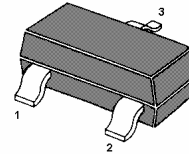


# MMBTSC2787

## NPN Silicon Epitaxial Planar Transistor

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

The transistor is subdivided into three groups M, L, and K according to its DC current gain.



1. Base 2. Emitter 3. Collector

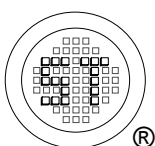
## Features

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

SOT-23 Plastic Package

## 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	$^\circ\text{C}$



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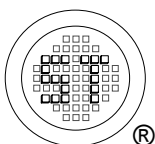


Dated : 20/10/2005

# MMBTSC2787

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

	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 $V_{CB}=6\text{V}$ , $I_E=-10\text{mA}$ , $f=31.9\text{MHz}$	$C_C \cdot r_{b'b}$	-	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



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Certificate No. 71116

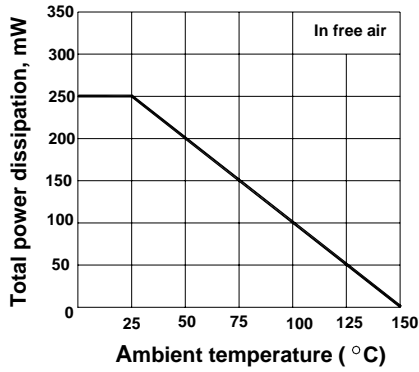


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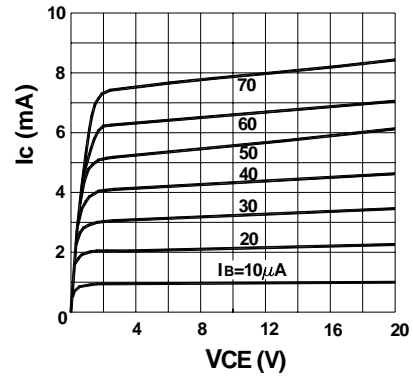
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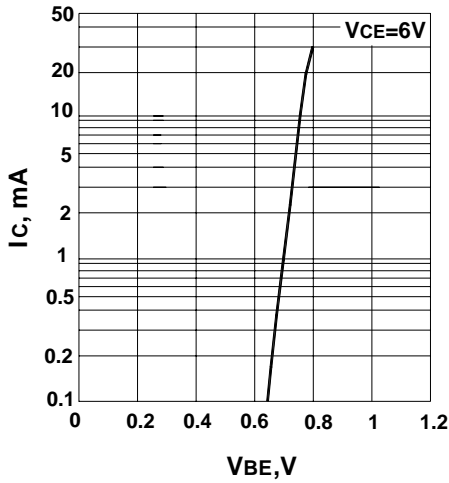
Total power dissipation vs. ambient temperature



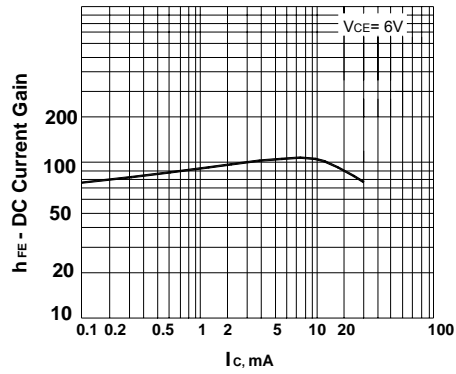
Collector current vs. collector emitter voltage



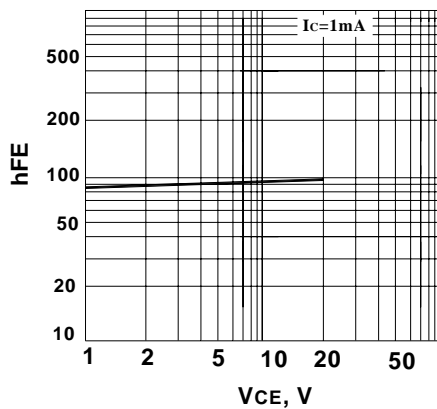
Collector current vs. base emitter voltage



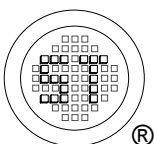
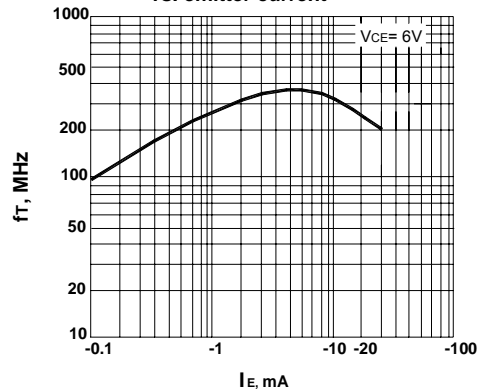
DC CURRENT GAIN vs. COLLECTOR CURRENT



DC current gain vs. collector emitter voltage



Gain bandwidth product vs. emitter current



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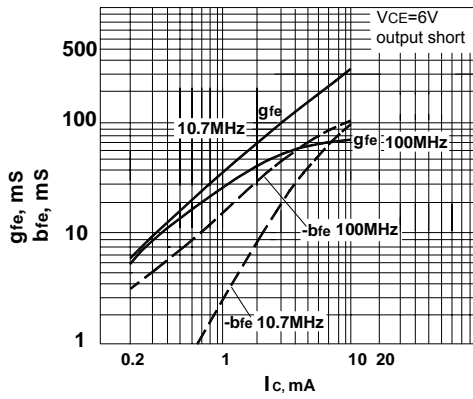


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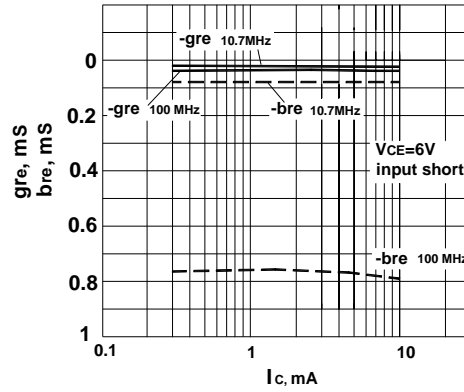


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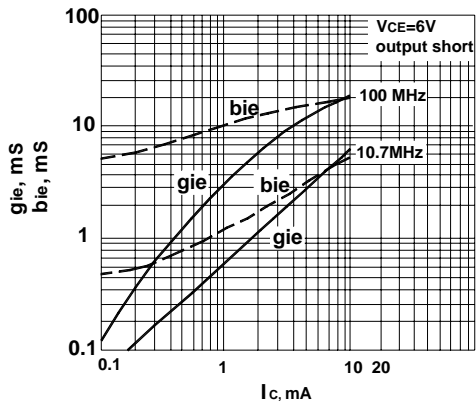
**Forward transfer admittance vs. collector current**



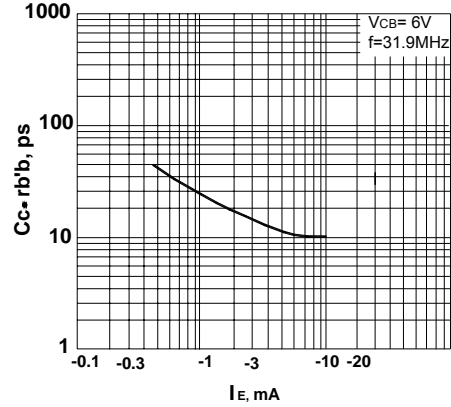
**Reverse transfer admittance vs. collector current**



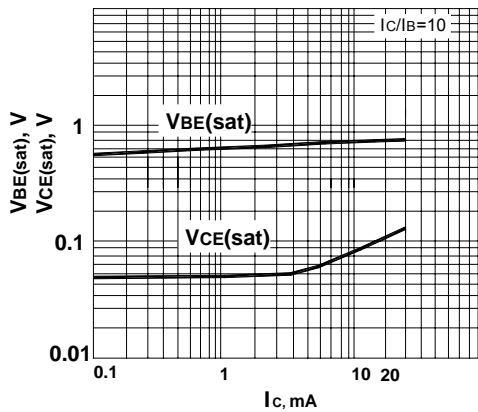
**Input admittance vs. collector current**



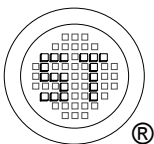
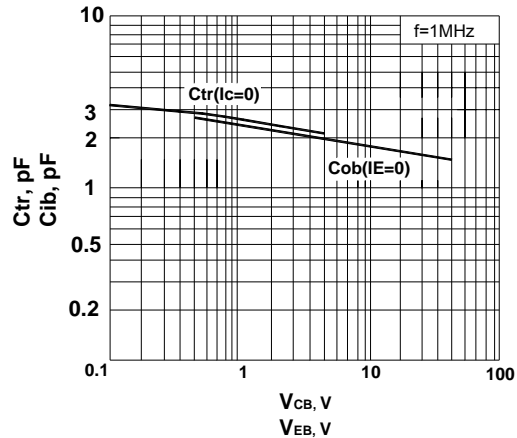
**Collector base time constant vs. emitter current**



**Base collector saturation voltage vs. collector current**



**Input & output capacitance vs. reverse voltage**



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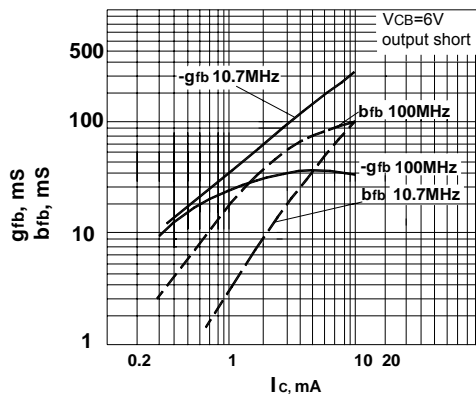
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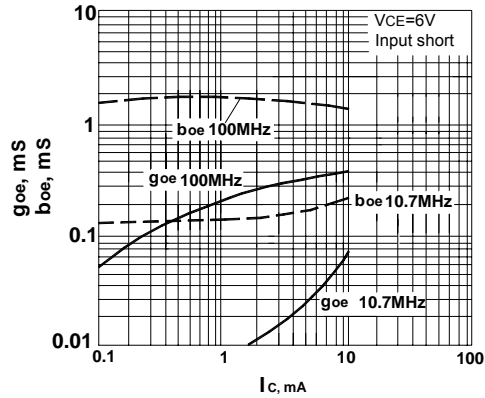
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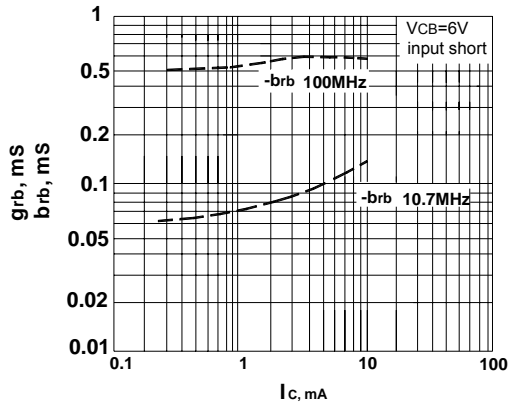
Forward transfer amittance vs. collector current



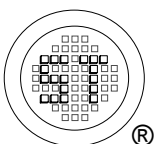
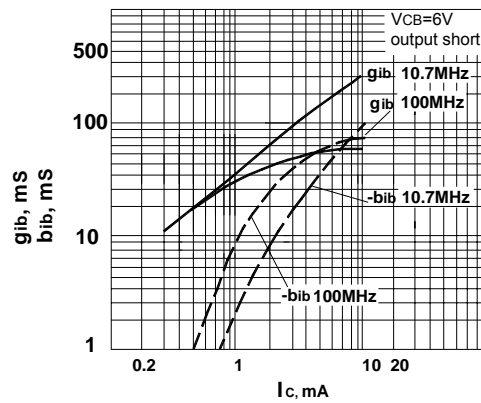
Output amittance vs. collector current



Reverse transfer amittance vs. collector current



Input amittance vs. collector current



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