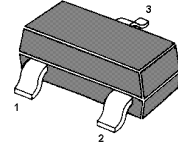


## MMBT5551

### NPN Silicon Epitaxial Planar Transistors

for high voltage amplifier applications.



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

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	180	V
Collector Emitter Voltage	$V_{CEO}$	160	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	600	mA
Power Dissipation	$P_{tot}$	350	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

#### Characteristics at $T_{amb}=25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}$ , $I_C = 1\text{ mA}$ at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$ at $V_{CE} = 5\text{ V}$ , $I_C = 50\text{ mA}$	$h_{FE}$ $h_{FE}$ $h_{FE}$	80 80 30	- 250 -	- - -
Collector Base Cutoff Current at $V_{CB} = 120\text{ V}$	$I_{CBO}$	-	50	nA
Emitter Base Cutoff Current at $V_{EB} = 4\text{ V}$	$I_{EBO}$	-	50	nA
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	180	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	160	-	V
Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	V
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$ at $I_C = 50\text{ mA}$ , $I_B = 5\text{ mA}$	$V_{CE(sat)}$	- -	0.15 0.2	V
Base Emitter Saturation Voltage at $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$ at $I_C = 50\text{ mA}$ , $I_B = 5\text{ mA}$	$V_{BE(sat)}$	- -	1 1	V
Gain Bandwidth Product at $V_{CE} = 10\text{ V}$ , $I_C = 10\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	100	300	MHz
Collector Base Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{cbo}$	-	6	pF

Fig. 1  $h_{FE} - I_C$

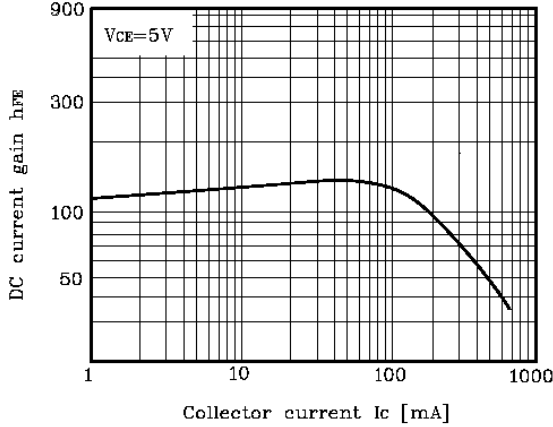


Fig. 2  $I_C - V_{BE}$

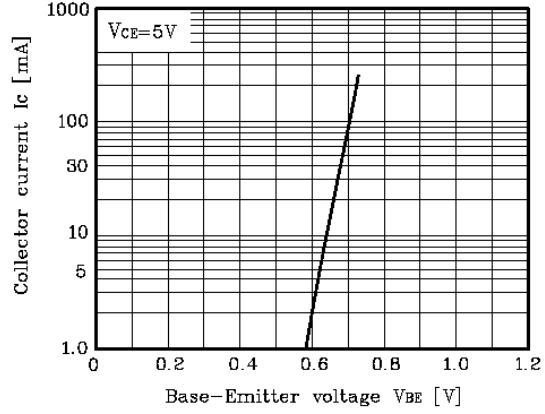


Fig. 3  $f_T - I_C$

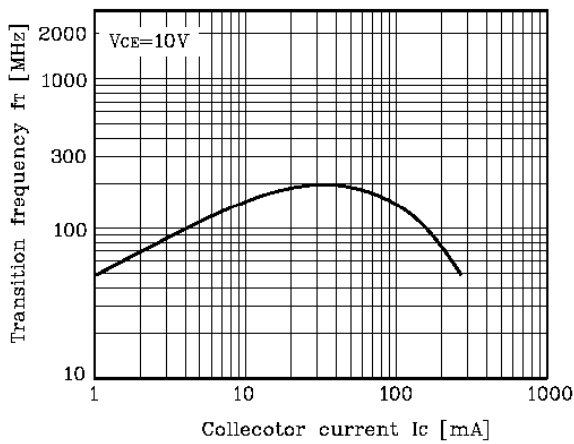


Fig. 4  $V_{CE(sat)}, V_{BE(sat)} - I_C$

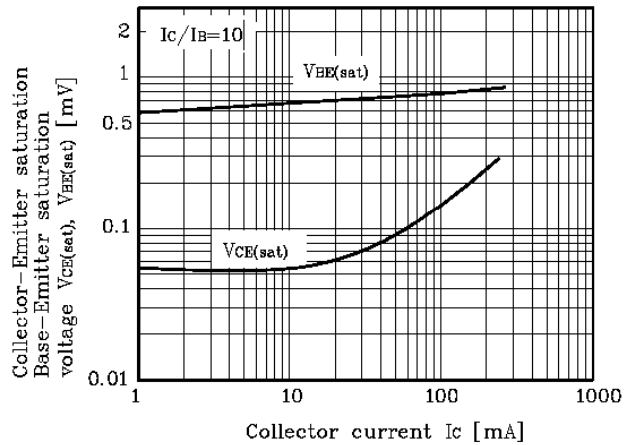


Fig. 5  $C_{ob} - V_{CB}$

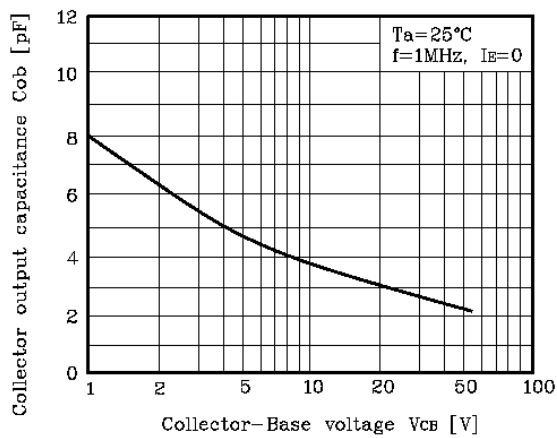


Fig. 6 Power Derating Curve

