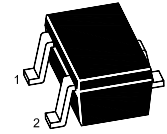


# BC817W / BC818W

## 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.

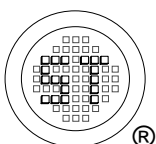


1.Base 2.Emitter 3.Collector  
SOT-323 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	50 30	V
Collector Emitter Voltage	$V_{CEO}$	45 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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Certificate No. 05103



ISO 14001:2004  
Certificate No. 7116



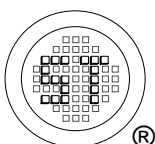
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Dated : 13/02/2006

# BC817W / BC818W

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

Parameter	Symbol	Min.	Max.	Unit		
DC Current Gain at $V_{CE} = 1\text{ V}$ , $I_C = 100\text{ mA}$	-16W	$h_{FE}$	100	250	-	
	-25W	$h_{FE}$	160	400	-	
	at $V_{CE} = 1\text{ V}$ , $I_C = 500\text{ mA}$	-40W	$h_{FE}$	250	600	-
			$h_{FE}$	40	-	-
Collector Base Breakdown Voltage at $I_C = 10\text{ }\mu\text{A}$	BC817W BC818W	$V_{(BR)CBO}$	50 30	- -	V	
Collector Emitter Breakdown Voltage at $I_C = 10\text{ mA}$	BC817W BC818W	$V_{(BR)CEO}$	45 25	- -	V	
Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$		$V_{(BR)EBO}$	5	-	V	
Collector Emitter Saturation Voltage at $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$		$V_{CEsat}$	-	0.7	V	
Base Emitter Voltage at $I_C = 500\text{ mA}$ , $V_{CE} = 1\text{ V}$		$V_{BE}$	-	1.2	V	
Collector Cutoff Current at $V_{CB} = 20\text{ V}$ at $V_{CB} = 20\text{ V}$ , $T_J = 150\text{ }^{\circ}\text{C}$		$I_{CBO}$	-	100	nA	
			-	5	$\mu\text{A}$	
Emitter Cutoff Current at $V_{EB} = 5\text{ V}$		$I_{EBO}$	-	100	nA	
Transition Frequency at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$ , $f = 100\text{ MHz}$		$f_T$	100	-	MHz	
Collector Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$		$C_c$	-	5	pF	



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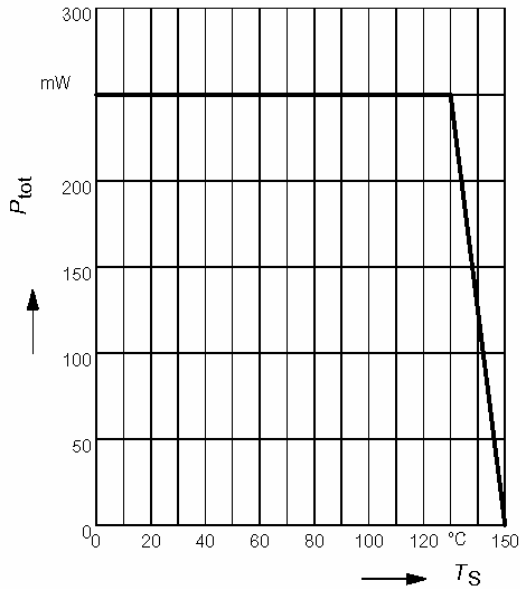


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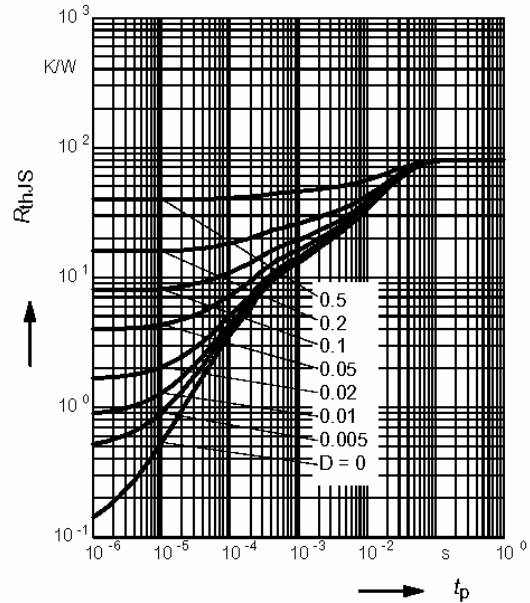
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# BC817W / BC818W

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

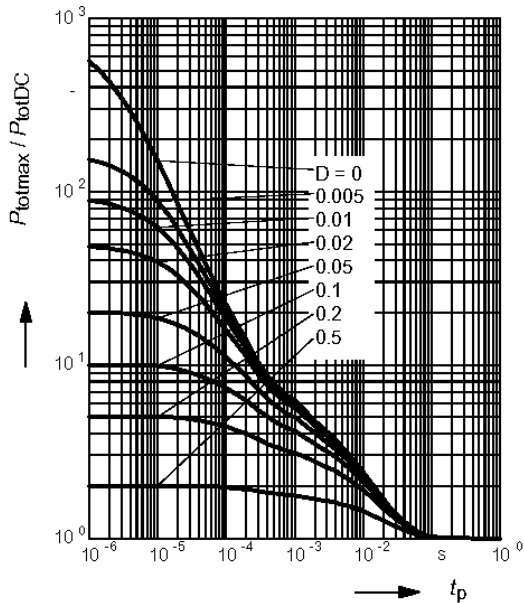


Permissible Pulse Load  $R_{thJS} = f(t_p)$



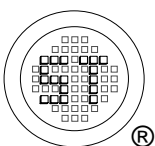
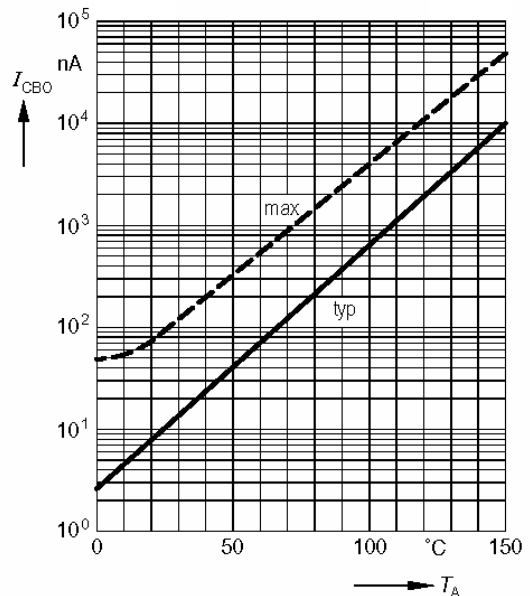
Permissible Pulse Load

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



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

$V_{CBO} = 25V$



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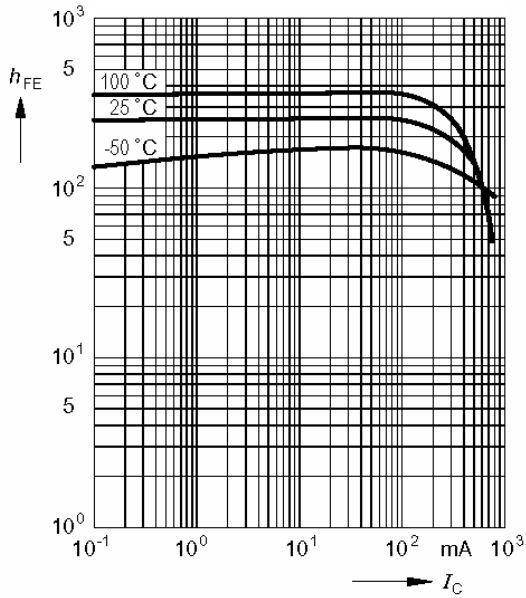


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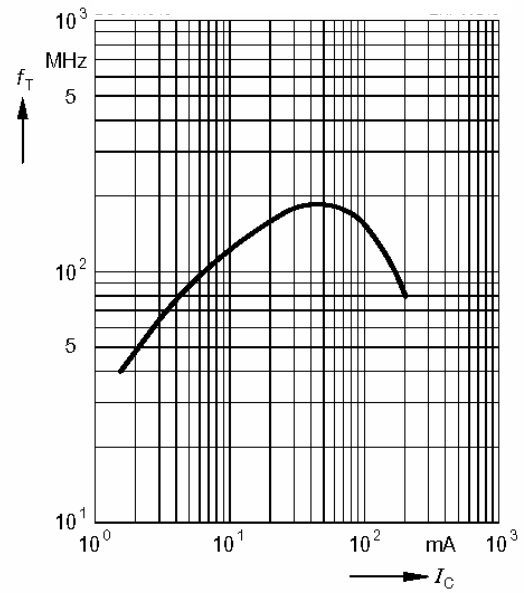
DC current gain  $h_{FE} = f(I_C)$

$V_{CE} = 1V$



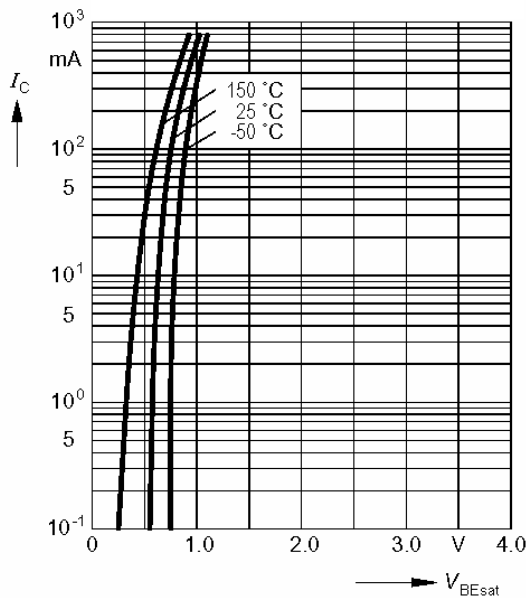
Transition frequency  $f_T = f(I_C)$

$V_{CE} = 5V$



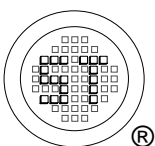
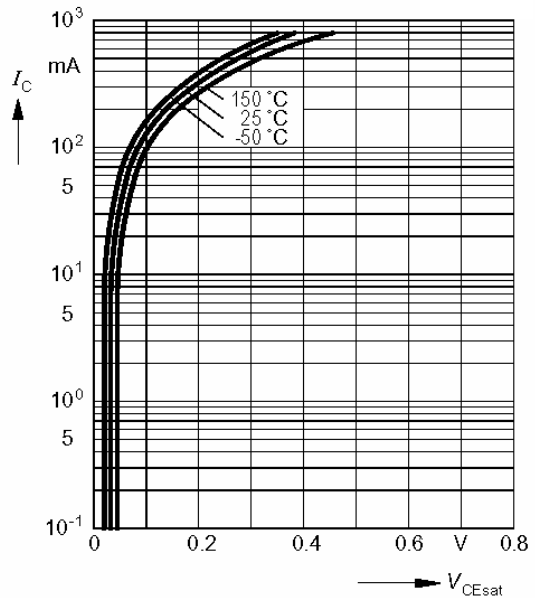
Base-emitter saturation voltage

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



Collector-emitter saturation voltage

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



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