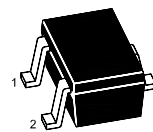


MMBT5140W

PNP Silicon Epitaxial Planar Transistor



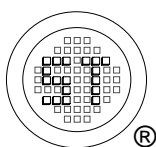
1.Base 2.Emitter 3.Collector
SOT-323 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	40	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	1	A
Peak Pulse Current	$-I_{CM}$	2	A
Power Dissipation	P_{tot}	350	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

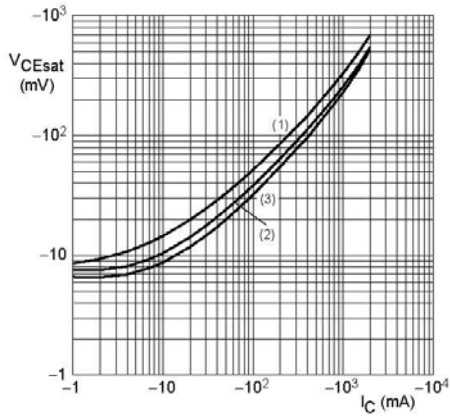
Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $-V_{CE} = 5\text{ V}$, $-I_C = 1\text{ mA}$	h_{FE}	300	-	-
at $-V_{CE} = 5\text{ V}$, $-I_C = 100\text{ mA}$	h_{FE}	300	800	-
at $-V_{CE} = 5\text{ V}$, $-I_C = 500\text{ mA}$	h_{FE}	250	-	-
at $-V_{CE} = 5\text{ V}$, $-I_C = 1\text{ A}$	h_{FE}	160	-	-
Collector Base Cutoff Current at $-V_{CB} = 40\text{ V}$	$-I_{CBO}$	-	100	nA
Collector Emitter Cutoff Current at $-V_{CE} = 30\text{ V}$	$-I_{CES}$	-	100	nA
Emitter Base Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	100	nA
Collector Emitter Saturation Voltage at $-I_C = 100\text{ mA}$, $-I_B = 1\text{ mA}$	$-V_{CE(sat)}$	-	0.2	V
at $-I_C = 500\text{ mA}$, $-I_B = 50\text{ mA}$		-	0.25	
at $-I_C = 1\text{ A}$, $-I_B = 100\text{ mA}$		-	0.5	
Base Emitter Saturation Voltage at $-I_C = 1\text{ A}$, $-I_B = 50\text{ mA}$	$-V_{BE(sat)}$	-	1.1	V
Base Emitter Turn-on Voltage at $-I_C = 1\text{ A}$, $-V_{CE} = 5\text{ V}$	$-V_{BE(on)}$	-	1	V
Gain Bandwidth Product at $-V_{CE} = 10\text{ V}$, $-I_C = 50\text{ mA}$, $f = 100\text{ MHz}$	f_T	150	-	MHz
Collector Capacitance at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_c	-	12	pF



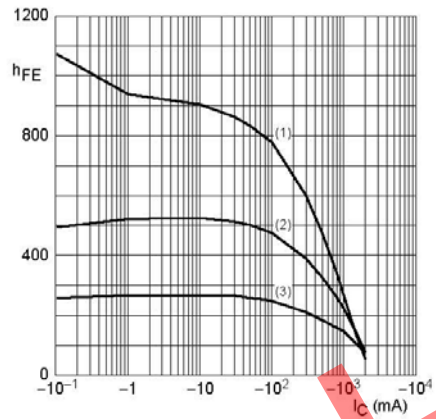
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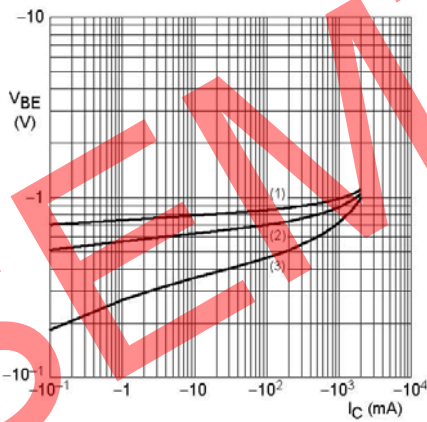
$I_C/I_B = 10$.
 (1) $T_{amb} = 150\text{ }^\circ\text{C}$.
 (2) $T_{amb} = 25\text{ }^\circ\text{C}$.
 (3) $T_{amb} = -55\text{ }^\circ\text{C}$.

Fig.1 Collector-emitter saturation voltage as a function of collector current; typical values.



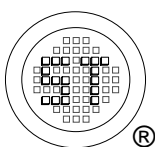
$V_{CE} = -5\text{ V}$.
 (1) $T_{amb} = 150\text{ }^\circ\text{C}$.
 (2) $T_{amb} = 25\text{ }^\circ\text{C}$.
 (3) $T_{amb} = -55\text{ }^\circ\text{C}$.

Fig.2 DC current gain as a function of collector current; typical values.



$V_{CE} = -5\text{ V}$.
 (1) $T_{amb} = -55\text{ }^\circ\text{C}$.
 (2) $T_{amb} = 25\text{ }^\circ\text{C}$.
 (3) $T_{amb} = 150\text{ }^\circ\text{C}$.

Fig.3 Base-emitter voltage as a function of collector current; typical values.



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