



# FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,  
KWUN TONG, KOWLOON, HONG KONG.

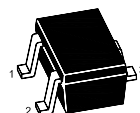
TEL: 852-2790 0314 FAX: 852-2790 0206

## BC807W / BC808W

### PNP Silicon Epitaxial Planar Transistors

for general purpose and switching applications

These transistors are subdivided into three groups  
-16, -25, -40 according to their current gain.

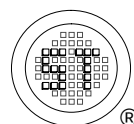


1.Base 2.Emitter 3.Collector  
SOT-323 Plastic Package

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

| Parameter                                | Symbol          | Value             | Unit             |
|------------------------------------------|-----------------|-------------------|------------------|
| Collector Base Voltage                   | $-V_{CBO}$      | 50                | V                |
|                                          |                 | 30                |                  |
| Collector Emitter Voltage                | $-V_{CEO}$      | 45                | V                |
|                                          |                 | 25                |                  |
| Emitter Base Voltage                     | $-V_{EBO}$      | 5                 | V                |
| Collector Current                        | $-I_C$          | 500               | mA               |
| Peak Collector Current                   | $-I_{CM}$       | 1                 | A                |
| Peak Base Current                        | $-I_{BM}$       | 200               | mA               |
| Power Dissipation                        | $P_{tot}$       | 200               | mW               |
| Thermal Resistance , Junction to Ambient | $R_{\theta JA}$ | 625 <sup>1)</sup> | K/W              |
| Junction Temperature                     | $T_J$           | 150               | $^\circ\text{C}$ |
| Storage Temperature Range                | $T_s$           | -65 to +150       | $^\circ\text{C}$ |

<sup>1)</sup> Transistor mounted on an FR4 printed-circuit board.



Dated : 23/02/2006

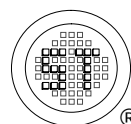
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**BC807W / BC808W****Characteristics at  $T_{amb} = 25^{\circ}\text{C}$** 

| Parameter                                                                                                          | Symbol         | Min.     | Max.     | Unit                |
|--------------------------------------------------------------------------------------------------------------------|----------------|----------|----------|---------------------|
| DC Current Gain<br>at $-V_{CE} = 1\text{ V}$ , $-I_C = 100\text{ mA}$                                              |                |          |          |                     |
| -16W                                                                                                               | $h_{FE}$       | 100      | 250      | -                   |
| -25W                                                                                                               | $h_{FE}$       | 160      | 400      | -                   |
| -40W                                                                                                               | $h_{FE}$       | 250      | 600      | -                   |
| at $-V_{CE} = 1\text{ V}$ , $-I_C = 500\text{ mA}$                                                                 | $h_{FE}$       | 40       | -        | -                   |
| Collector Base Breakdown Voltage<br>at $-I_C = 10\text{ }\mu\text{A}$                                              | $-V_{(BR)CBO}$ | 50<br>30 | -<br>-   | V                   |
| Collector Emitter Breakdown Voltage<br>at $-I_C = 10\text{ mA}$                                                    | $-V_{(BR)CEO}$ | 45<br>25 | -<br>-   | V                   |
| Emitter Base Breakdown Voltage<br>at $-I_E = 10\text{ }\mu\text{A}$                                                | $-V_{(BR)EBO}$ | 5        | -        | V                   |
| Collector Emitter Saturation Voltage<br>at $-I_C = 500\text{ mA}$ , $-I_B = 50\text{ mA}$                          | $-V_{CEsat}$   | -        | 0.7      | V                   |
| Base Emitter Voltage<br>at $-I_C = 500\text{ mA}$ , $-V_{CE} = 1\text{ V}$                                         | $-V_{BE}$      | -        | 1.2      | V                   |
| Collector Cutoff Current<br>at $-V_{CB} = 20\text{ V}$<br>at $-V_{CB} = 20\text{ V}$ , $T_J = 150^{\circ}\text{C}$ | $-I_{CBO}$     | -<br>-   | 100<br>5 | nA<br>$\mu\text{A}$ |
| Emitter Cutoff Current<br>at $-V_{EB} = 5\text{ V}$                                                                | $-I_{EBO}$     | -        | 100      | nA                  |
| Transition Frequency<br>at $-V_{CE} = 5\text{ V}$ , $-I_C = 10\text{ mA}$ , $f = 100\text{ MHz}$                   | $f_T$          | 80       | -        | MHz                 |
| Collector Capacitance<br>at $-V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$                                           | $C_c$          | -        | 10       | pF                  |



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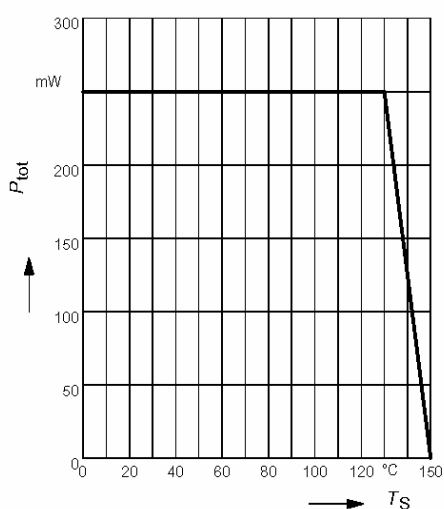
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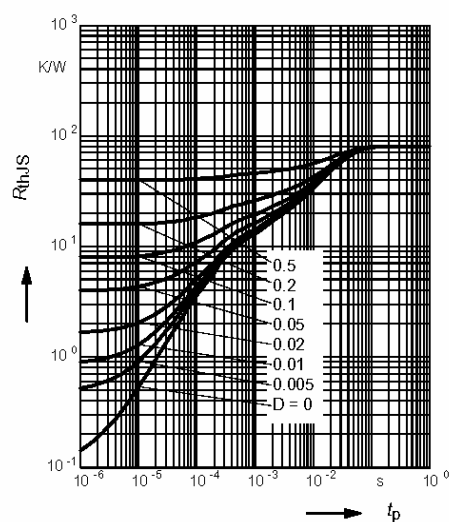
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**Total power dissipation  $P_{\text{tot}} = f(T_S)$**

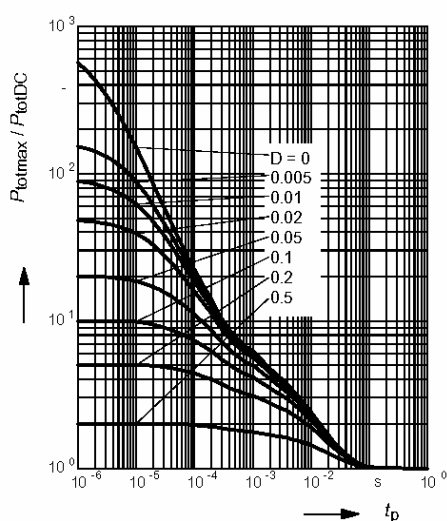


**Permissible Pulse Load  $R_{\text{thJS}} = f(t_p)$**



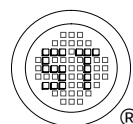
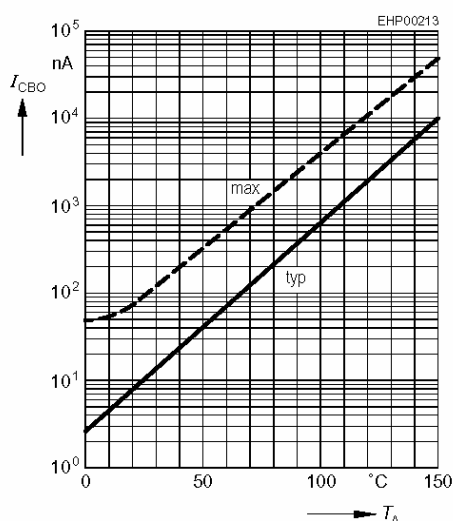
**Permissible Pulse Load**

$$P_{\text{totmax}} / P_{\text{totDC}} = f(t_p)$$



**Collector cutoff current  $I_{\text{CBO}} = f(T_A)$**

$$V_{\text{CB}} = 25\text{V}$$



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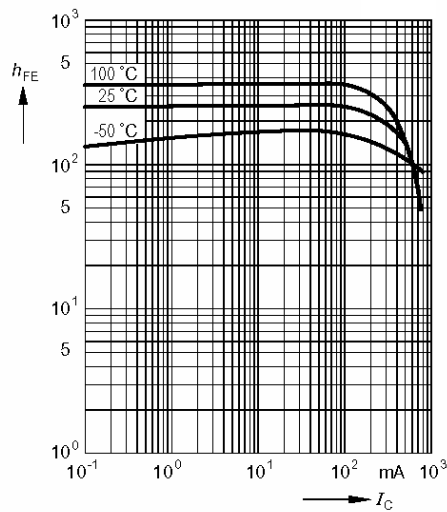
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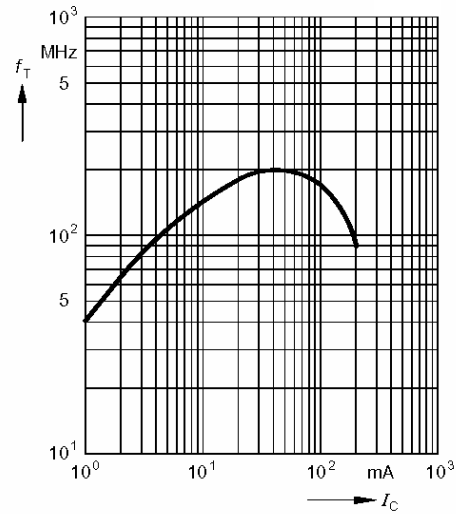
**DC current gain  $h_{FE} = f(I_C)$**

$V_{CE} = 1V$



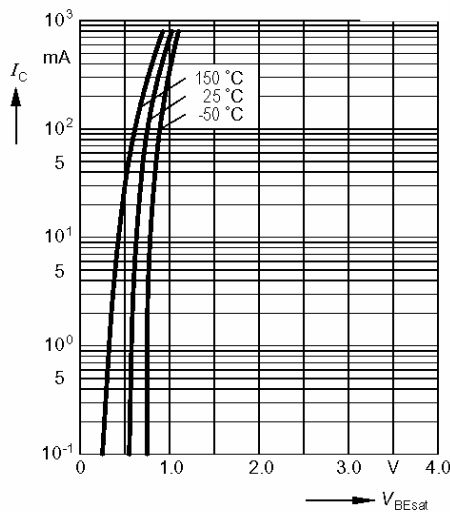
**Transition frequency  $f_T = f(I_C)$**

$V_{CE} = 5V$



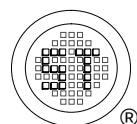
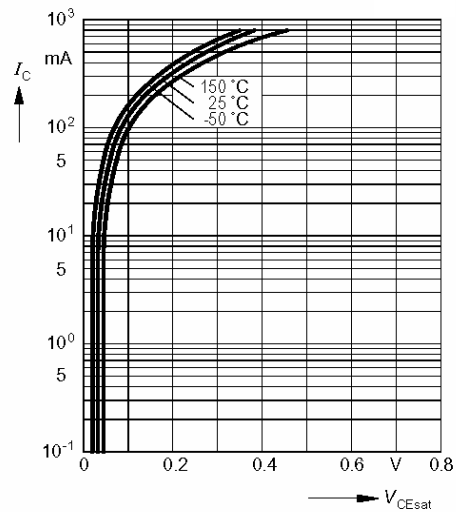
**Base-emitter saturation voltage**

$I_C = f(V_{BEsat}), h_{FE} = 10$



**Collector-emitter saturation voltage**

$I_C = f(V_{CEsat}), h_{FE} = 10$



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