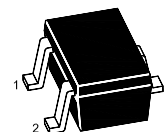


# BC856W...BC860W

## PNP Silicon Epitaxial Planar Transistor

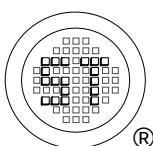
for general purpose and switching applications



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

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

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



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ISO 14001:2004  
Certificate No. 7116



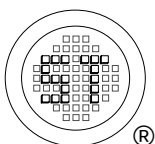
ISO 9001:2000  
Certificate No. 0506088

Dated : 21/06/2006

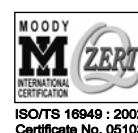
# BC856W...BC860W

## 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>$-I_C = 100\text{ mA}$ , $-I_B = 5\text{ mA}$ | $-V_{CE(sat)}$ | -<br>-   | 0.3<br>0.65  | V    |
| 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<br>- | 0.75<br>0.82 | V    |
| 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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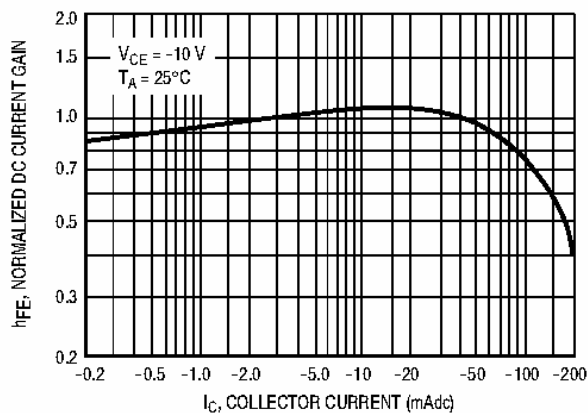


Figure 1. Normalized DC Current Gain

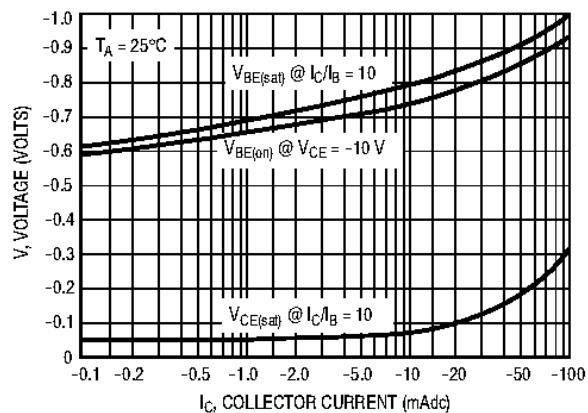


Figure 2. "Saturation" and "On" Voltages

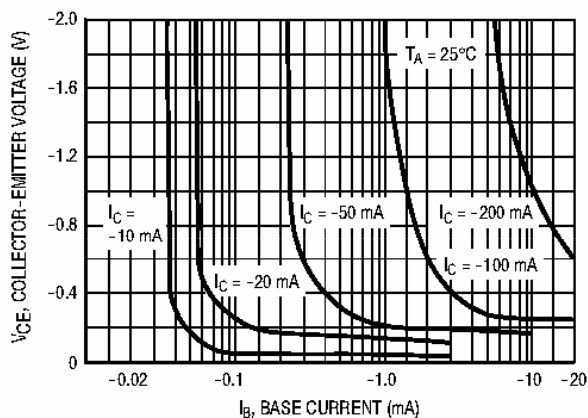


Figure 3. Collector Saturation Region

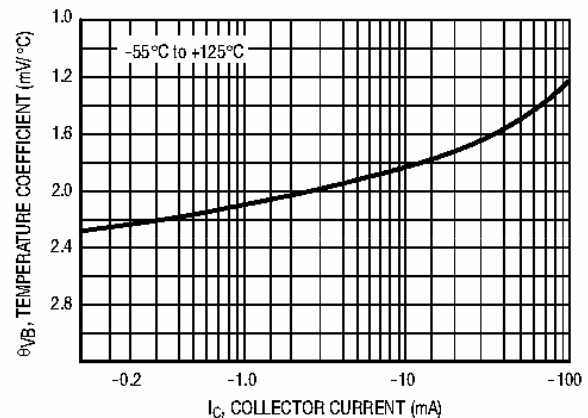


Figure 4. Base-Emitter Temperature Coefficient

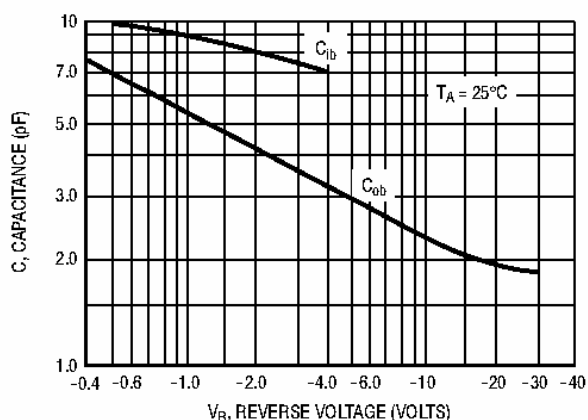


Figure 5. Capacitances

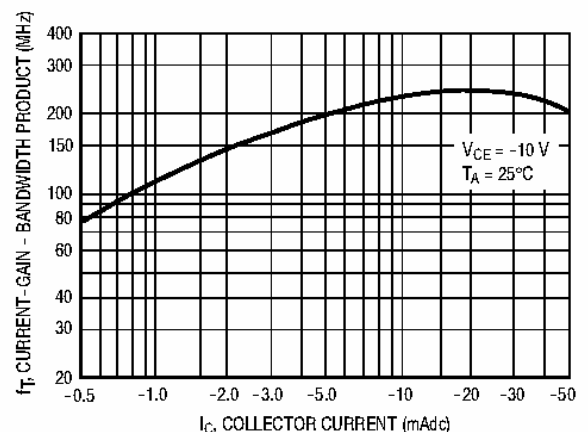
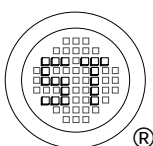


Figure 6. Current-Gain - Bandwidth Product



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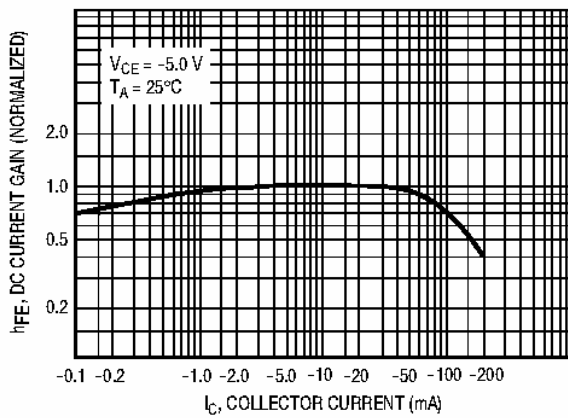


Figure 7. DC Current Gain

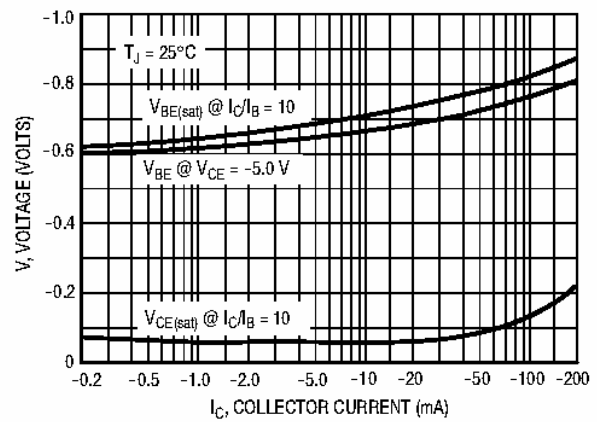


Figure 8. "On" Voltage

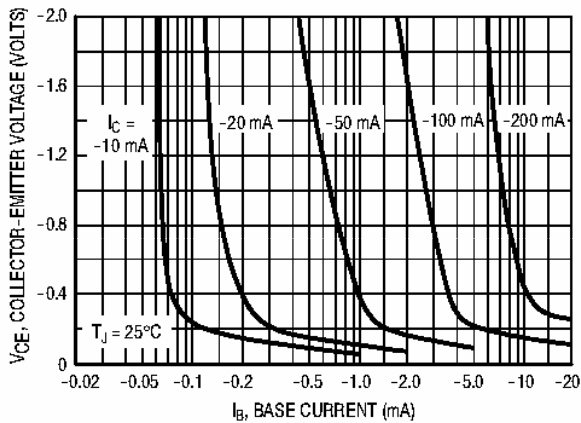


Figure 9. Collector Saturation Region

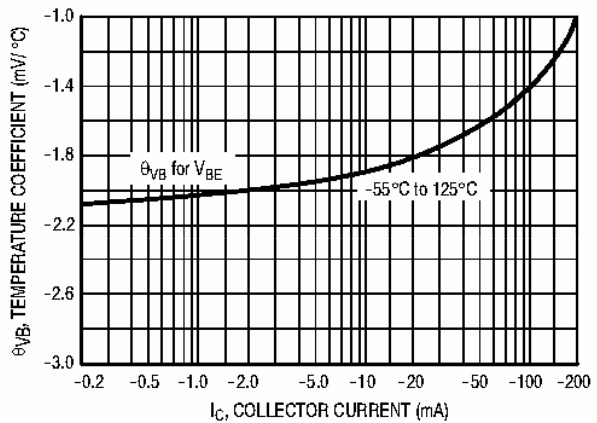


Figure 10. Base-Emitter Temperature Coefficient

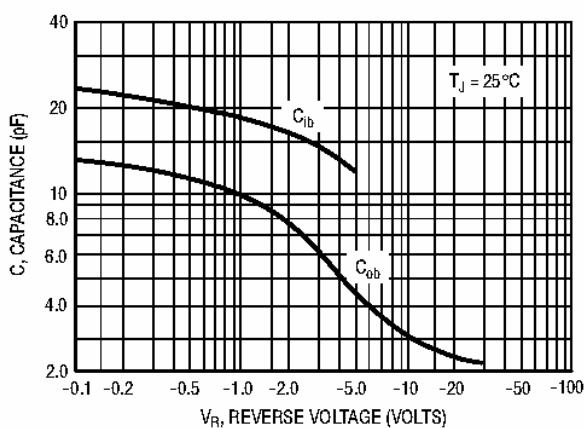


Figure 11. Capacitance

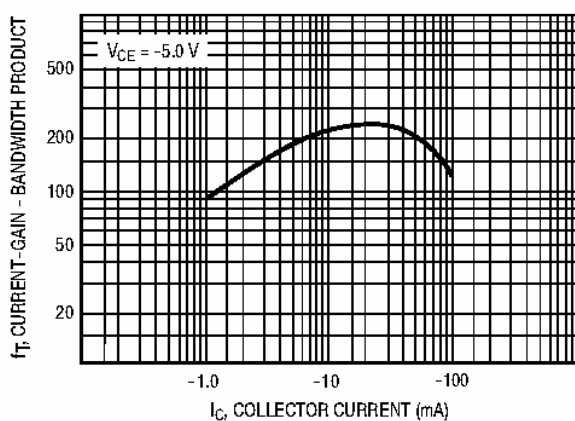
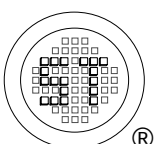


Figure 12. Current-Gain - Bandwidth Product



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