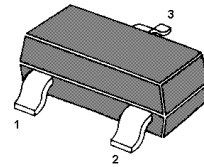


# MMBTSC5345

## NPN Silicon Epitaxial Planar Transistor

for RF amplifier.

The transistor is subdivided into three groups, R, O and Y, according to its DC current gain.



1.BASE 2.EMITTER 3.COLLECTOR

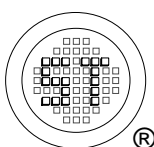
SOT-23 Plastic Package

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

	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	30	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	4	V
Collector Current	$I_C$	20	mA
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{Stg}$	-55 +150	$^\circ\text{C}$

### 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	R $h_{FE}$	40	-	80	-
	O $h_{FE}$	70	-	140	-
	Y $h_{FE}$	120	-	240	-
Collector Emitter Saturation Voltage at $I_C=10\text{mA}$ , $I_B=1\text{mA}$	$V_{CE(sat)}$	-	-	0.3	V
Collector Cutoff Current at $V_{CB}=30\text{V}$	$I_{CBO}$	-	-	0.5	$\mu\text{A}$
Emitter Cutoff Current at $V_{EB}=4\text{V}$	$I_{EBO}$	-	-	0.5	$\mu\text{A}$
Collector Base Breakdown Voltage at $I_C=10\mu\text{A}$	$V_{(BR)CBO}$	30			V
Collector Emitter Breakdown Voltage at $I_C=5\text{mA}$	$V_{(BR)CEO}$	20	-	-	V
Emitter Base Breakdown Voltage at $I_E=10\mu\text{A}$	$V_{(BR)EBO}$	4	-	-	V
Transition Frequency at $V_{CE}=6\text{V}$ , $I_E=-1\text{mA}$	$f_T$	-	550	-	MHz
Output Capacitance at $V_{CB}=6\text{V}$ , $f=1\text{MHz}$	$C_{OB}$	-	1.4		pF



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Dated : 25/10/2005

## Electrical Characteristic Curves

Fig. 1  $P_C-T_a$

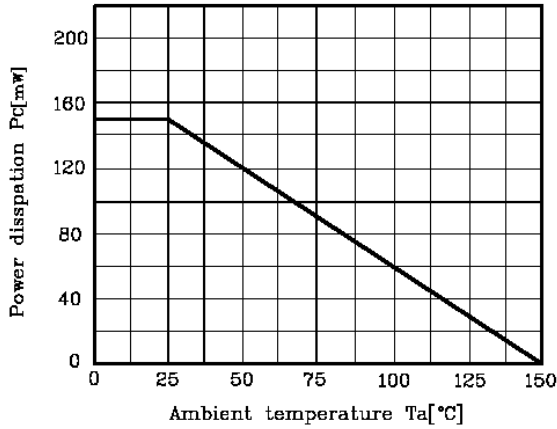


Fig. 2  $I_C-V_{CE}$

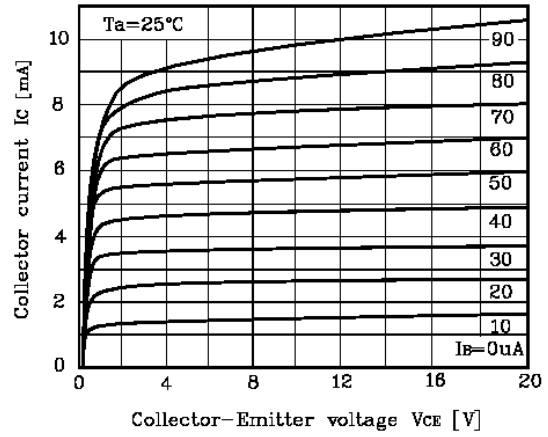


Fig. 3  $h_{FE}-I_C$

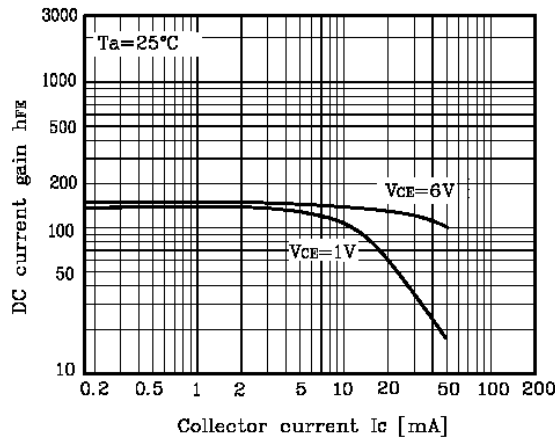


Fig. 4  $f_T-I_E$

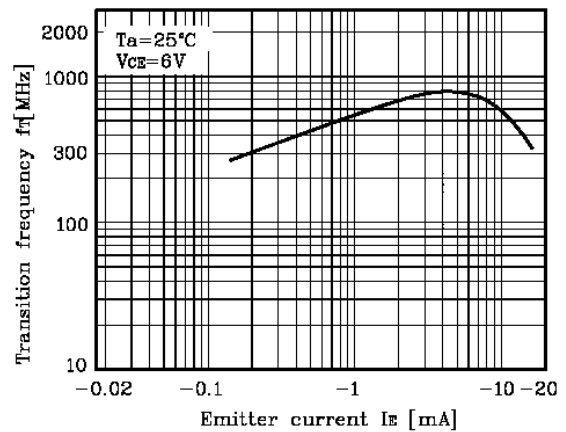


Fig. 5  $C_{ob}-V_{CB}, C_{ib}-V_{EB}$

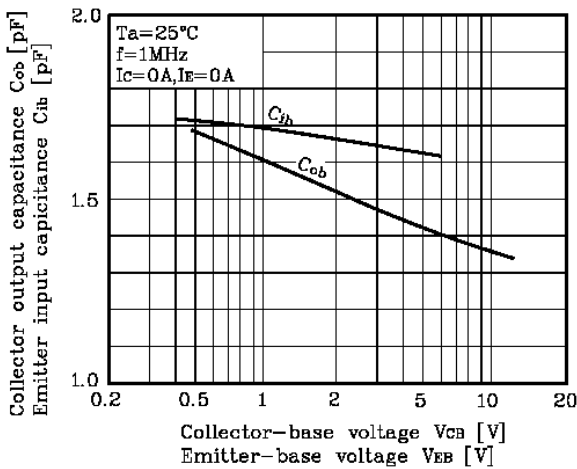
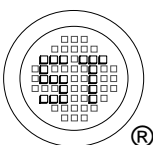
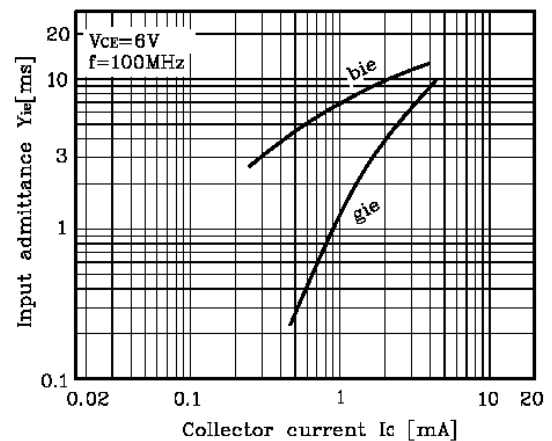


Fig. 6  $Y_{ie}-I_C$



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Electrical Characteristic Curves

Fig. 7  $I_C$ - $Y_{oe}$

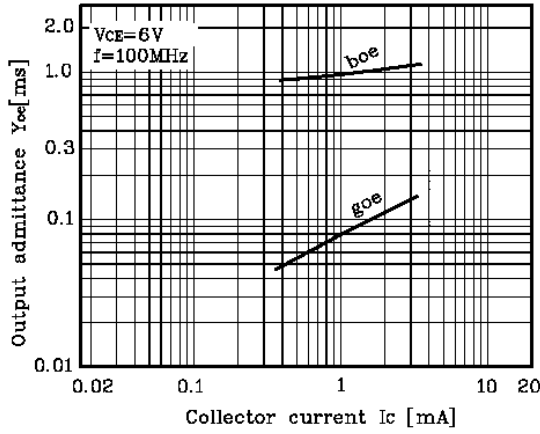


Fig. 8  $I_C$ - $Y_{fe}$

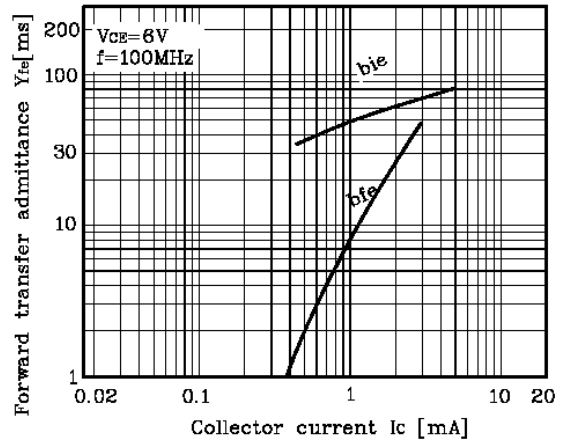


Fig. 9  $I_C$ - $Y_{re}$

