

NPN Transistor

80V 350mW SOT-23

MMBTA06

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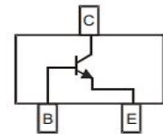
FEATURE

- Silicon Planar Design For High Voltage Application
- Collector current: 500mA
- Application: Signal Processing, Switching, Amplification



MECHANICAL DATA

- Case: SOT-23. molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026



MAXIMUM RATING

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}C/W$
Junction and Storage Temperature	T_J, T_{stg}	-55 ~+150	$^{\circ}C$

Note:

1. $T_A=25^{\circ}C$ unless otherwise noted

ELECTRICAL CHARACTERISTICS

Parameter- ON Characteristic	Conditions	Symbol	Min.	Max.	Unit
DC Current Gain	$V_{CE}=1.0V, I_C=10mA$	h_{FE}	100	-	-
	$V_{CE}=1.0V, I_C=100mA$		100	-	
Collector-Emitter Saturation Voltage	$I_C=100mA, I_B=10mA$	$V_{CE(SAT)}$	-	0.25	V
Base-Emitter On Voltage	$I_C=100mA, V_{CE}=1V$	$V_{BE(ON)}$	-	1.20	V
Parameter- OFF Characteristic	Conditions	Symbol	Min.	Max.	Unit
Collector-Base Breakdown Voltage	$I_C=100\mu A$	$V_{(BR)CBO}$	80	-	V
Collector-Emitter Breakdown Voltage	$I_C=1.0mA, I_B=0$	$V_{(BR)CEO}$	80	-	V
Emitter-Base Breakdown Voltage	$I_E=100\mu A, I_C=0$	$V_{(BR)EBO}$	4.0	-	V
Emitter Base Cut-Off Current	$V_{CE}=60V, I_B=0$	I_{EBO}	-	100	nA
Collector Base Cut-Off Current	$V_{CB}=80V, I_E=0$	I_{CBO}	-	100	nA
Parameter-Small Signal	Conditions	Symbol	Min.	Max.	Unit
Current-Gain — Bandwidth Product	$V_{CE}=2V, I_C=10mA, f=100MHz$	f_T	100	-	MHz

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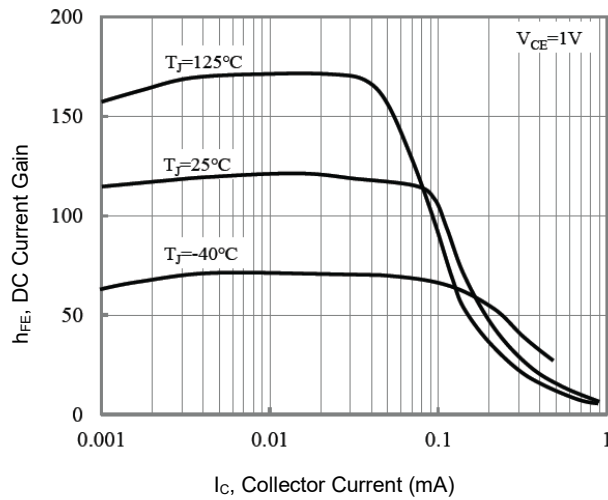
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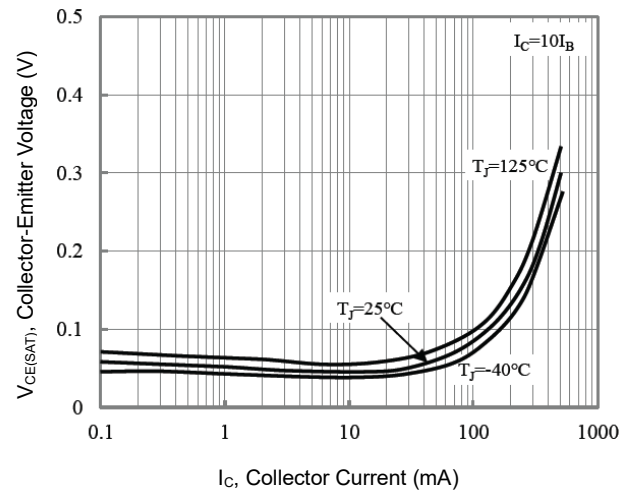
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CHARACTERISTIC CURVES

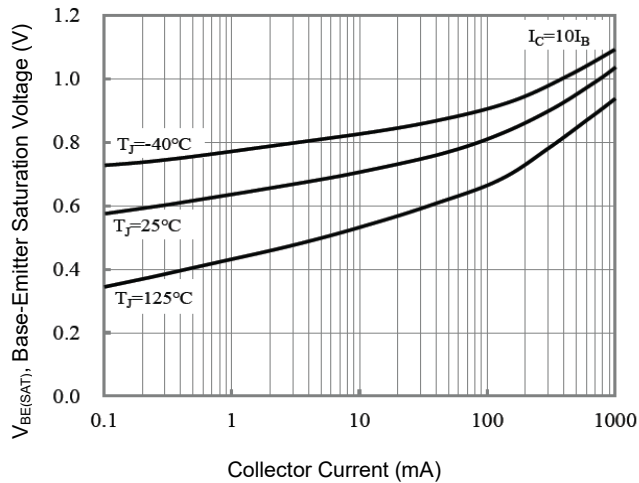
Current Gain Vs Collector Current



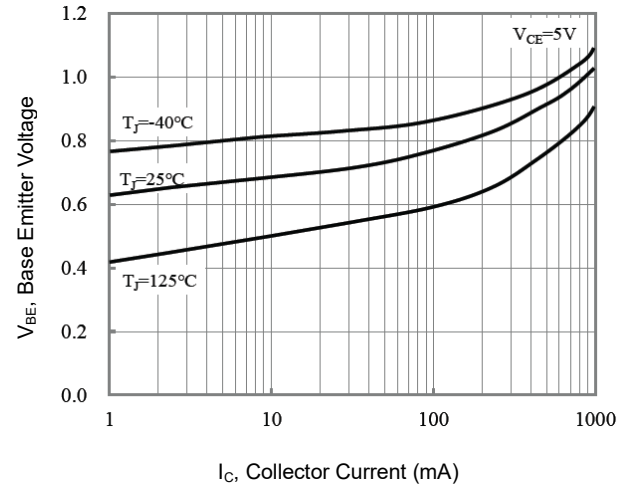
$V_{CE(SAT)}$ Voltage vs Collector Current



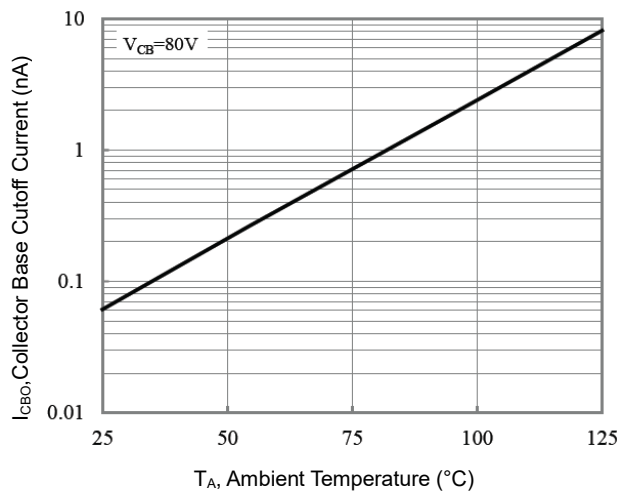
$V_{BE(SAT)}$ Voltage vs Collector Current



V_{BE} Voltage vs Collector Current



Collector Base Cutoff Current vs Ambient Temperature



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DIMENSIONS AND RECOMMENDED LAND PATTERN

Item	Min (mm)	Max (mm)
A1	-	0.10
A2	0.89	1.40
b	0.30	0.50
c	0.08	0.20
D	2.70	3.10
e	0.89	1.02
e1	1.78	2.04
E	2.10	2.80
E1	1.20	1.60
L	0.15	
X	0.80	
X1	0.95	
Y	1.10	
Y1	0.90	
Y2	2.90	

