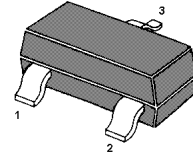


## MMBTSC2787 NPN Silicon Epitaxial Planar Transistor

for FM RF amp, mixer, osc, converter and IF amplifier.



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

### Features

- 1) Small output capacitance
- 2) Low noise figure

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

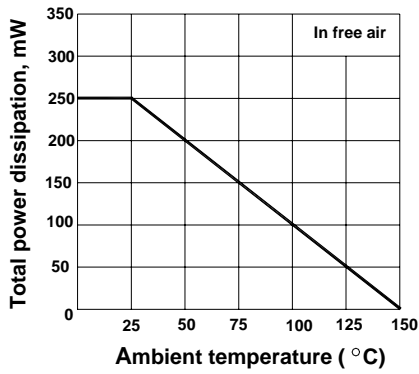
	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	50	V
Collector Emitter Voltage	$V_{CEO}$	30	V
Emitter Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	30	mA
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55 to +150	$^\circ\text{C}$

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

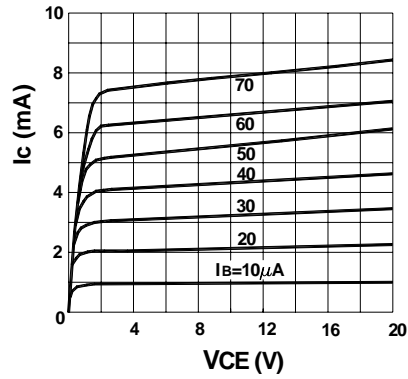
	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=6\text{V}$ , $I_C=1\text{mA}$					
Current Gain Group M	$h_{FE}$	40	-	80	-
L	$h_{FE}$	60	-	120	-
K	$h_{FE}$	90	-	300	-
Collector Cutoff Current at $V_{CB}=50\text{V}$	$I_{CBO}$	-	-	0.1	$\mu\text{A}$
Emitter Cutoff Current at $V_{EB}=5\text{V}$	$I_{EBO}$	-	-	0.1	$\mu\text{A}$
Base Emitter Voltage at $V_{CE}=6\text{V}$ , $I_C=1\text{mA}$	$V_{BE}$	0.65	-	0.75	V
Collector Saturation Voltage at $I_C=10\text{mA}$ , $I_B=1\text{mA}$	$V_{CE(sat)}$	-	-	0.3	V
Gain Bandwidth Product at $V_{CE}=6\text{V}$ , $I_E=-1\text{mA}$	$f_T$	150	250	-	MHz
Collector Base Time Constant at $V_{CB}=6\text{V}$ , $I_E=-10\text{mA}$ , $f=31.9\text{MHz}$	$C_C \cdot r_b'$	-	10	15	ps
Output Capacitance at $V_{CB}=6\text{V}$ , $f=1\text{MHz}$	$C_{OB}$	-	1.9	2.2	pF
Noise Figure at $V_{CE}=6\text{V}$ , $I_E=-1\text{mA}$ , $f=1\text{MHz}$ , $R_G=500\Omega$	NF	-	2	4	dB

## Typical Characteristics

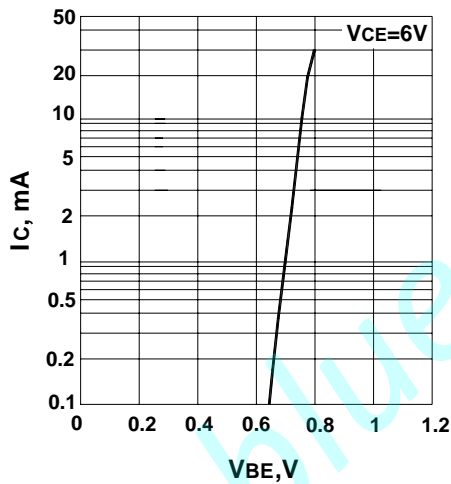
Total power dissipation vs. ambient temperature



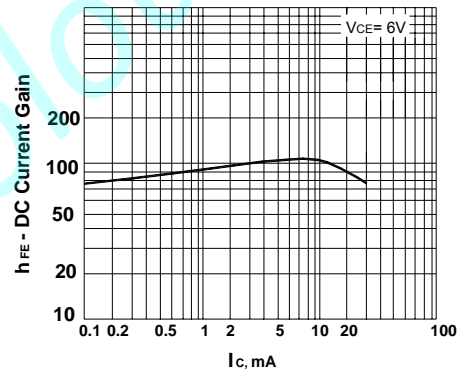
Collector current vs. collector emitter voltage



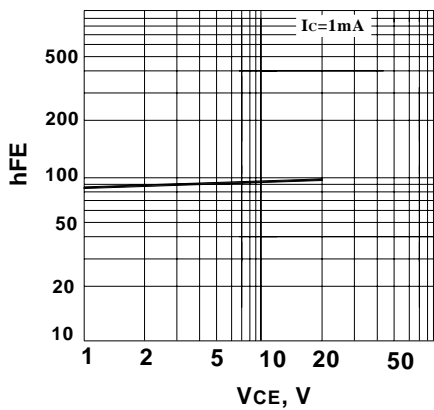
Collector current vs. base emitter voltage



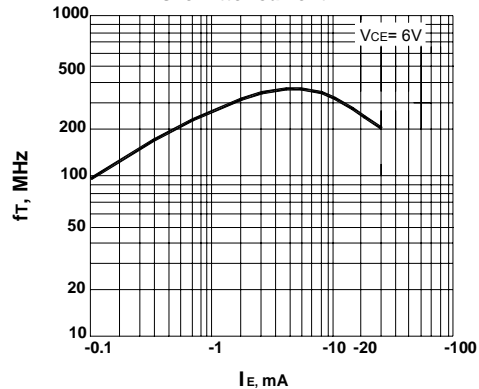
DC CURRENT GAIN vs. COLLECTOR CURRENT



DC current gain vs. collector emitter voltage

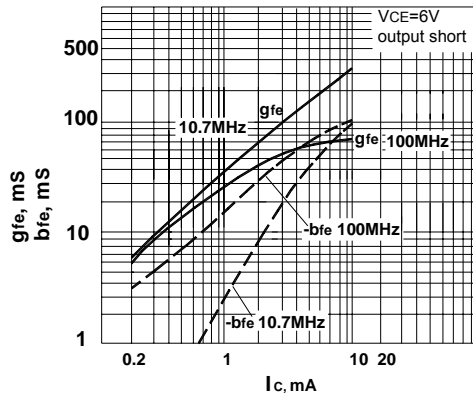


Gain bandwidth product vs. emitter current

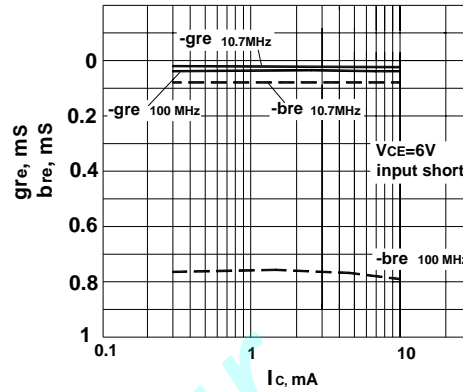


## Typical Characteristics

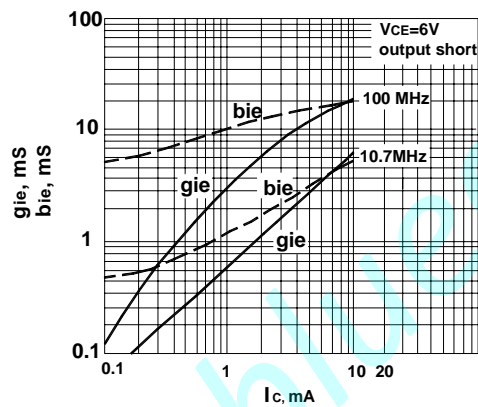
Forward transfer admittance vs. collector current



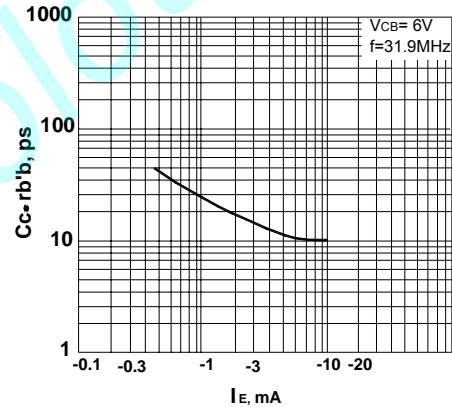
Reverse transfer admittance vs. collector current



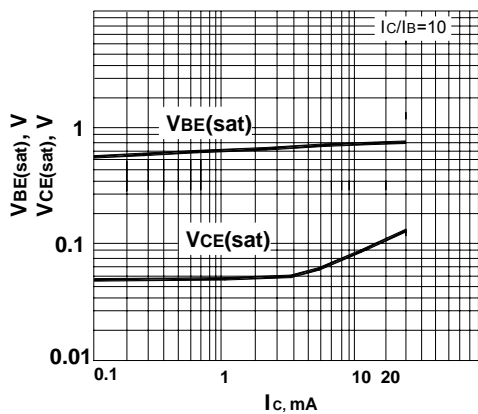
Input admittance vs. collector current



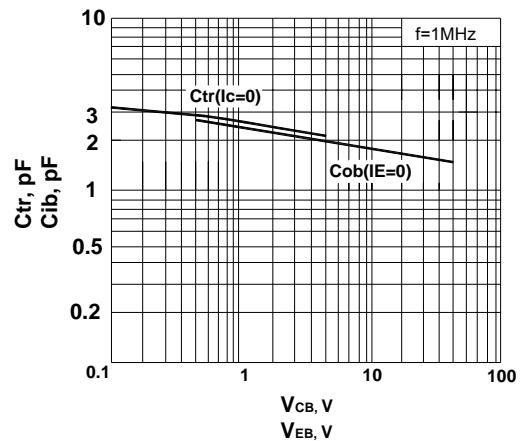
Collector base time constant vs. emitter current



Base collector saturation voltage vs. collector current

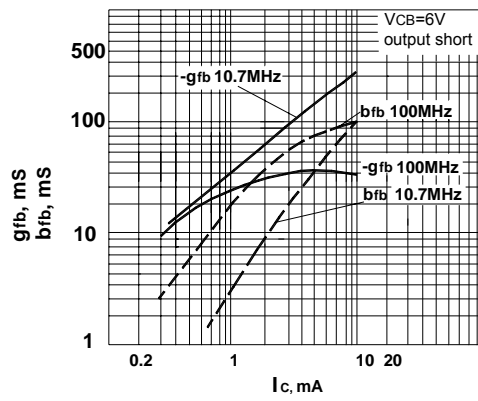


Input & output capacitance vs. reverse voltage

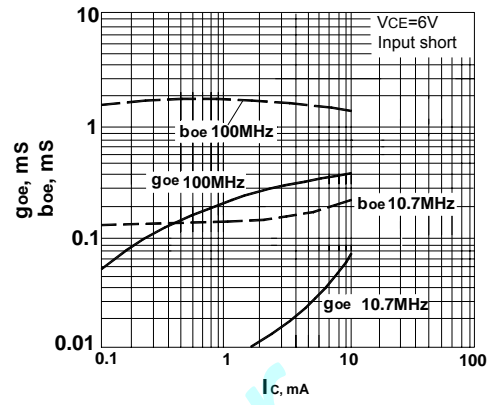


## Typical Characteristics

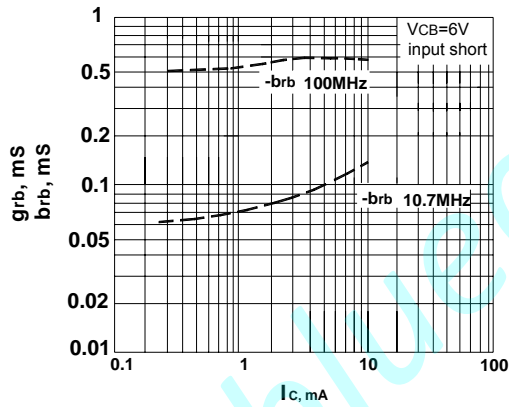
**Forward transfer amittance vs. collector current**



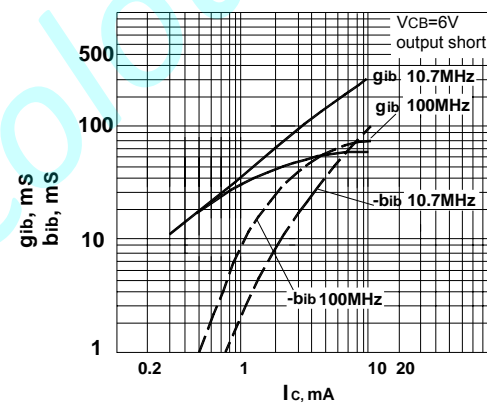
**Output amittance vs. collector current**



**Reverse transfer amittance vs. collector current**



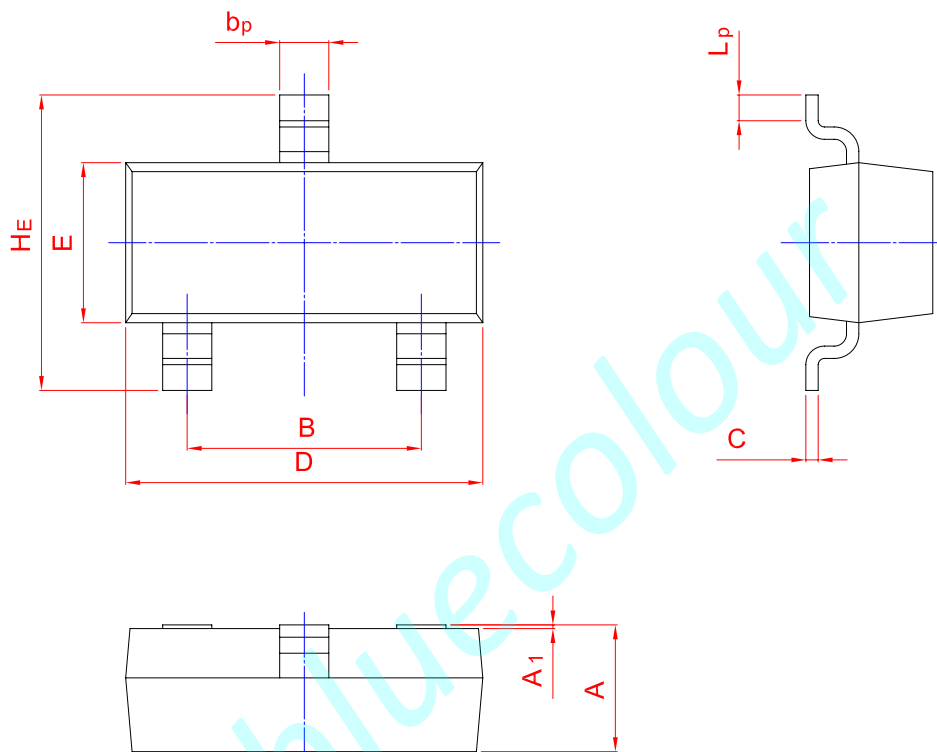
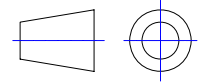
**Input amittance vs. collector current**



## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20