



**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.

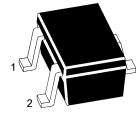
TEL: 852-2790 0314 FAX: 852-2790 0206

## BC817W / BC818W

### NPN 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.

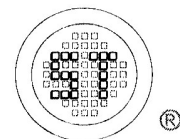


1.Base 2.Emitter 3.Collector  
SOT-323 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	50	V
		30	V
Collector Emitter Voltage	$V_{CEO}$	45	V
		25	V
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.



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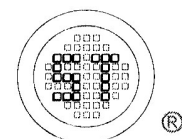
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**Characteristics at T<sub>amb</sub> = 25 °C**

Parameter	Symbol	Min.	Max.	Unit	
DC Current Gain at V <sub>CE</sub> = 1 V, I <sub>C</sub> = 100 mA	-16W	h <sub>FE</sub>	100	250	-
	-25W	h <sub>FE</sub>	160	400	-
	-40W	h <sub>FE</sub>	250	600	-
		h <sub>FE</sub>	40	-	-
at V <sub>CE</sub> = 1 V, I <sub>C</sub> = 500 mA					
Collector Base Breakdown Voltage at I <sub>C</sub> = 10 μA	BC817W	V <sub>(BR)CBO</sub>	50	-	V
	BC818W		30	-	
Collector Emitter Breakdown Voltage at I <sub>C</sub> = 10 mA	BC817W	V <sub>(BR)CEO</sub>	45	-	V
	BC818W		25	-	
Emitter Base Breakdown Voltage at I <sub>E</sub> = 10 μA	V <sub>(BR)EBO</sub>	5	-	V	
Collector Emitter Saturation Voltage at I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA	V <sub>CEsat</sub>	-	0.7	V	
Base Emitter Voltage at I <sub>C</sub> = 500 mA, V <sub>CE</sub> = 1 V	V <sub>BE</sub>	-	1.2	V	
Collector Cutoff Current at V <sub>CB</sub> = 20 V at V <sub>CB</sub> = 20 V, T <sub>J</sub> = 150 °C	I <sub>CBO</sub>	-	100	nA	
		-	5	μA	
Emitter Cutoff Current at V <sub>EB</sub> = 5 V	I <sub>EBO</sub>	-	100	nA	
Transition Frequency at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA, f = 100 MHz	f <sub>T</sub>	100	-	MHz	
Collector Capacitance at V <sub>CB</sub> = 10 V, f = 1 MHz	C <sub>c</sub>	-	5	pF	



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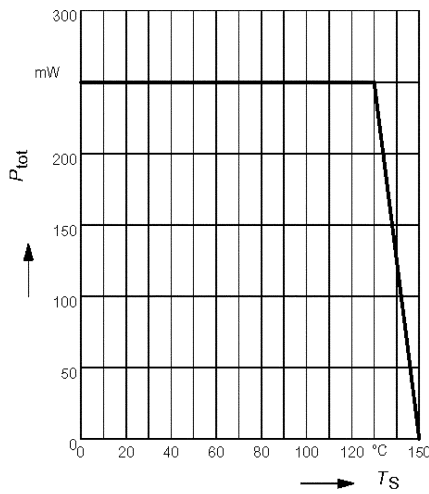
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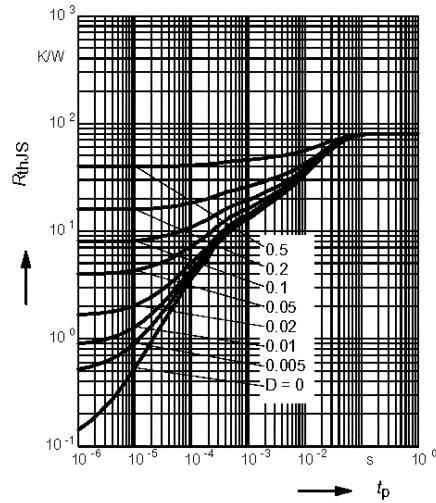
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**Total power dissipation  $P_{tot} = f(T_S)$**

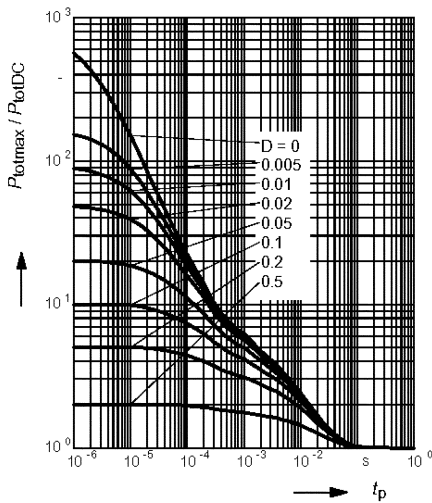


**Permissible Pulse Load  $R_{thJS} = f(t_p)$**



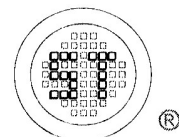
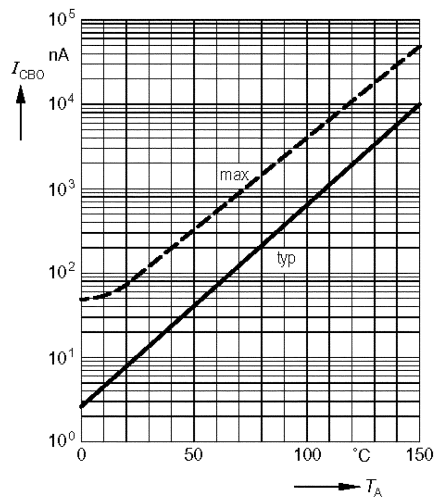
**Permissible Pulse Load**

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



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

$V_{CBO} = 25V$



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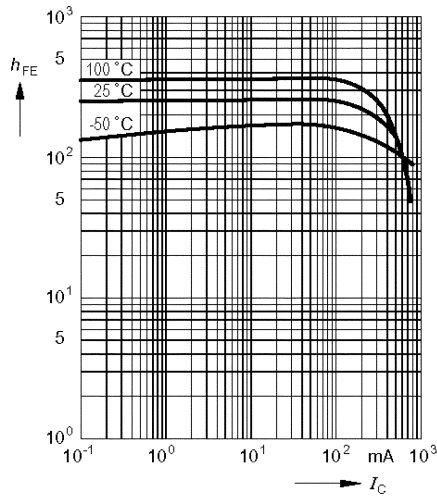
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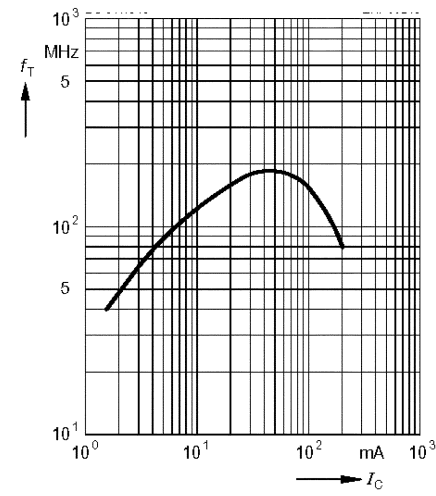
DC current gain  $h_{FE} = f(I_C)$

$V_{CE} = 1V$



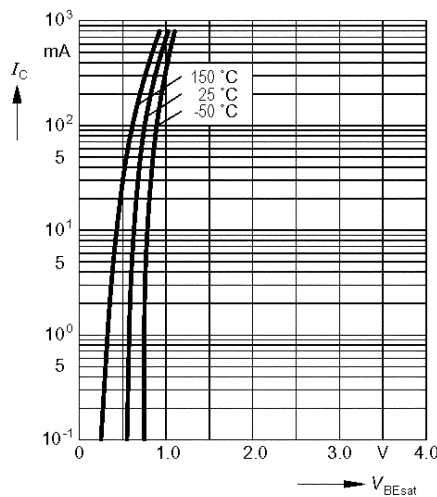
Transition frequency  $f_T = f(I_C)$

$V_{CE} = 5V$



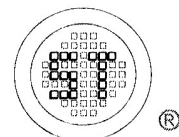
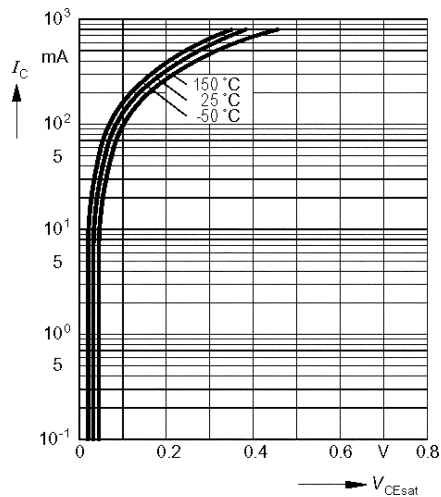
Base-emitter saturation voltage

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



Collector-emitter saturation voltage

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



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