



# FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,  
KWUN TONG, KOWLOON, HONG KONG.

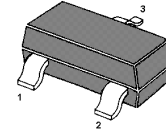
TEL: 852-2790 0314 FAX: 852-2790 0206

## MMBTSA1036

### PNP Silicon Epitaxial Planar Transistor

For switching and general purpose applications.

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



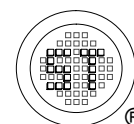
1. Base 2. Emitter 3. Collector  
SOT-23 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CB0}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	32	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	500	mA
Power Dissipation	$P_{tot}$	200	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.	Typ.	Max.	Unit	
DC Current Gain at $-V_{CE} = 3\text{ V}$ , $-I_C = 100\text{ mA}$ Current Gain Group	P	$h_{FE}$	82	-	180	-
	Q	$h_{FE}$	120	-	270	-
	R	$h_{FE}$	180	-	390	-
Collector Base Cutoff Current at $-V_{CB} = 20\text{ V}$	$-I_{CB0}$	-	-	1	$\mu\text{A}$	
Emitter Base Cutoff Current at $-V_{EB} = 4\text{ V}$	$-I_{EBO}$	-	-	1	$\mu\text{A}$	
Collector Base breakdown voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CB0}$	40	-	-	V	
Collector Emitter breakdown voltage at $-I_C = 1\text{ mA}$	$-V_{(BR)CEO}$	32	-	-	V	
Emitter Base breakdown voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	5	-	-	V	
Collector Emitter Saturation Voltage at $-I_C = 300\text{ mA}$ , $-I_B = 30\text{ mA}$	$-V_{CE(sat)}$	-	-	0.6	V	
Transition Frequency at $-V_{CE} = 5\text{ V}$ , $-I_E = 20\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	-	200	-	MHz	
Collector Output Capacitance at $-V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	7	-	pF	





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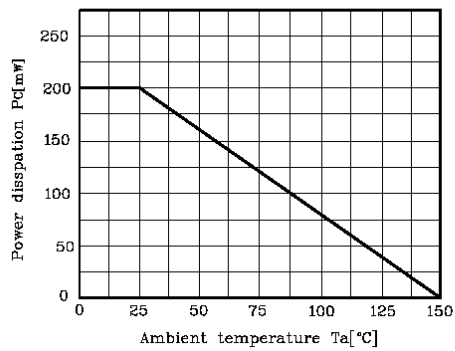
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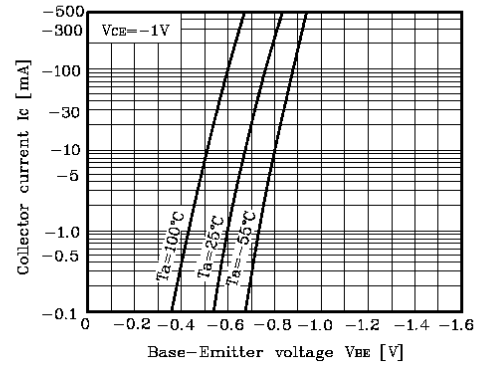
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**MMB TSA1036**

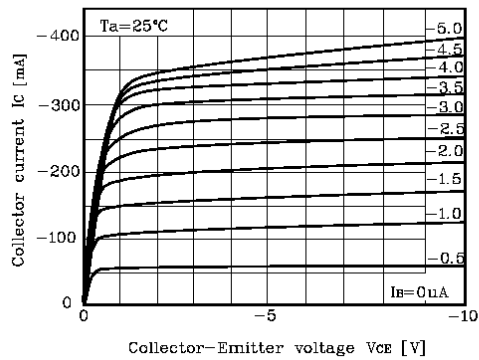
**Fig. 1  $P_C - T_a$**



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



**Fig. 3  $I_C - V_{CE}$**



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

