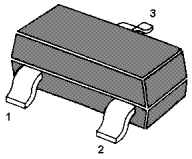
MMBTA44

NPN Silicon Epitaxial Planar Transistor

for high voltage switching and amplifier applications.



1. Base 2. Emitter 3. Collector

SOT-23 Plastic Package

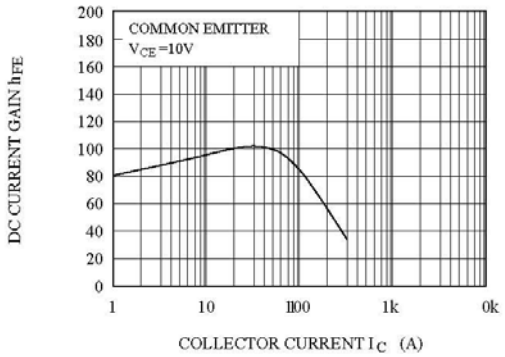
Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	500	V
Collector Emitter Voltage	V_{CEO}	400	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	300	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

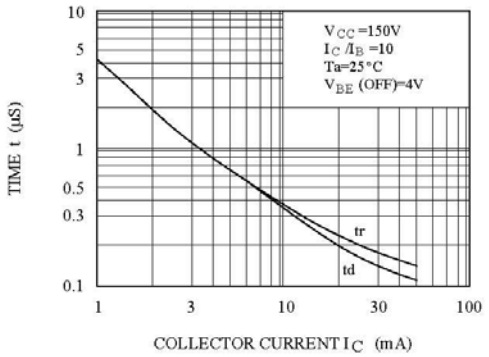
Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain				
at V_{CE} = 10 V, I_C = 1 mA	h_{FE}	40	-	-
at V_{CE} = 10 V, I_C = 10 mA	h_{FE}	50	200	-
at V_{CE} = 10 V, I_C = 50 mA	h_{FE}	45	-	-
at V_{CE} = 10 V, I_C = 100 mA	h_{FE}	40	-	-
Collector Base Cutoff Current at V_{CB} = 400 V	I_{CBO}	-	0.1	µA
Collector Emitter Cutoff Current at V_{CE} = 400 V	I_{CEO}	-	0.5	µA
Emitter Base Cutoff Current at V_{EB} = 4 V	I_{EBO}	-	0.1	µA
Collector Base Breakdown Voltage at I_C = 100 µA	$V_{(BR)CBO}$	500	-	V
Collector Emitter Breakdown Voltage at I_C = 1 mA	$V_{(BR)CEO}$	400	-	V
Emitter Base Breakdown Voltage at I_E = 100 µA	$V_{(BR)EBO}$	6	-	V
Collector Emitter Saturation Voltage				
at I_C = 1 mA, I_B = 0.1 mA	$V_{CE(sat)}$	-	0.4	V
at I_C = 10 mA, I_B = 1 mA	$V_{CE(sat)}$	-	0.5	V
at I_C = 50 mA, I_B = 5 mA	$V_{CE(sat)}$	-	0.75	V
Base Emitter Saturation Voltage at I_C = 10 mA, I_B = 1 mA	$V_{BE(sat)}$	-	0.75	V
Collector Output Capacitance at V_{CB} = 20 V, f = 1 MHz	C_{ob}	-	7	pF

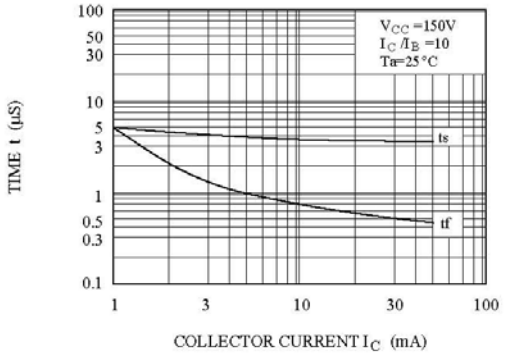
h_{FE} - I_C



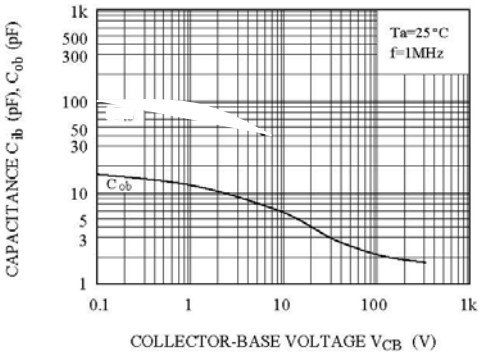
TURN-ON SWITCHING CHARACTERISTICS



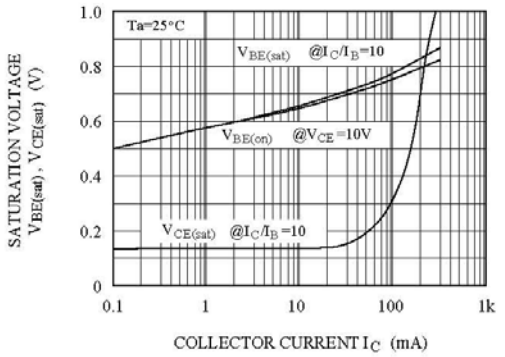
TURN-OFF SWITCHING CHARACTERISTICS



C_{ob} - V_{CB}



$V_{BE(sat)}$, $V_{CE(sat)}$ - I_C



COLLECTOR SATURATION REGION