



# MMBTA06W

## NPN High Voltage Transistor

<b>Voltage</b>	<b>80V</b>	<b>Power</b>	<b>225mW</b>
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### Features

- NPN silicon, planar design
- Collector current  $I_C = 500\text{mA}$
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Green molding compound as per IEC61249 Std. (Halogen Free)

### Mechanical Data

- Case: SOT-323 Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00018 ounces, 0.005 grams
- Marking: B06

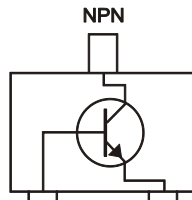
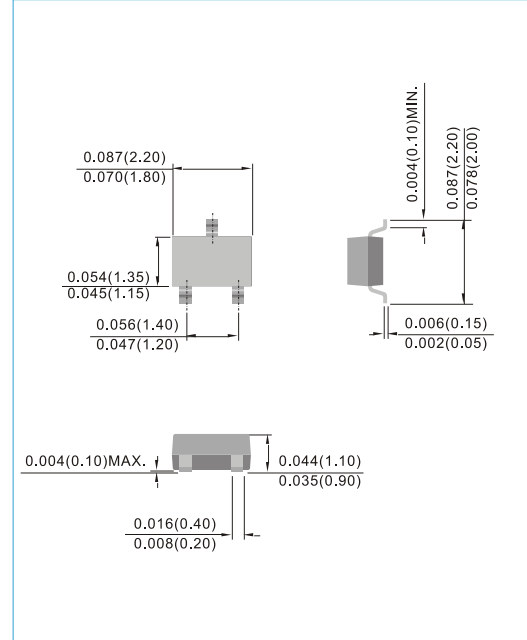


Fig.34(TOP VIEW)

### SOT-323 Unit : inch(mm)



## Maximum Ratings and Thermal Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Collector-Emitter Voltage	$V_{CBO}$	80	V
Collector-Base Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	4	V
Collector Current-Continuous	$I_C$	500	mA
Maximum Power Dissipation ( Note 1)	$P_D$	225	mW
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$
Typical Junction-to Ambient Thermal Resistance ( Note 1)	$R_{\theta JA}$	550	$^\circ\text{C/W}$

Note : 1. Mounted on a FR4 PCB, single-sided copper, mini pad.



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## Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
<b>OFF Characteristics</b>						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	80	-	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	80	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	4	-	-	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=80\text{V}, I_E=0$	-	-	100	nA
Collector Cutoff Current	$I_{CES}$	$V_{CE}=60\text{V}, I_B=0$	-	-	100	nA
<b>ON characteristics</b>						
DC Current Gain	$h_{FE}$	$V_{CE}=1\text{V}, I_C=10\text{mA}$	100	-	-	-
		$V_{CE}=1\text{V}, I_C=100\text{mA}$	100	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$	-	-	0.25	V
Base-Emitter Turn-on voltage	$V_{BE(on)}$	$I_C=100\text{mA}, V_{CE}=1\text{V}$	-	-	1.2	V
Current-Gain-Bandwidth Product	$f_T$	$I_C=10\text{mA}, V_{CE}=2\text{V}$ $f=100\text{MHz}$	100	-	-	MHz



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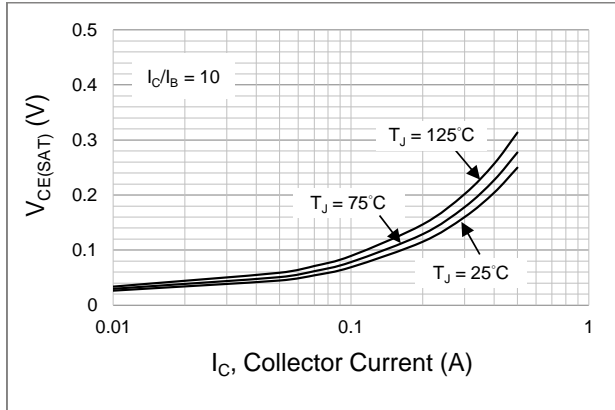


Fig.1 Typical Collector-Emitter Saturation Voltage

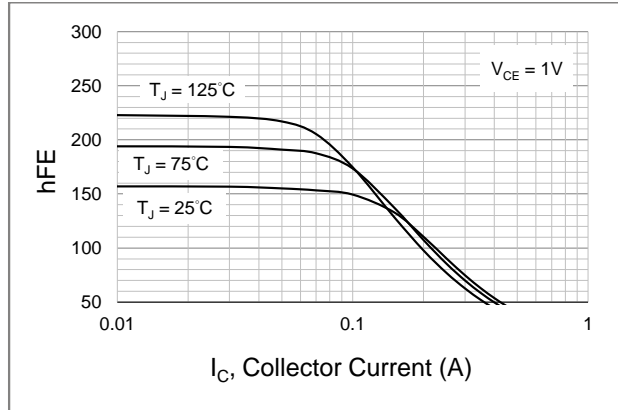


Fig.2 Typical DC Current Gain vs Collector Current

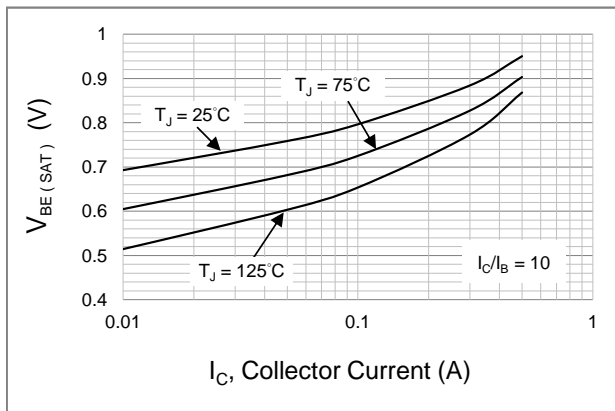


Fig.3 Typical Base-Emitter Saturation Voltage

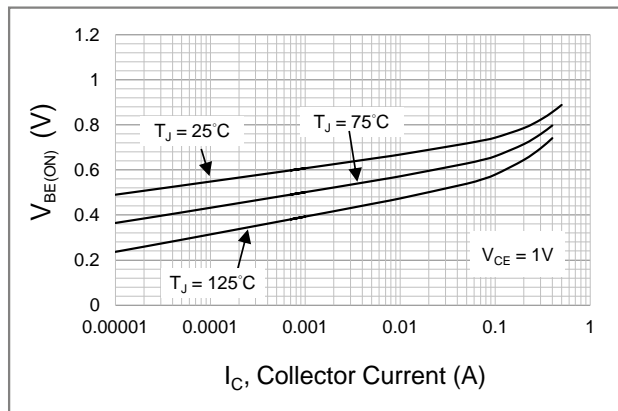


Fig.4 Typical Base - Emitter Voltage vs Collector Current

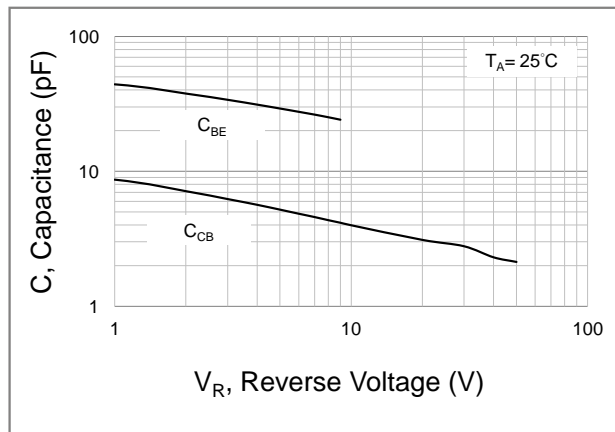
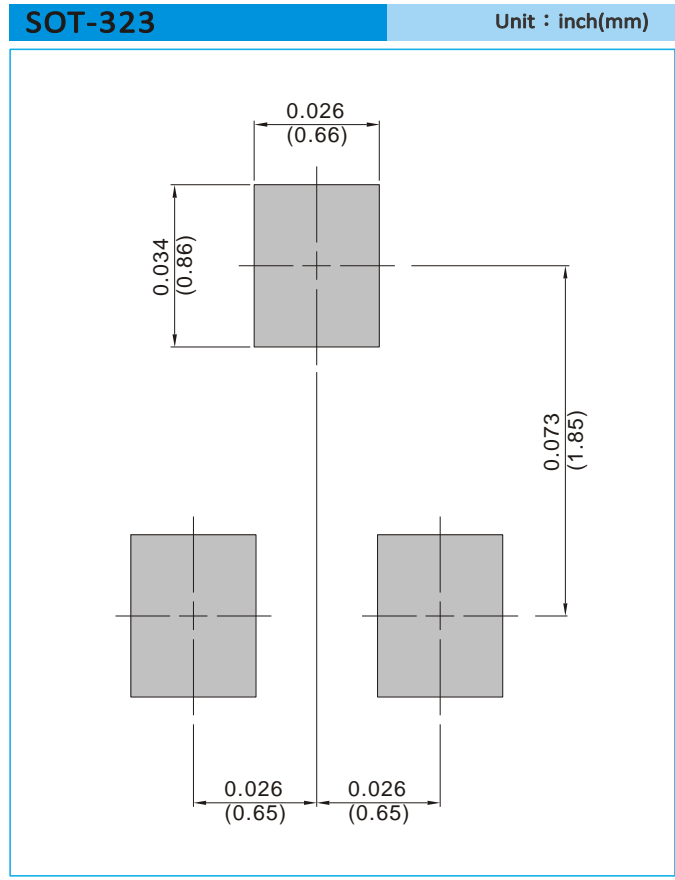


Fig.5 Typical Capacitance



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## MOUNTING PAD LAYOUT



## ORDER INFORMATION

- Packing information  
T/R – 12K per 13" plastic Reel  
T/R – 3K per 7" plastic Reel



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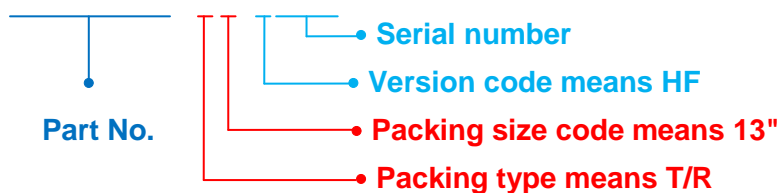
## Part No\_packing code\_Version

MMBTA06W\_R1\_00001

MMBTA06W\_R2\_00001

### For example :

RB500V-40\_R2\_00001



Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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