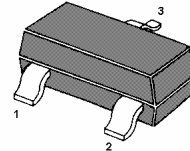


# MMBTSC2412

## NPN Silicon Epitaxial Planar Transistor

for general purpose applications.

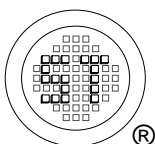
The transistor is subdivided into three groups Q, R and S, according to its DC current gain.



1.BASE 2.EMITTER 3.COLLECTOR  
SOT-23 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	60	V
Collector Emitter Voltage	$V_{CEO}$	50	V
Emitter Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	150	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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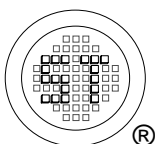


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# MMBTSC2412

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

		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=6\text{V}$ , $I_C=1\text{mA}$	Q	$h_{FE}$	120	-	270	-
	R	$h_{FE}$	180	-	390	-
	S	$h_{FE}$	270	-	560	-
Collector Base Breakdown Voltage at $I_C=50\mu\text{A}$		$V_{(BR)CBO}$	60	-	-	V
Collector Emitter Breakdown Voltage at $I_C=1\text{mA}$		$V_{(BR)CEO}$	50	-	-	V
Emitter Base Breakdown Voltage at $I_E=50\mu\text{A}$		$V_{(BR)EBO}$	7	-	-	V
Collector Cutoff Current at $V_{CB}=60\text{V}$		$I_{CBO}$	-	-	0.1	$\mu\text{A}$
Emitter Cutoff Current at $V_{EB}=7\text{V}$		$I_{EBO}$	-	-	0.1	$\mu\text{A}$
Collector Saturation Voltage at $I_C=50\text{mA}$ , $I_B=5\text{mA}$		$V_{CE(sat)}$	-	-	0.4	V
Gain Bandwidth Product at $V_{CE}=12\text{V}$ , $-I_E=2\text{mA}$ , $f=100\text{MHz}$		$f_T$	-	180	-	MHz
Output Capacitance at $V_{CE}=12\text{V}$ , $f=1\text{MHz}$		$C_{OB}$	-	2	3.5	pF



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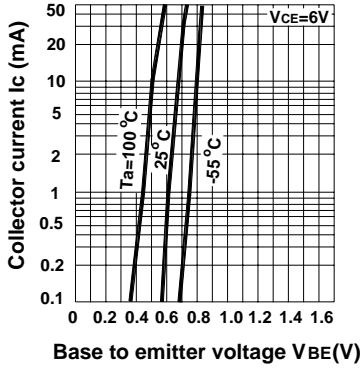
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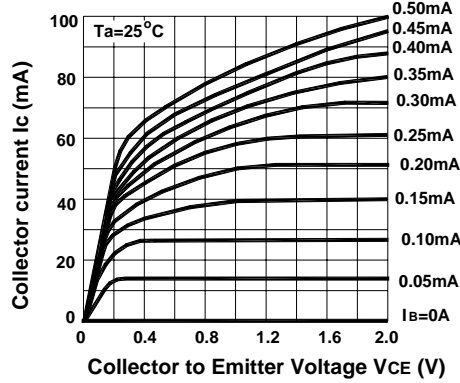
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# MMBTSC2412

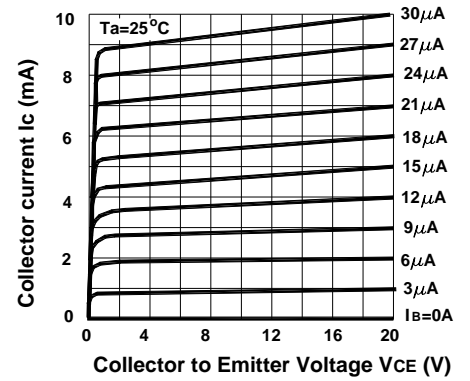
**Fig. 1** Grounded emitter propagation characteristics



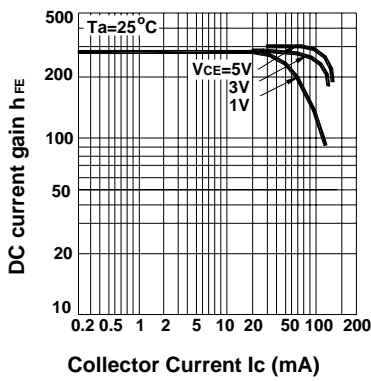
**Fig.2** Grounded emitter output characteristics(I)



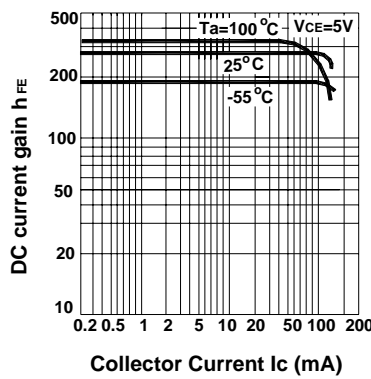
**Fig.3** Grounded emitter output characteristics(II)



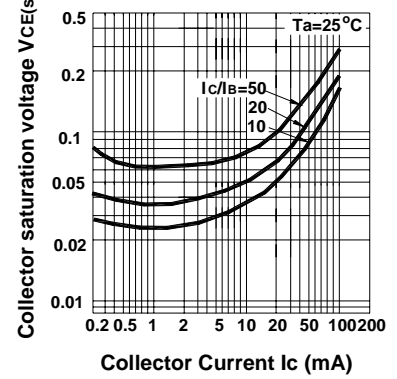
**Fig.4** DC current gain vs. collector current (I)



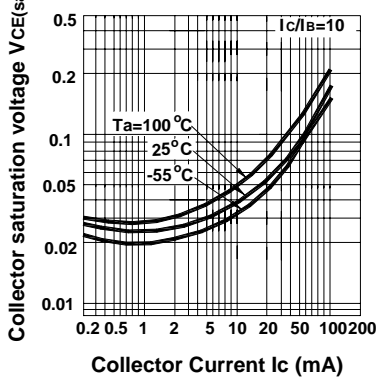
**Fig.5** DC current gain vs. collector current (II)



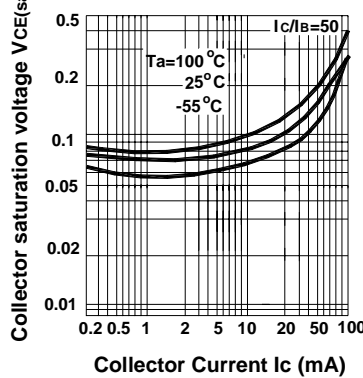
**Fig.6** Collector-emitter saturation voltage vs. collector current



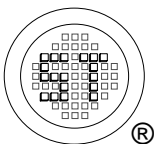
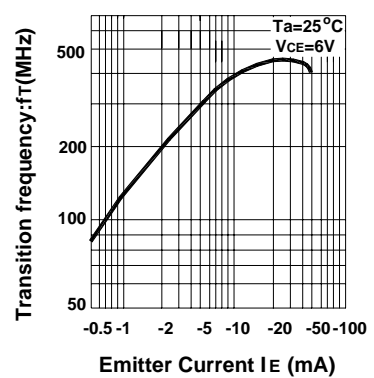
**Fig.7** Collector-emitter saturation voltage vs. collector current(I)



**Fig.8** Collector-emitter saturation voltage vs. collector current(II)



**Fig.9** Gain bandwidth product vs. emitter current



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ISO/TS 16949 : 2002  
Certificate No. 05103



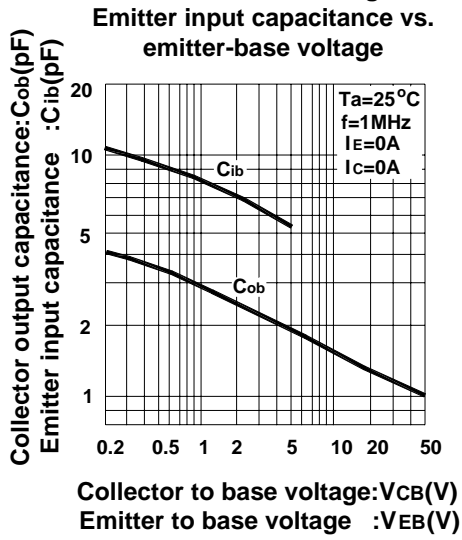
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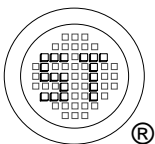
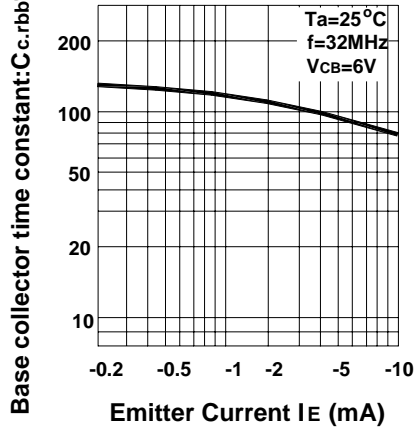
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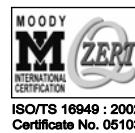
**Fig.10 Collector output capacitance vs. collector-base voltage**



**Fig.11 Base-collector time constant vs. emitter current**



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