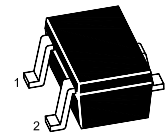


BC817W / BC818W

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.

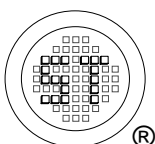


1.Base 2.Emitter 3.Collector
SOT-323 Plastic Package

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 ¹⁾	K/W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_s	-65 to +150	$^\circ\text{C}$

¹⁾ Transistor mounted on an FR4 printed-circuit board.



SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company
listed on the Hong Kong Stock Exchange, Stock Code: 724)

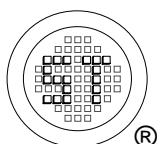


Dated : 13/02/2006

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	-
	-40W	h_{FE}	250	600	-
		h_{FE}	40	-	-
at $V_{CE} = 1\text{ V}$, $I_C = 500\text{ mA}$					
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	μA
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



SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002
Certificate No. 05103



ISO 14001:2004
Certificate No. 7116

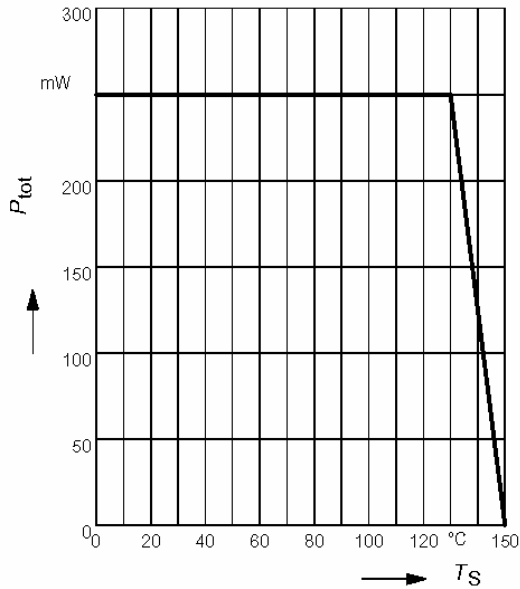


ISO 9001:2000
Certificate No. 0506098

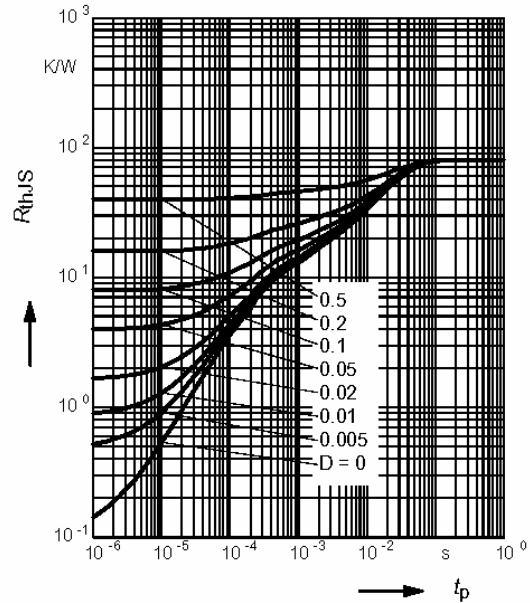
Dated : 13/02/2006

BC817W / BC818W

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

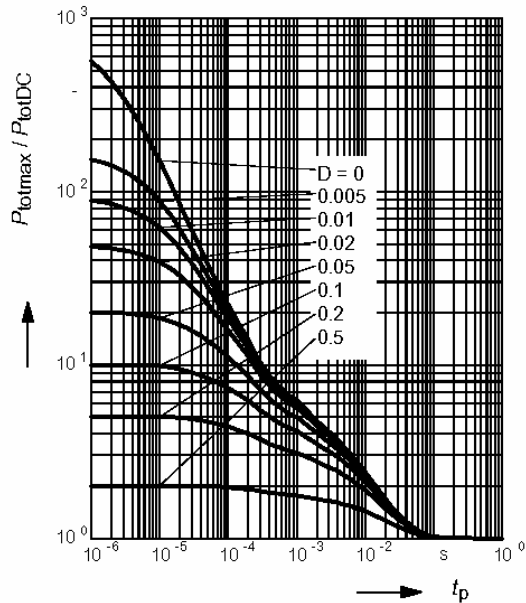


Permissible Pulse Load $R_{thJS} = f(t_p)$



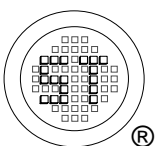
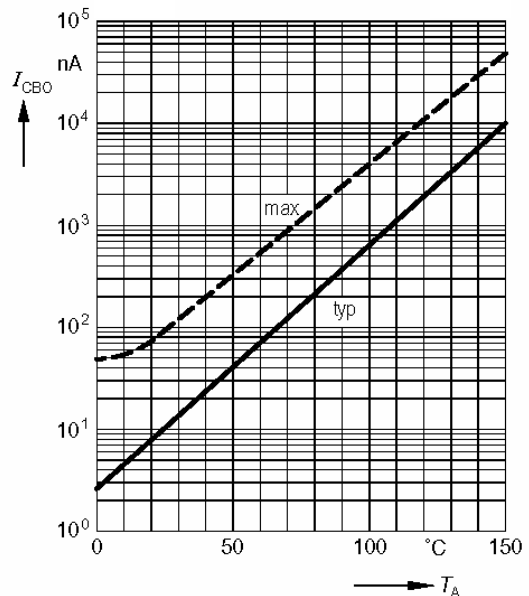
Permissible Pulse Load

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



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

$$V_{CBO} = 25V$$



SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002
Certificate No. 05103



ISO 14001:2004
Certificate No. 7116

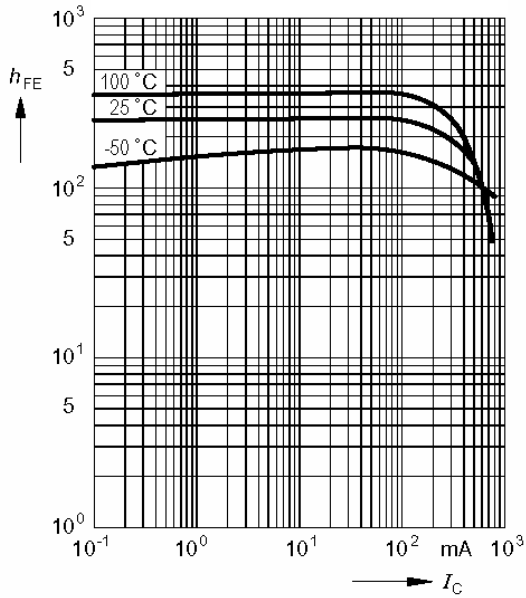


ISO 9001:2000
Certificate No. 0506098

BC817W / BC818W

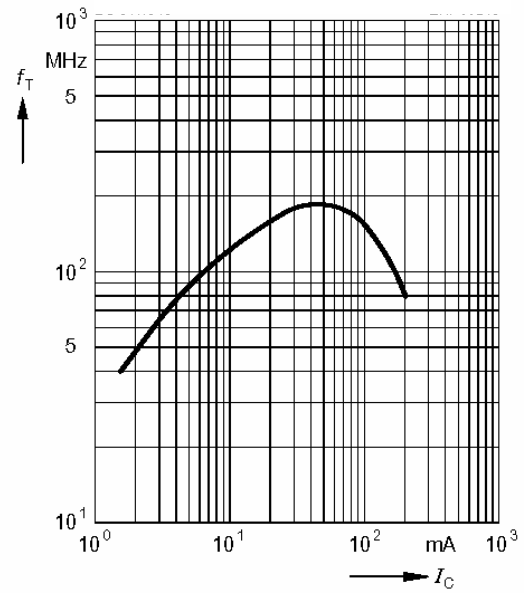
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 1V$



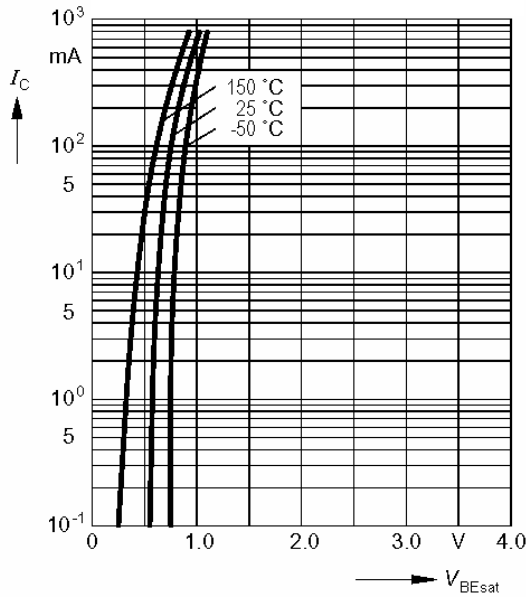
Transition frequency $f_T = f(I_C)$

$V_{CE} = 5V$



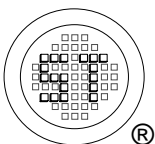
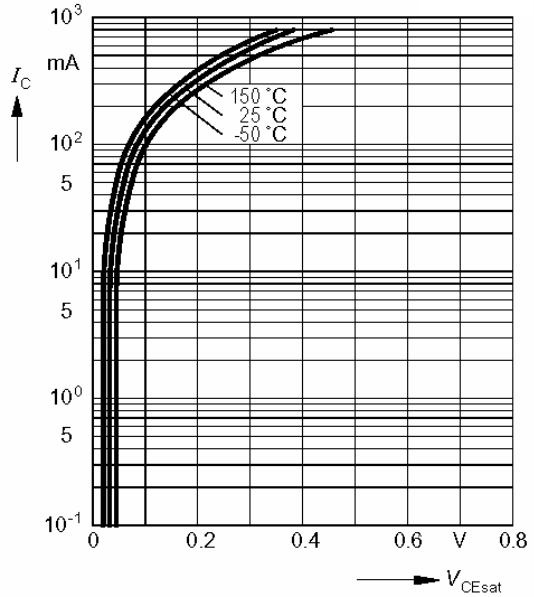
Base-emitter saturation voltage

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



Collector-emitter saturation voltage

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



SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002
Certificate No. 05103



ISO 14001:2004
Certificate No. 7116



ISO 9001:2000
Certificate No. 0506098

Dated : 13/02/2006