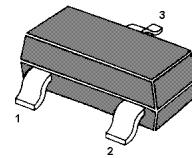


MMBT4350

NPN Silicon Epitaxial Planar Transistor



1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	50	V
Collector Emitter Voltage	V_{CEO}	50	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	3	A
Peak Collector Current	I_{CM}	5	A
Base Current	I_B	0.5	A
Power Dissipation	P_{tot}	300	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 65 to + 150	°C

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

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 2 \text{ V}$, $I_C = 100 \text{ mA}$	h_{FE}	300	-	-
at $V_{CE} = 2 \text{ V}$, $I_C = 500 \text{ mA}$	h_{FE}	300	-	-
at $V_{CE} = 2 \text{ V}$, $I_C = 1 \text{ A}$	h_{FE}	300	-	-
at $V_{CE} = 2 \text{ V}$, $I_C = 2 \text{ A}$	h_{FE}	200	-	-
at $V_{CE} = 2 \text{ V}$, $I_C = 3 \text{ A}$	h_{FE}	100	-	-
Collector Base Cutoff Current at $V_{CB} = 50 \text{ V}$	I_{CBO}	-	100	nA
Emitter Base Cutoff Current at $V_{EB} = 5 \text{ V}$	I_{EBO}	-	100	nA
Collector Emitter Saturation Voltage at $I_C = 500 \text{ mA}$, $I_B = 50 \text{ mA}$	$V_{CE(sat)}$	-	80	
at $I_C = 1 \text{ A}$, $I_B = 50 \text{ mA}$	$V_{CE(sat)}$	-	160	
at $I_C = 2 \text{ A}$, $I_B = 100 \text{ mA}$	$V_{CE(sat)}$	-	280	mV
at $I_C = 2 \text{ A}$, $I_B = 200 \text{ mA}$	$V_{CE(sat)}$	-	260	
at $I_C = 3 \text{ A}$, $I_B = 300 \text{ mA}$	$V_{CE(sat)}$	-	370	
Base Emitter Saturation Voltage at $I_C = 2 \text{ A}$, $I_B = 100 \text{ mA}$	$V_{BE(sat)}$	-	1.1	V
at $I_C = 3 \text{ A}$, $I_B = 300 \text{ mA}$	$V_{BE(sat)}$	-	1.2	
Base Emitter Turnon Voltage at $V_{CE} = 2 \text{ V}$, $I_C = 1 \text{ A}$	$V_{BE(on)}$	-	1.2	V
Transition Frequency at $V_{CE} = 5 \text{ V}$, $I_C = 100 \text{ mA}$, $f = 100 \text{ MHz}$	f_T	100	-	MHz
Output Capacitance at $V_{CB} = 10 \text{ V}$, $f = 1 \text{ MHz}$	C_{ob}	-	25	pF

TOP DYNAMIC

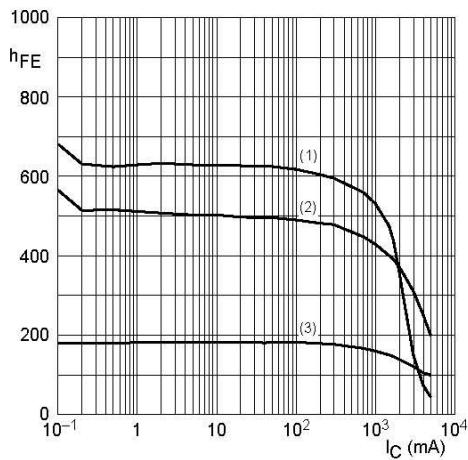


ISO14001 : 2004 ISO 9001 : 2008 OHSAS 18001 : 2007 IECQ QC 080000

Certificate No. 121505007 Certificate No. 50114012 Certificate No. 0513150009 Certificate No. ESDMMI 1002

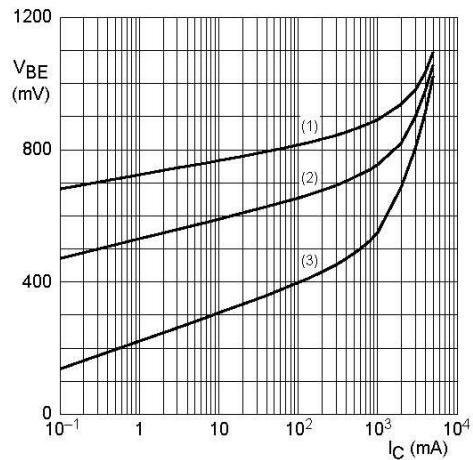
Dated: 13/12/2013 Rev: 01

MMBT4350



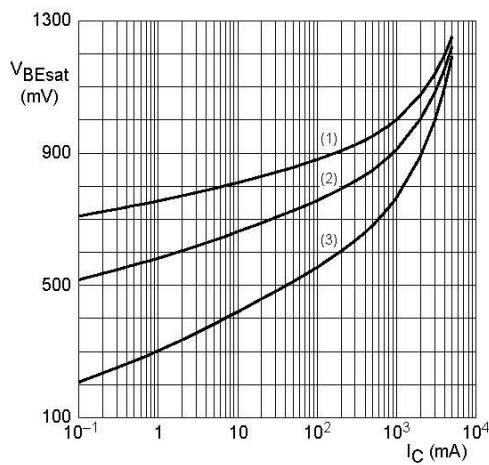
$V_{CE} = 2 \text{ V}$.
 (1) $T_{\text{amb}} = 150 \text{ }^{\circ}\text{C}$.
 (2) $T_{\text{amb}} = 25 \text{ }^{\circ}\text{C}$.
 (3) $T_{\text{amb}} = -55 \text{ }^{\circ}\text{C}$.

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



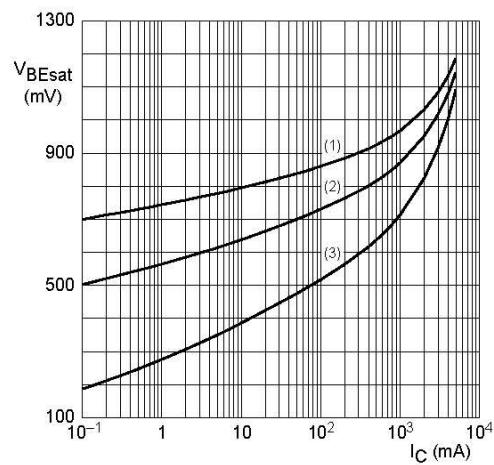
$V_{CE} = 2 \text{ V}$.
 (1) $T_{\text{amb}} = -55 \text{ }^{\circ}\text{C}$.
 (2) $T_{\text{amb}} = 25 \text{ }^{\circ}\text{C}$.
 (3) $T_{\text{amb}} = 150 \text{ }^{\circ}\text{C}$.

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



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

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



$I_C/I_B = 20$.
 (1) $T_{\text{amb}} = -55 \text{ }^{\circ}\text{C}$.
 (2) $T_{\text{amb}} = 25 \text{ }^{\circ}\text{C}$.
 (3) $T_{\text{amb}} = 150 \text{ }^{\circ}\text{C}$.

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

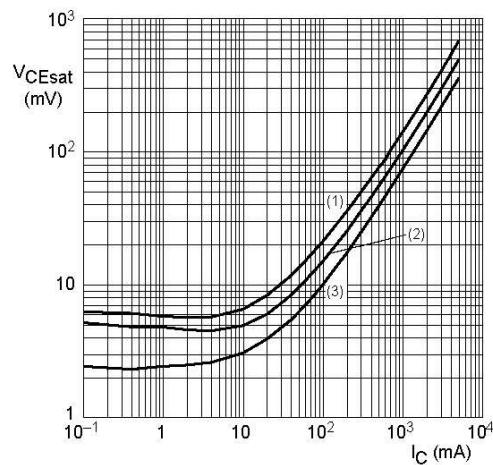
TOP DYNAMIC



ISO14001 : 2004 ISO 9001 : 2008 OHSAS 18001 : 2007 IECQ QC 080000 Certificate No. 121505007 Certificate No. 50114012 Certificate No. 0513150009 Certificate No. ESDMM01Y1002

Dated: 13/12/2013 Rev: 01

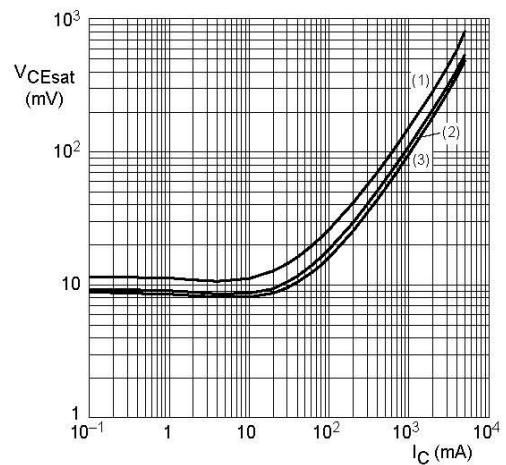
MMBT4350



$I_C/I_B = 10.$

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

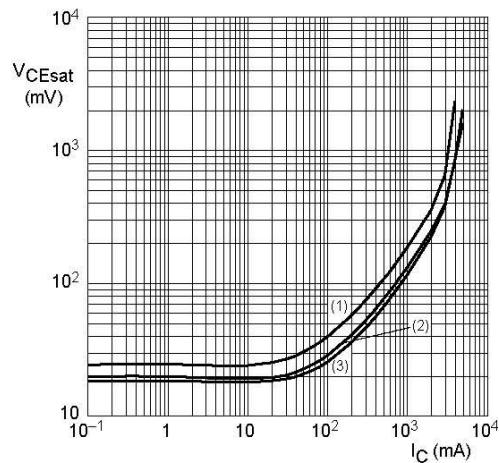
Collector-emitter saturation voltage as a function of collector current; typical values.



$I_C/I_B = 20.$

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

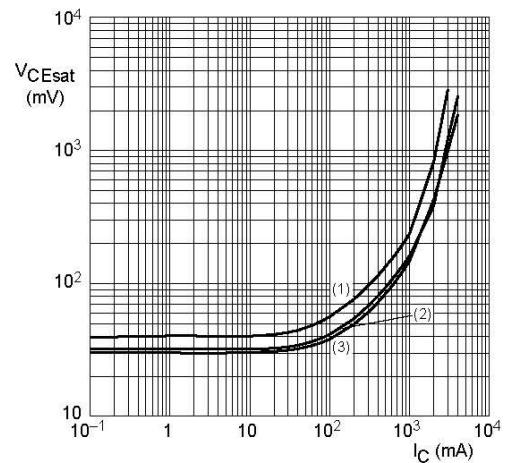
Collector-emitter saturation voltage as a function of collector current; typical values.



$I_C/I_B = 50.$

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

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



$I_C/I_B = 100.$

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

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

TOP DYNAMIC



ISO14001 : 2004 ISO 9001 : 2008 OHSAS 18001 : 2007 IECQ QC 080000
Certificate No. 121505007 Certificate No. 50114012 Certificate No. 0513150009 Certificate No. ESDHMDY11022

Dated: 13/12/2013 Rev: 01