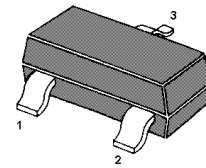


MMBTSA2048

PNP Silicon Epitaxial Planar Transistor

for small signal low frequency amplifier and high speed switching applications.



1.BASE 2.EMITTER 3.COLLECTOR
TO-236 Plastic Package

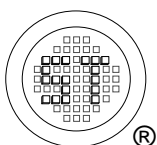
Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	30	V
Collector Emitter Voltage	$-V_{CEO}$	30	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_C$ $-I_{CP}$	1 2 ¹⁾	A
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ $P_w = 10\text{ ms}$

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $-V_{CE} = 2\text{ V}$, $-I_C = 100\text{ mA}$	Current Gain Group Q	h_{FE}	120	-	270	-
	R	h_{FE}	180	-	390	-
Collector Base Cutoff Current at $-V_{CB} = 20\text{ V}$	$-I_{CBO}$	-	-	100	nA	
Emitter Base Cutoff Current at $-V_{EB} = 4\text{ V}$	$-I_{EBO}$	-	-	100	nA	
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	30	-	-	V	
Collector Emitter Breakdown Voltage at $-I_C = 1\text{ mA}$	$-V_{(BR)CEO}$	30	-	-	V	
Emitter Base Breakdown Voltage at $-I_E = 100\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	6	-	-	V	
Collector Emitter Saturation Voltage at $-I_C = 500\text{ mA}$, $-I_B = 50\text{ mA}$	$-V_{CE(sat)}$	-	-	0.3	V	
Gain Bandwidth Product at $-V_{CE} = 10\text{ V}$, $-I_C = 50\text{ mA}$	f_T	120	-	-	MHz	
Collector output capacitance at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	10	-	pF	



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ISO/TS 16949 : 2009
Certificate No. 180713003



ISO14001 : 2004
Certificate No. 7116



ISO 9001 : 2008
Certificate No. 50719410



BS-OHSAS 18001 : 2007
Certificate No. 7116



IECQ QC 080000
Certificate No. PRC:SPM-1483-1

Dated: 16/03/2015 Rev: 01

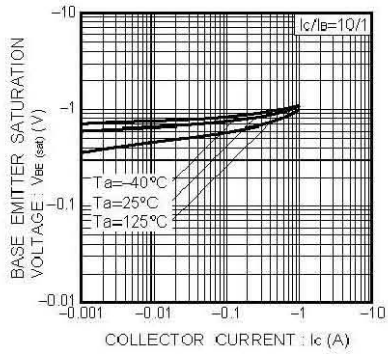


Fig.1 Base-Emitter Saturation Voltage vs. Collector Current

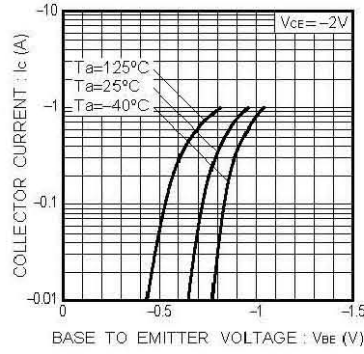


Fig.2 Grounded Emitter Propagation Characteristics

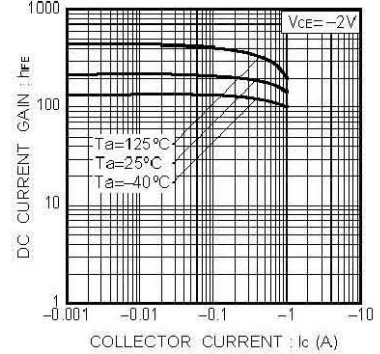


Fig.3 DC Current Gain vs. Collector Current (I)

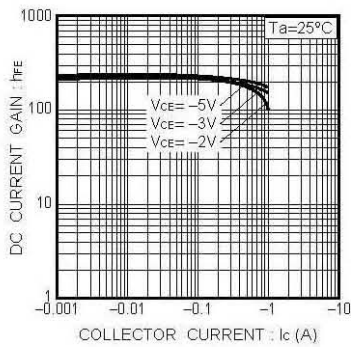


Fig.4 DC Current Gain vs. Collector Current (II)

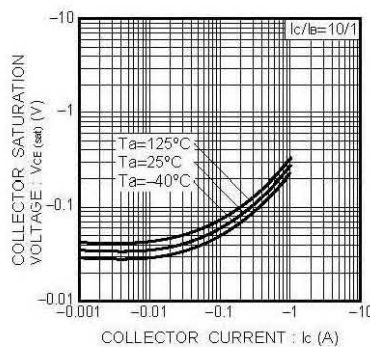


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

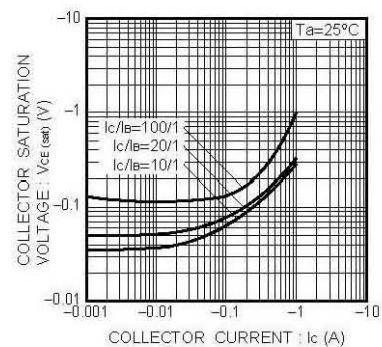
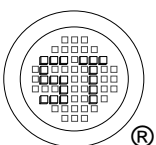


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)



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