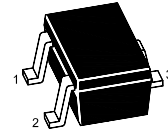


MMBT4401W

NPN Silicon General Purpose 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}	60	V
Collector Emitter Voltage	V_{CEO}	40	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	600	mA
Total Power Dissipation	P_{tot}	200	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 $V_{CE} = 1\text{ V}$, $I_C = 0.1\text{ mA}$	h_{FE}	20	-	-
at $V_{CE} = 1\text{ V}$, $I_C = 1\text{ mA}$	h_{FE}	40	-	-
at $V_{CE} = 1\text{ V}$, $I_C = 10\text{ mA}$	h_{FE}	80	-	-
at $V_{CE} = 1\text{ V}$, $I_C = 150\text{ mA}$	h_{FE}	100	300	-
at $V_{CE} = 2\text{ V}$, $I_C = 500\text{ mA}$	h_{FE}	40	-	-
Collector Cutoff Current at $V_{CB} = 35\text{ V}$	I_{CBO}	-	0.1	μA
Base Cutoff Current at $V_{EB} = 5\text{ V}$	I_{EBO}	-	0.1	μA
Collector Base Breakdown Voltage at $I_C = 0.1\text{ mA}$	$V_{(BR)CBO}$	60	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	40	-	V
Emitter Base Breakdown Voltage at $I_E = 0.1\text{ mA}$	$V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage at $I_C = 150\text{ mA}$, $I_B = 15\text{ mA}$	V_{CEsat}	-	0.4	V
at $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$	V_{CEsat}	-	0.75	V
Base Emitter Saturation Voltage at $I_C = 150\text{ mA}$, $I_B = 15\text{ mA}$	V_{BEsat}	-	0.95	V
at $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$	V_{BEsat}	-	1.2	V
Current Gain Bandwidth Product at $V_{CE} = 10\text{ V}$, $I_C = 20\text{ mA}$, $f = 100\text{ MHz}$	f_T	250	-	MHz
Collector Base Capacitance at $V_{CB} = 5\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$	C_{cb}	-	8	pF

MMBT4401W

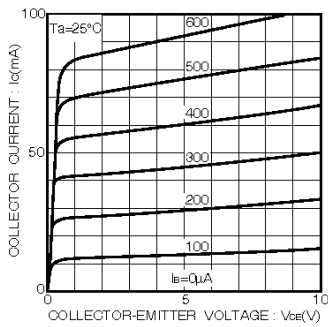


Fig.1 Grounded emitter output characteristics

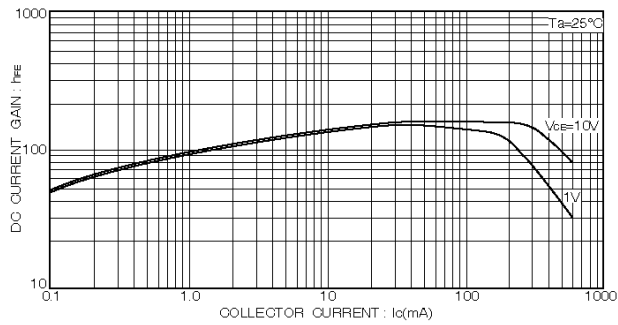


Fig.3 DC current gain vs. collector current(I)

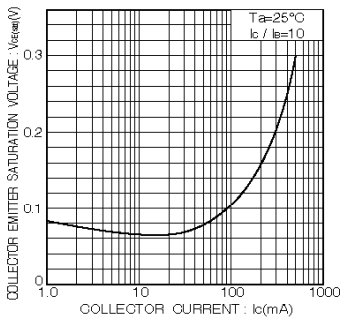


Fig.2 Collector-emitter saturation voltage vs. collector current

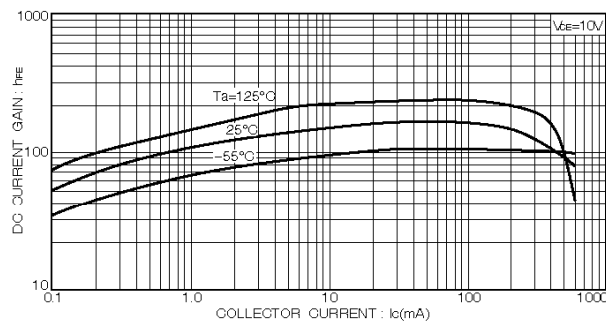


Fig.4 DC current gain vs. collector current(II)

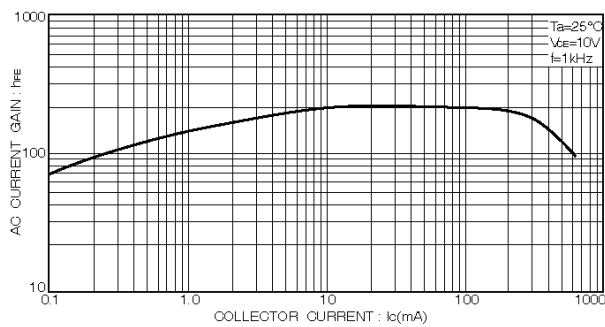


Fig.5 AC current gain vs. collector current

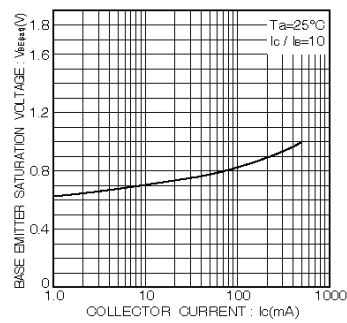


Fig.6 Base-emitter saturation voltage vs. collector current