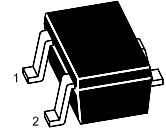


# BC856W...BC860W

## PNP Silicon Epitaxial Planar Transistor

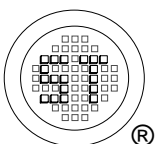
for general purpose and switching applications



1.Base 2.Emitter 3.Collector  
SOT-323 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

| Parameter                 | Symbol     | Value  | Unit   |                            |    |
|---------------------------|------------|--|--|----------------------------|----|
| Collector Base Voltage    | $-V_{CBO}$ | BC856W<br>BC857W<br>BC858W<br>BC859W<br>BC860W | 80<br>50<br>30<br>30<br>50                     | V                          |    |
| Collector Emitter Voltage |            | $-V_{CEO}$                                     | BC856W<br>BC857W<br>BC858W<br>BC859W<br>BC860W | 65<br>45<br>30<br>30<br>45 | V  |
| Emitter Base Voltage      |            |  | $-V_{EBO}$                                     | 5                          | V  |
| Collector Current         |            |  | $-I_C$   | 100                        | mA |
| Peak Collector Current    |            |  | $-I_{CM}$                                      | 100                        | mA |
| Total Power Dissipation   | $P_{tot}$  |  | 200  | mW                         |    |
| Junction Temperature      | $T_j$      | 150  | $^\circ\text{C}$                               |                            |    |
| Storage Temperature Range | $T_s$      | - 55 to + 150                                  | $^\circ\text{C}$                               |                            |    |



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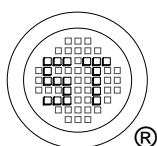


Dated : 21/06/2006

# BC856W...BC860W

## Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter  | Symbol          | Min.       | Max. | Unit |   |
|--|-----------------|------------|------|------|---|
| DC Current Gain<br>at $-V_{CE} = 5\text{ V}$ , $-I_C = 2\text{ mA}$  | BC856AW~BC860AW | $h_{FE}$   | 125  | 250  | - |
|  | BC856BW~BC860BW | $h_{FE}$   | 220  | 475  | - |
|  | BC856CW~BC860CW | $h_{FE}$   | 420  | 800  | - |
| Collector Base Voltage<br>at $-I_C = 10\text{ }\mu\text{A}$  | BC856W          | $-V_{CBO}$ | 80   | -    | V |
|  | BC857W          |            | 50   | -    |   |
|  | BC858W          |            | 30   | -    |   |
|  | BC859W          |            | 30   | -    |   |
|  | BC860W          |            | 50   | -    |   |
| Collector Emitter Voltage<br>at $-I_C = 10\text{ mA}$  | BC856W          | $-V_{CEO}$ | 65   | -    | V |
|  | BC857W          |            | 45   | -    |   |
|  | BC858W          |            | 30   | -    |   |
|  | BC859W          |            | 30   | -    |   |
|  | BC860W          |            | 45   | -    |   |
| Emitter Base Voltage<br>at $-I_E = 1\text{ }\mu\text{A}$   | $-V_{EBO}$      | 5          | -    | V    |   |
| Collector Base Cutoff Current<br>at $-V_{CB} = 30\text{ V}$  | $-I_{CBO}$      | -          | 15   | nA   |   |
| Emitter Base Cutoff Current<br>at $-V_{EB} = 5\text{ V}$   | $-I_{EBO}$      | -          | 100  | nA   |   |
| Collector Emitter Saturation Voltage<br>at $-I_C = 10\text{ mA}$ , $-I_B = 0.5\text{ mA}$<br>$-I_C = 100\text{ mA}$ , $-I_B = 5\text{ mA}$ | $-V_{CE(sat)}$  | -          | 0.3  | V    |   |
|  |                 | -          | 0.65 |      |   |
| Base Emitter Voltage<br>at $-V_{CE} = 5\text{ V}$ , $-I_C = 2\text{ mA}$<br>$-V_{CE} = 5\text{ V}$ , $-I_C = 10\text{ mA}$                 | $-V_{BE}$       | 0.6        | 0.75 | V    |   |
|  |                 | -          | 0.82 |      |   |
| Transition Frequency<br>at $-V_{CE} = 5\text{ V}$ , $-I_C = 10\text{ mA}$ , $f = 100\text{ MHz}$   | $f_T$           | 100        | -    | MHz  |   |
| Output Capacitance<br>at $-V_{CB} = 10\text{ V}$ , $I_E = 0$ , $f = 1\text{ MHz}$  | $C_{ob}$        | -          | 4.5  | pF   |   |



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Certificate No. 7116



ISO 9001:2000  
Certificate No. 0506088

Dated : 21/06/2006

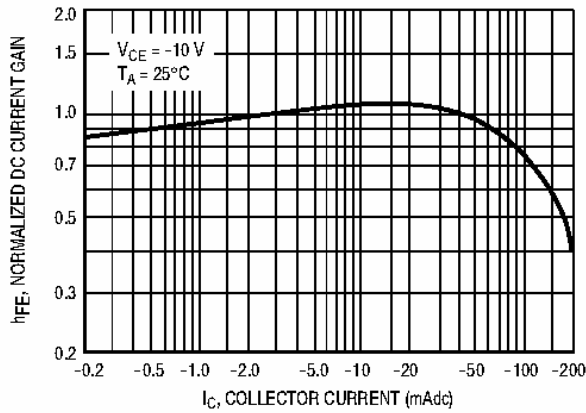


Figure 1. Normalized DC Current Gain

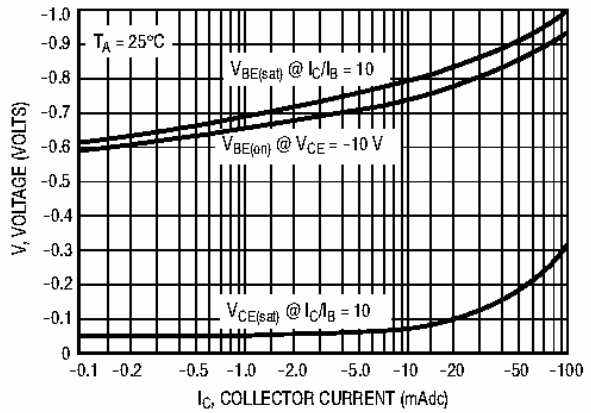


Figure 2. "Saturation" and "On" Voltages

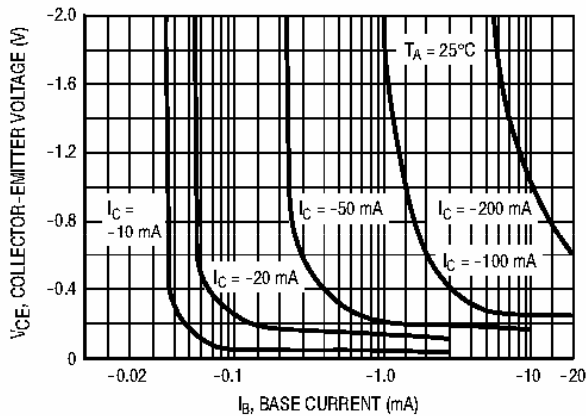


Figure 3. Collector Saturation Region

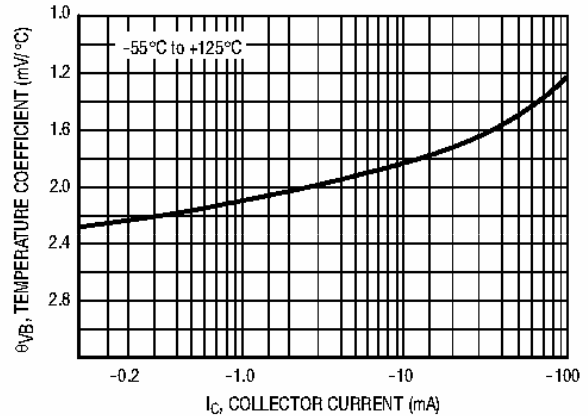


Figure 4. Base-Emitter Temperature Coefficient

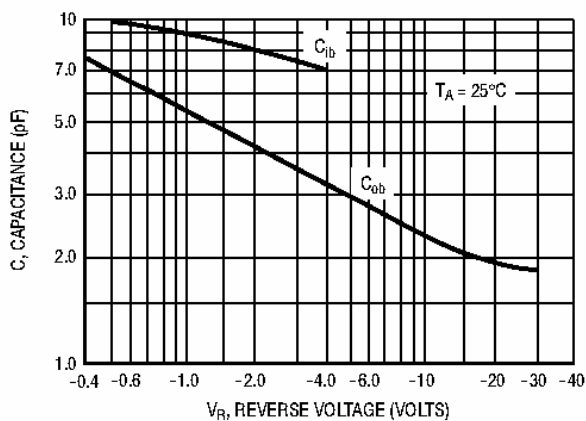


Figure 5. Capacitances

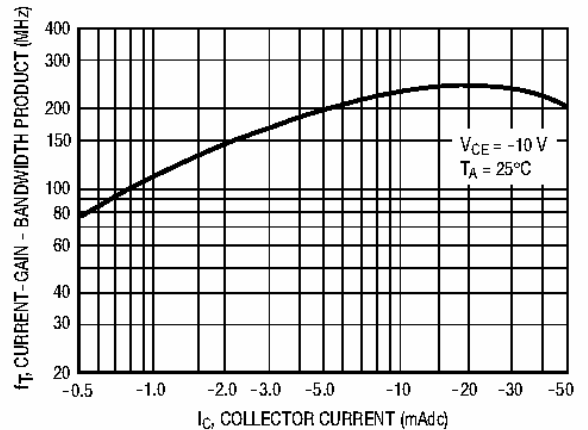
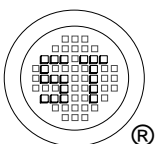


Figure 6. Current-Gain - Bandwidth Product



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# BC856W...BC860W

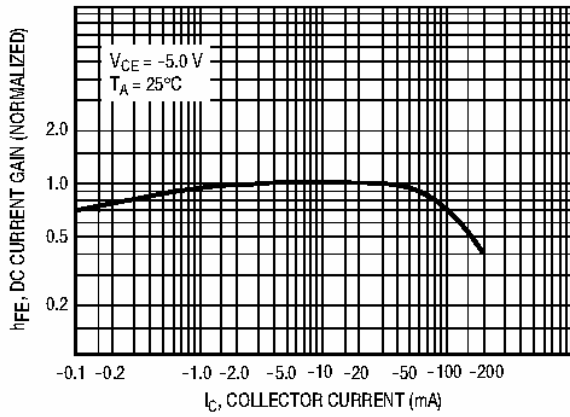


Figure 7. DC Current Gain

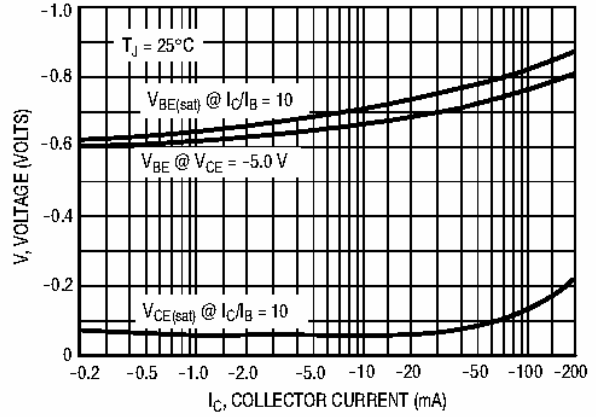


Figure 8. "On" Voltage

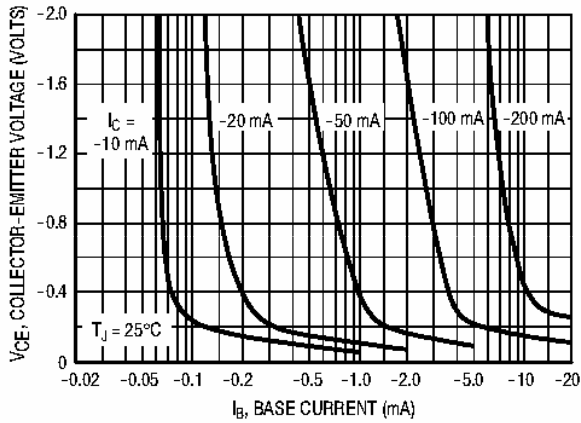


Figure 9. Collector Saturation Region

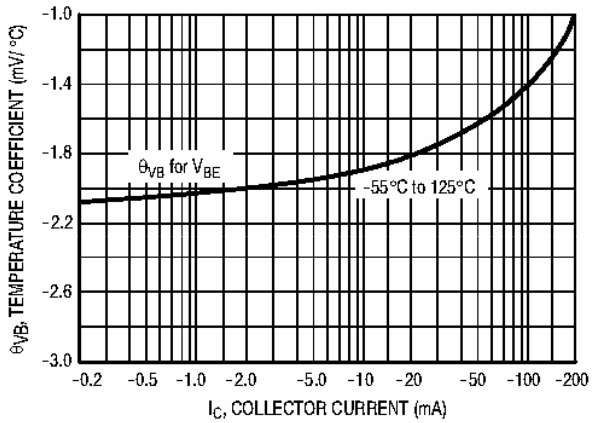


Figure 10. Base-Emitter Temperature Coefficient

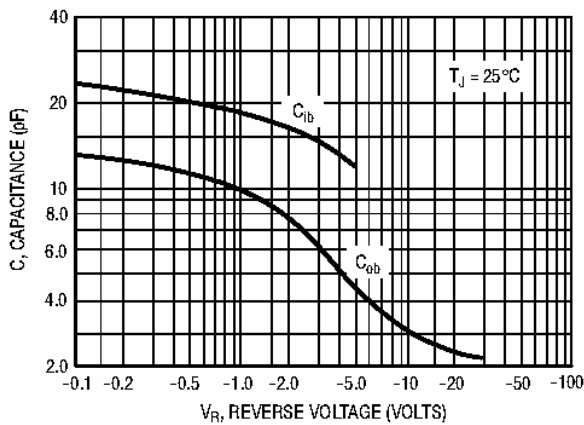


Figure 11. Capacitance

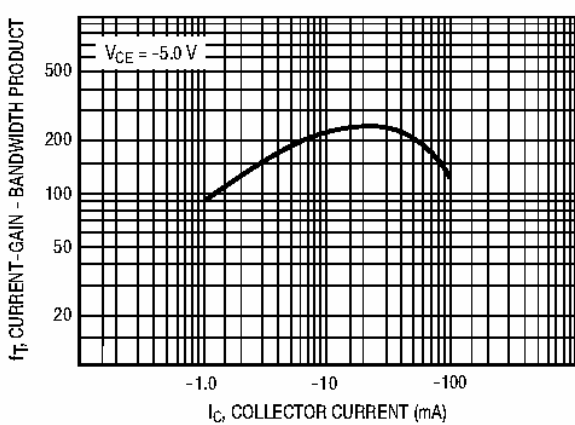
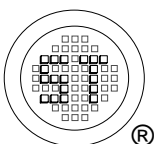


Figure 12. Current-Gain - Bandwidth Product



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