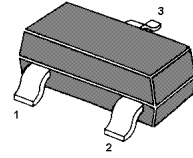


MMBT42W

NPN Silicon High Voltage Transistors

for high voltage switching and amplifier applications.



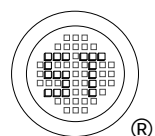
1. Base 2. Emitter 3. Collector
SOT-323 Plastic Package

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

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

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

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 10\text{ V}$, $I_C = 1\text{ mA}$ at $V_{CE} = 10\text{ V}$, $I_C = 10\text{ mA}$ at $V_{CE} = 10\text{ V}$, $I_C = 30\text{ mA}$	h_{FE} h_{FE} h_{FE}	25 80 40	- 200 -	- - -
Collector Base Cutoff Current at $V_{CB} = 200\text{ V}$	I_{CBO}	-	0.1	μA
Emitter Base Cutoff Current at $V_{EB} = 6\text{ V}$	I_{EBO}	-	0.1	μA
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	300	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	300	-	V
Emitter Base Breakdown Voltage at $I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	V
Collector Emitter Saturation Voltage at $I_C = 20\text{ mA}$, $I_B = 2\text{ mA}$	$V_{CE(sat)}$	-	0.5	V
Base Emitter Saturation Voltage at $I_C = 20\text{ mA}$, $I_B = 2\text{ mA}$	$V_{BE(sat)}$	-	0.9	V
Gain Bandwidth Product at $V_{CE} = 20\text{ V}$, $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	f_T	50	-	MHz
Collector Output Capacitance at $V_{CB} = 20\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	3	pF



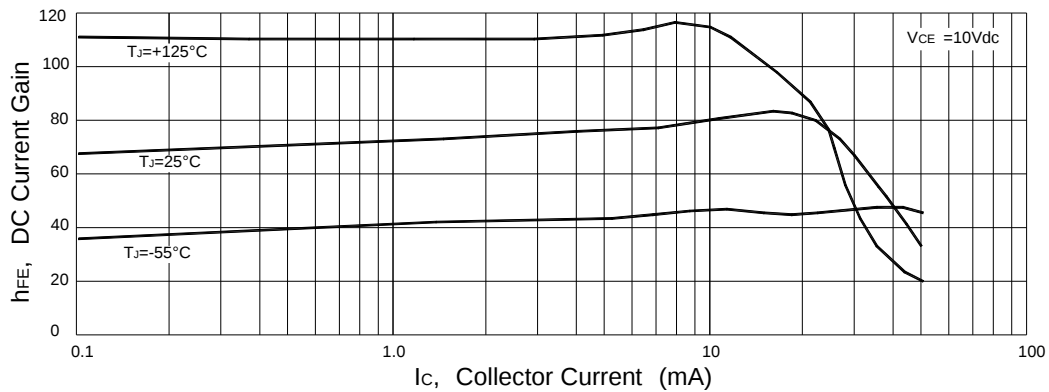


Figure 1. DC Current Gain

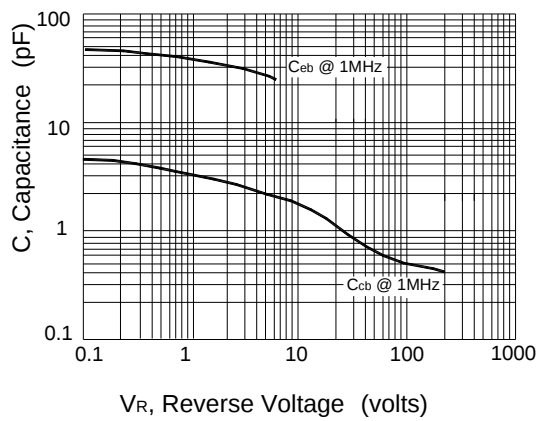


Figure 2. Capacitance

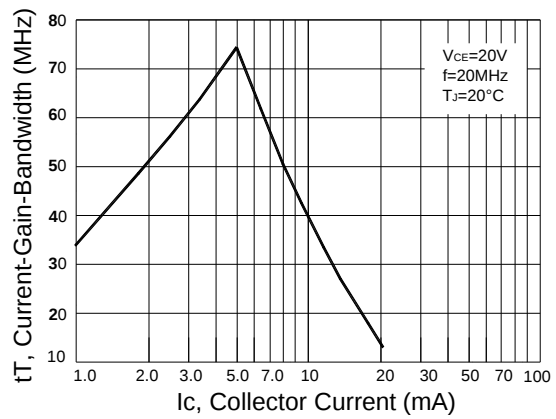


Figure 3. Current-Gain-Bandwidth

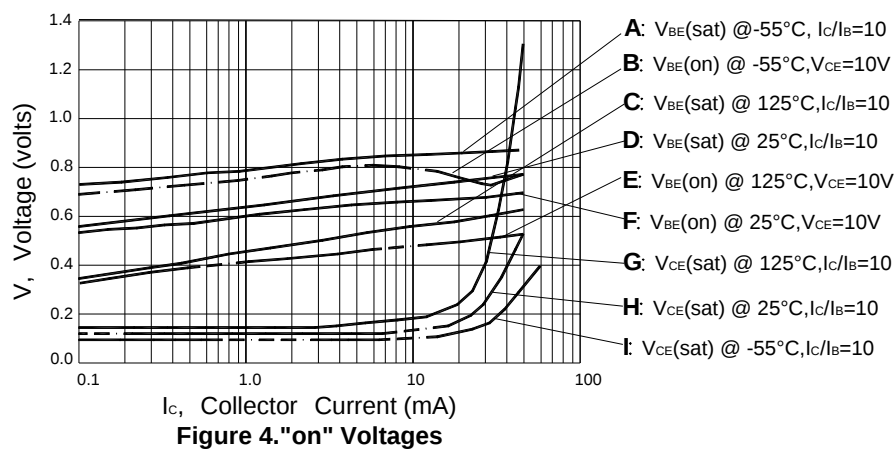


Figure 4. "on" Voltages

