100 | 2.34 | 2.54 |       |
| F   | .118       | ---- | 3.00 | ---- | TYP   |
| G   | .013       | .019 | 0.33 | 0.48 |       |
| H   | .015       | .021 | 0.38 | 0.53 |       |
| J   | .015       | .016 | 0.38 | 0.41 |       |
| K   | .055       | .063 | 1.40 | 1.60 |       |



V<sub>CE</sub> = 1 V.

DC current gain; typical values.



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### Ordering Information :

| Device         | Packing                  |
|----------------|--------------------------|
| Part Number-TP | Tape & Reel; 1 Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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