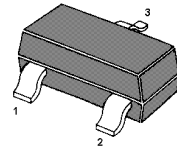


# MMBT5551

## NPN Silicon Epitaxial Planar Transistors

for high voltage amplifier applications.



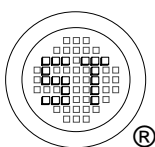
1. Base 2. Emitter 3. Collector  
SOT-23 Plastic Package

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

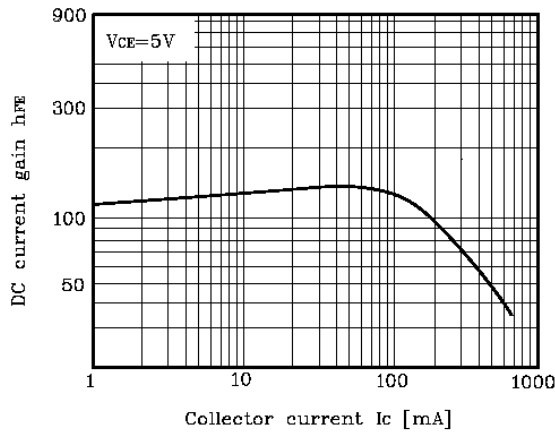
Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}$ , $I_C = 1\text{ mA}$	$h_{FE}$	80	-	-
at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$	$h_{FE}$	80	250	-
at $V_{CE} = 5\text{ V}$ , $I_C = 50\text{ mA}$	$h_{FE}$	30	-	-
Collector Base Cutoff Current at $V_{CB} = 120\text{ V}$	$I_{CBO}$	-	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 $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$	$V_{CE(sat)}$	-	0.15	V
at $I_C = 50\text{ mA}$ , $I_B = 5\text{ mA}$		-	0.2	
Base Emitter Saturation Voltage at $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$	$V_{BE(sat)}$	-	1	V
at $I_C = 50\text{ mA}$ , $I_B = 5\text{ mA}$		-	1	
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



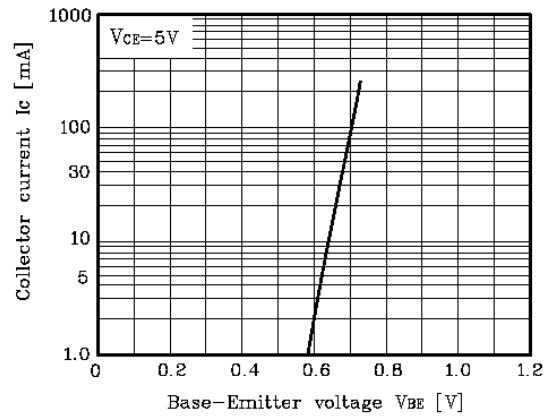
**SEMTECH ELECTRONICS LTD.**  
Subsidiary of Sino-Tech International (BVI) Limited



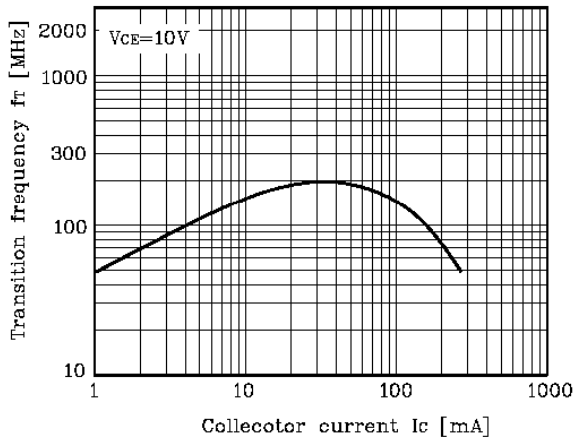
**Fig. 1  $h_{FE} - I_C$**



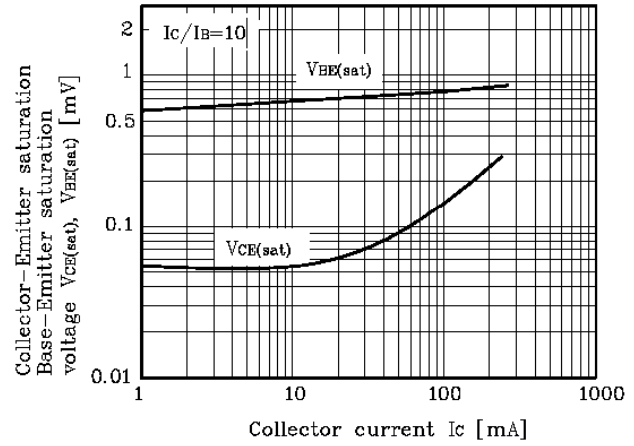
**Fig. 2  $I_C - V_{BE}$**



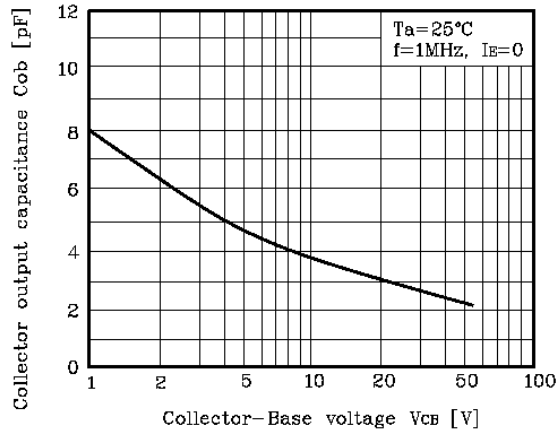
**Fig. 3  $f_T - I_C$**



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



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



**Fig. 6 Power Derating Curve**

