MMBT4403

PNP Silicon General Purpose Transistor

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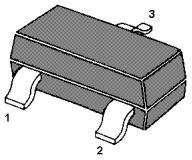


1. Base 2. Emitter 3. Collector
TO-236 Plastic Package

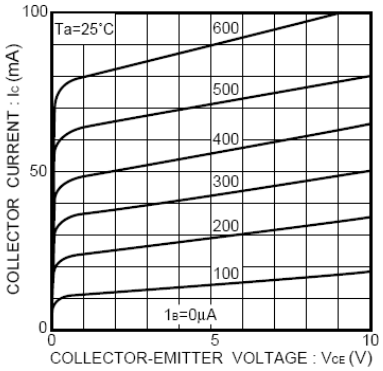
Absolute Maximum Ratings (T_a = 25 °C)

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 Continuous	$-I_C$	600	mA
Total Device Dissipation FR-5 Board [1)]	P_{tot}	300	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

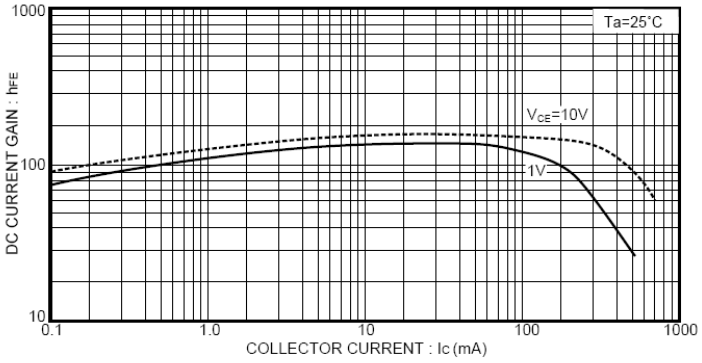
[1)] FR-5 = 1 X 0.75 X 0.062 in.

Characteristics at T_a = 25 °C

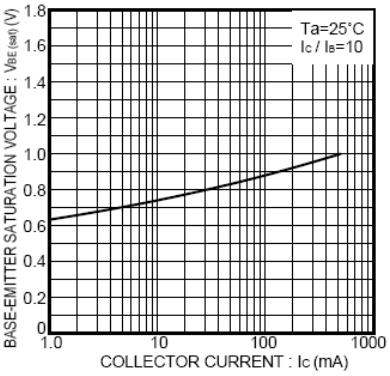
Parameter	Symbol	Min.	Max.	Unit
DC Current Gain				
at $-V_{CE}$ = 1 V, $-I_C$ = 0.1 mA	h_{FE}	30	-	-
at $-V_{CE}$ = 1 V, $-I_C$ = 1 mA	h_{FE}	60	-	-
at $-V_{CE}$ = 1 V, $-I_C$ = 10 mA	h_{FE}	100	-	-
at $-V_{CE}$ = 2 V, $-I_C$ = 150 mA	h_{FE}	100	300	-
at $-V_{CE}$ = 2 V, $-I_C$ = 500 mA	h_{FE}	20	-	-
Collector Base Cutoff Current at $-V_{CB}$ = 35 V	$-I_{CBO}$	-	0.1	µA
Emitter Base Cutoff Current at $-V_{EB}$ = 5 V	$-I_{EBO}$	-	0.1	µA
Collector Base Breakdown Voltage at $-I_C$ = 0.1 mA	$-V_{(BR)CBO}$	40	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 1 mA	$-V_{(BR)CEO}$	40	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 0.1 mA	$-V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage				
at $-I_C$ = 150 mA, $-I_B$ = 15 mA	$-V_{CE(sat)}$	-	0.4	V
at $-I_C$ = 500 mA, $-I_B$ = 50 mA	$-V_{CE(sat)}$	-	0.75	V
Base Emitter Saturation Voltage				
at $-I_C$ = 150 mA, $-I_B$ = 15 mA	$-V_{BE(sat)}$	0.75	0.95	V
at $-I_C$ = 500 mA, $-I_B$ = 50 mA	$-V_{BE(sat)}$	-	1.3	V
Current Gain Bandwidth Product at $-V_{CE}$ = 10 V, $-I_C$ = 20 mA, f = 100 MHz	f_T	200	-	MHz
Collector Base Capacitance at $-V_{CB}$ = 10 V, f = 1 MHz	C_{ob}	-	8.5	pF
Delay Time $-V_{CC}$ = 30 V, $-V_{EB}$ = 2 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA	t_d	-	15	ns
Rise Time $-V_{CC}$ = 30 V, $-V_{EB}$ = 2 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA	t_r	-	20	ns
Storage Time $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, $-I_{B1}$ = $-I_{B2}$ = 15 mA	t_s	-	225	ns
Fall Time $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, $-I_{B1}$ = $-I_{B2}$ = 15 mA	t_f	-	30	ns



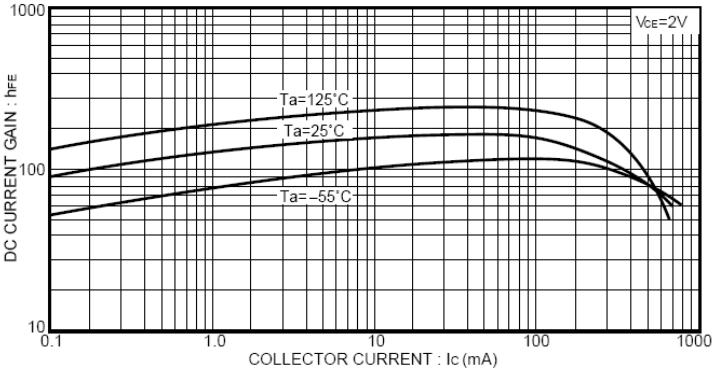
Grounded emitter output characteristics



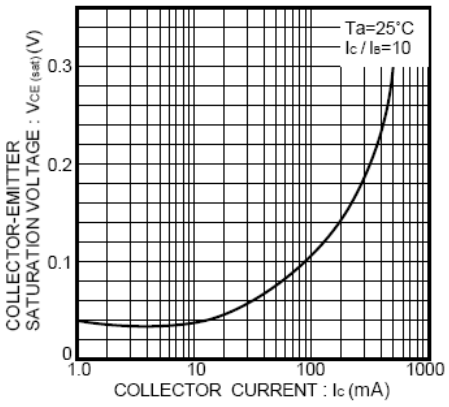
DC current gain vs. collector current (I)



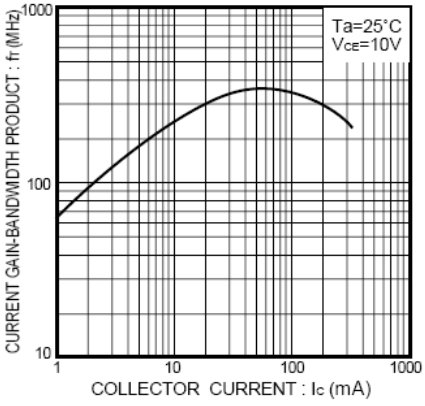
Base-emitter saturation voltage vs. collector current



DC current gain vs. collector current (II)



Collector-emitter saturation voltage vs. collector current



Gain bandwidth product vs. collector current