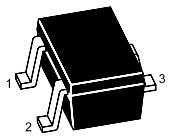
BC817W / BC818W

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 °C)

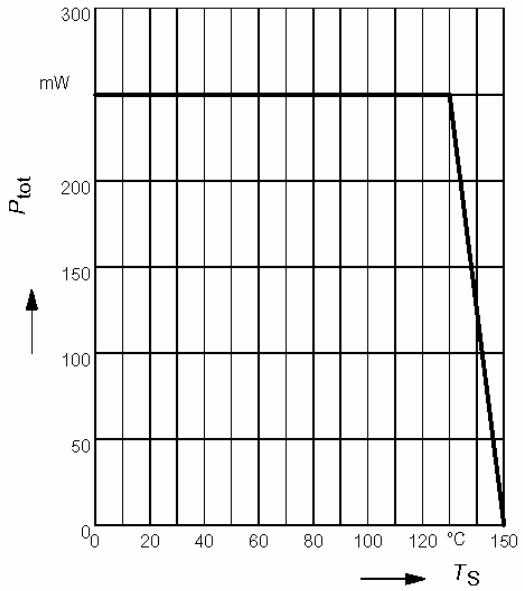
Parameter		Symbol	Value	Unit
Collector Base Voltage	BC817W BC818W	V_{CBO}	50 30	V
Collector Emitter Voltage	BC817W BC818W	V_{CEO}	45 25	V
Emitter Base Voltage		V_{EBO}	5	V
Collector Current		I_C	500	mA
Peak Collector Current		I_{CM}	1	A
Peak Base Current		I_{BM}	200	mA
Power Dissipation		P_{tot}	200	mW
Thermal Resistance , Junction to Ambient		$R_{\theta JA}$	625 [1)]	K/W
Junction Temperature		T_J	150	°C
Storage Temperature Range		T_s	-65 to +150	°C

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

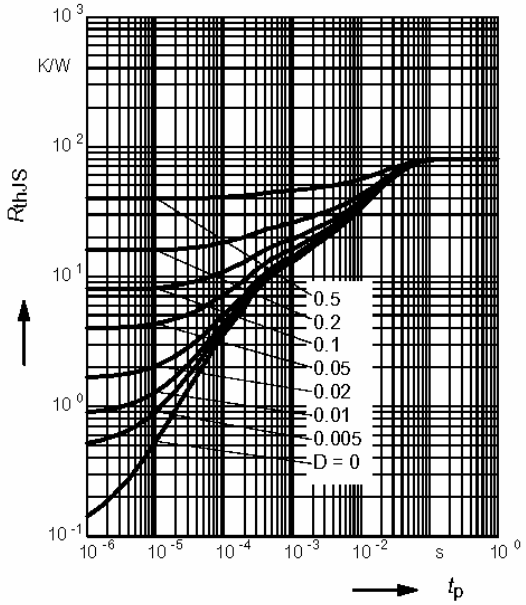
Characteristics at T_{amb} = 25 °C

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

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

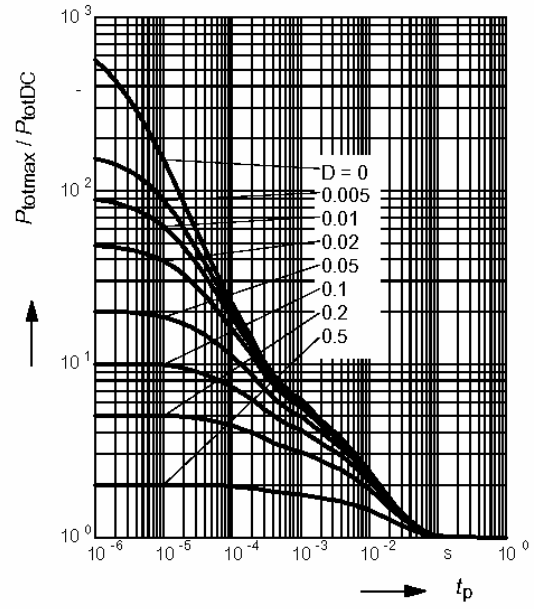


Permissible Pulse Load $R_{thJS} = f(t_p)$



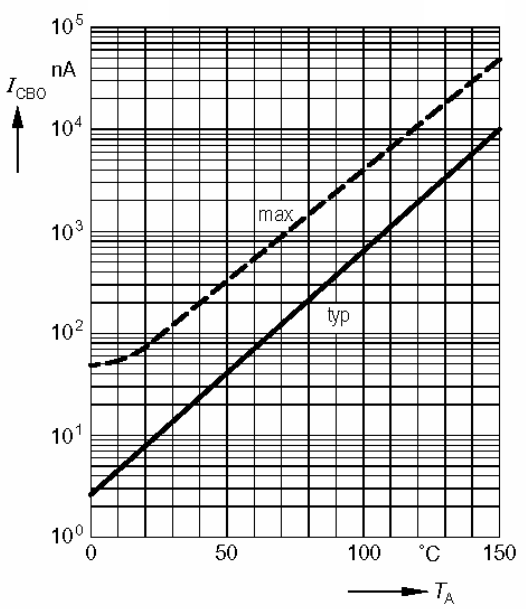
Permissible Pulse Load

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

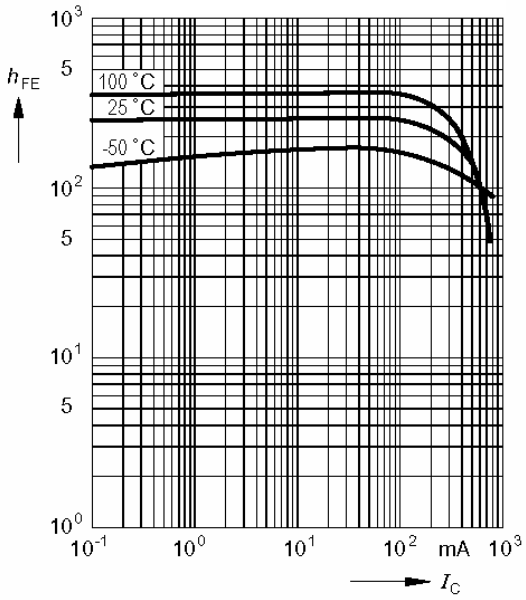


Collector cutoff current $I_{CBO} = f(T_A)$

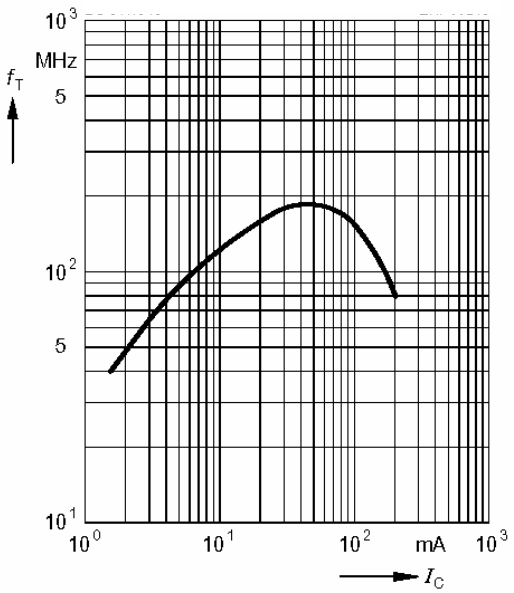
V_{CBO} = 25V



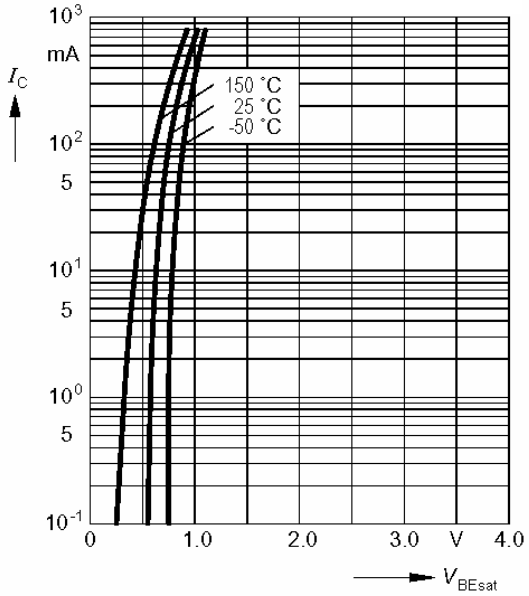
DC current gain $h_{FE} = f(I_C)$
V_{CE} = 1V



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