



MMBTA42W

NPN HIGH VOLTAGE TRANSISTOR

VOLTAGE 300 Volt **POWER** 150 mWatt

FEATURES

- NPN silicon, planar design
- Collector-emitter voltage $V_{CE} = 300V$
- Collector current $I_C = 500mA$
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

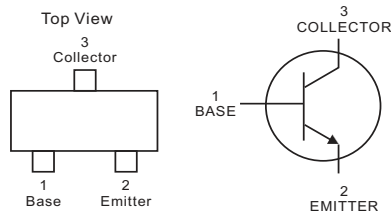
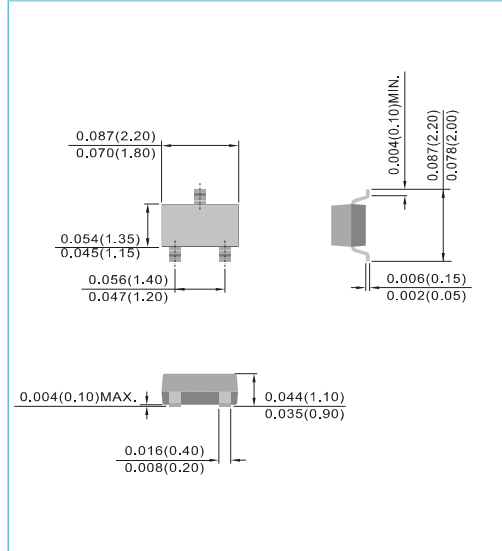
Case: SOT-323, Plastic

Terminals: Solderable per MIL-STD-750, Method 2026

Approx. Weight: 0.005 gram

Marking: A4W

SOT-323 Unit : inch(mm)



ABSOLUTE RATINGS

PARAMETER	SYMBOL	LIMIT	UNIT
Collector-base voltage	V_{CBO}	300	V
Collector-emitter voltage	V_{CEO}	300	V
Emitter-base voltage	V_{EBO}	6	V
Collector current (DC)	I_C	500	mA
Maximum power dissipation (note1)	P_D	150	mW
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

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



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THERMAL CHARACTERISTICS

PARAMETER	CONDITIONS	SYMBOL	VALUE	UNIT
Thermal resistance from junction to ambient	note 1	$R_{\theta JA}$	550	$^{\circ}\text{C}/\text{W}$

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

CHARACTERISTICS

$T_{AMB}=25^{\circ}\text{C}$ unless otherwise specified

PARAMETER	CONDITIONS	SYMBOL	MIN.	MAX.	UNIT
Collector-emitter breakdown voltage	$I_C=1\text{mA}; I_B=0$	$V_{(BR)CEO}$	300	-	V
Collector-base breakdown voltage	$I_C=100\mu\text{A}; I_E=0$	$V_{(BR)CBO}$	300	-	V
Emitter-base breakdown voltage	$I_E=100\mu\text{A}; I_C=0$	$V_{(BR)EBO}$	6	-	V
Collector cut-off current	$I_E=0; V_{CB}=300\text{V}$	I_{CBO}	-	100	nA
Emitter cut-off current	$I_C=0; V_{EB}=6\text{V}$	I_{EBO}	-	100	nA
DC current gain	$V_{CE}=10\text{V};$ $I_C=1\text{mA}$ $I_C=10\text{mA}$ $I_C=30\text{mA}$	h_{FE}	25 40 40	- - -	- - -
Collector-emitter saturation voltage	$I_C=20\text{mA}; I_B=2\text{mA}$	$V_{CE(SAT)}$	-	0.5	V
Base-emitter saturation voltage	$I_C=20\text{mA}; I_B=2\text{mA}$	$V_{BE(SAT)}$	-	0.9	V
Collector capacitance	$I_E=0; V_{CB}=20\text{V};$ $f=1\text{MHz}$	C_{CB}	-	3	pF
Transition frequency	$I_C=10\text{mA}; V_{CE}=20\text{V};$ $f=100\text{MHz}$	f_T	50	-	MHz



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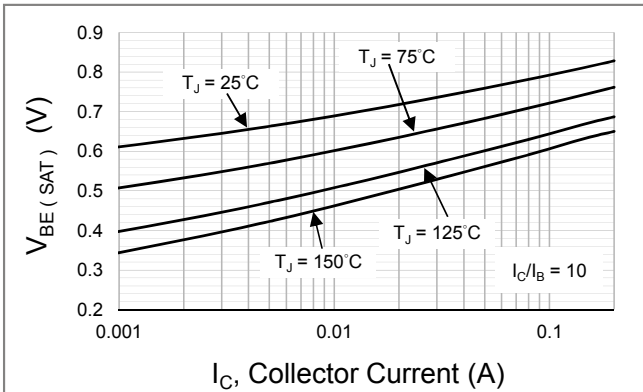


Fig.1 Typical Base-Emitter Saturation Voltage

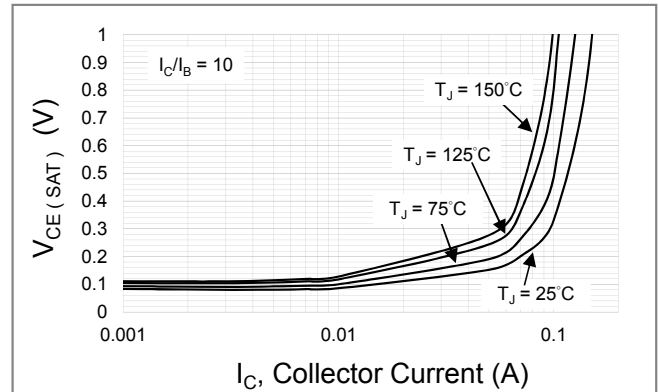


Fig.2 Typical Collector-Emitter Saturation Voltage

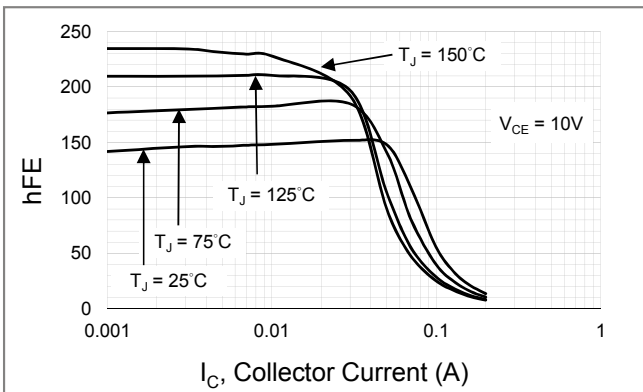


Fig.3 Typical DC Current Gain vs Collector Current

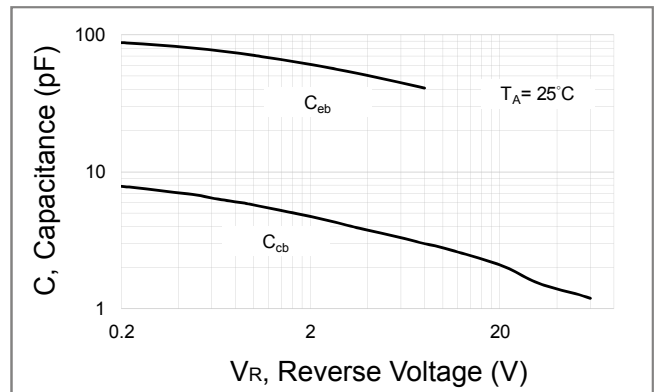
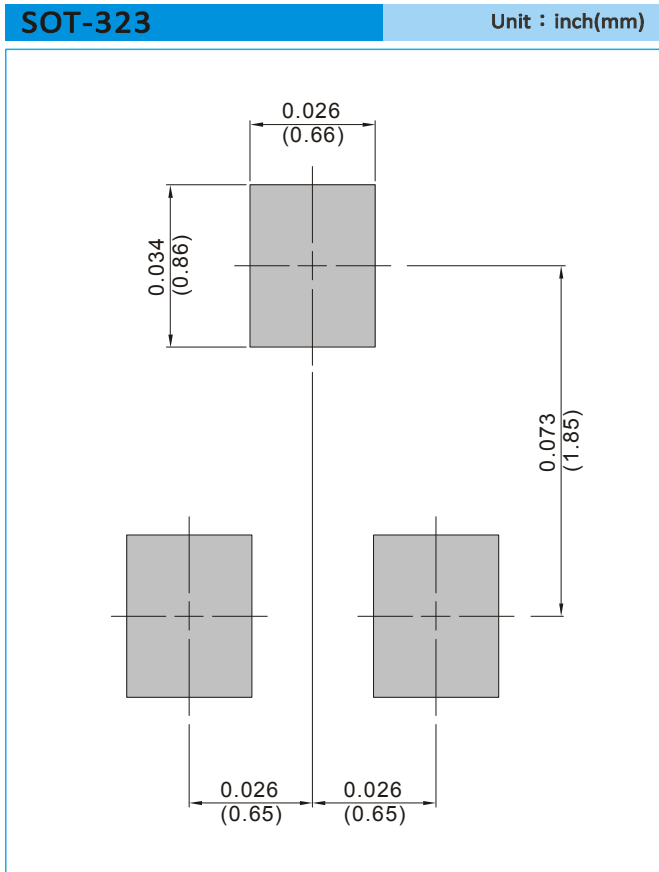


Fig.4 Typical Capacitance



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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

MMBTA42W_R1_00001

MMBTA42W_R2_00001

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th 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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