



# MMBTA92-AU

## PNP HIGH VOLTAGE TRANSISTOR

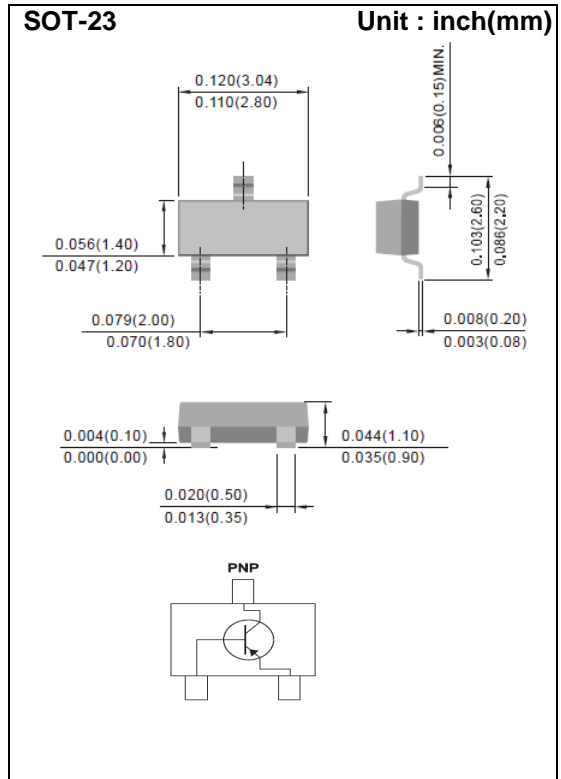
**VOLTAGE** 300 Volt **POWER** 250 mWatt

### FEATURES

- PNP silicon, planar design
- High voltage (max. 300V)
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

### MECHANICAL DATA

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0084 grams
- Marking: A92



### ABSOLUTE RATINGS

PARAMETER	CONDITIONS	SYMBOL	MIN.	MAX.	UNIT
Collector-base voltage	open emitter	$V_{CBO}$	-300	-	V
Collector-emitter voltage	open base	$V_{CEO}$	-300	-	V
Emitter-base voltage	open collector	$V_{EBO}$	-5	-	V
Collector current (DC)		$I_C$	-	-500	mA
Peak collector current		$I_{CM}$	-	-600	mA
Peak base current		$I_{BM}$	-	-100	mA
Total power dissipation	$T_{AMB} < 25^{\circ}C$ ; note 1	$P_{TOT}$	-	250	mW
Storage temperature		$T_{STG}$	-55	+150	$^{\circ}C$
Junction temperature		$T_J$	-55	+150	$^{\circ}C$
Operating ambient temperature		$T_{AMB}$	-55	+150	$^{\circ}C$

Note 1: Mounted on FR4 PCB at 1 inch square copper pad.



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## THERMAL CHARACTERISTICS

PARAMETER	CONDITIONS	SYMBOL	VALUE	UNIT
Typical Thermal resistance from junction to ambient	note 1	$R_{\theta JA}$	500	$^{\circ}\text{C}/\text{W}$

Note 1: Mounted on FR4 PCB at 1 inch square copper pad.

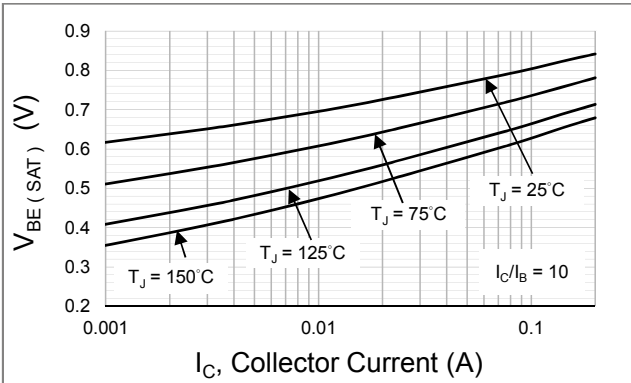
## CHARACTERISTICS $T_{AMB}=25^{\circ}\text{C}$ unless otherwise specified

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	$I_E=-100\mu\text{A}; I_C=0$	$V_{(BR)EBO}$	-5	-	V
Collector cut-off current	$I_E=0; V_{CB}=-200\text{V}$	$I_{CBO}$	-	-250	nA
Collector-emitter cut-off current	$V_{CES}=-300\text{V}$	$I_{CES}$	-	-250	nA
Emitter cut-off current	$I_C=0; V_{EB}=-3\text{V}$	$I_{EBO}$	-	-100	nA
DC current gain	$V_{CE}=-10\text{V}; \text{note 2}$ $I_C=-1\text{mA}$ $I_C=-10\text{mA}$ $I_C=-30\text{mA}$	$h_{FE}$	25 40 25	- - -	-
Collector-emitter saturation voltage	$I_C=-20\text{mA}; I_B=-2\text{mA}$	$V_{CE(SAT)}$	-	-500	mV
Base-emitter saturation voltage	$I_C=-20\text{mA}; I_B=-2\text{mA}$	$V_{BE(SAT)}$	-	-900	mV
Collector capacitance	$I_E=0; V_{CB}=-20\text{V};$ $f=1\text{MHz}$	$C_C$	-	6	pF
Transition frequency	$I_C=-10\text{mA}; V_{CE}=-20\text{V};$ $f=100\text{MHz}$	$f_T$	50	-	MHz

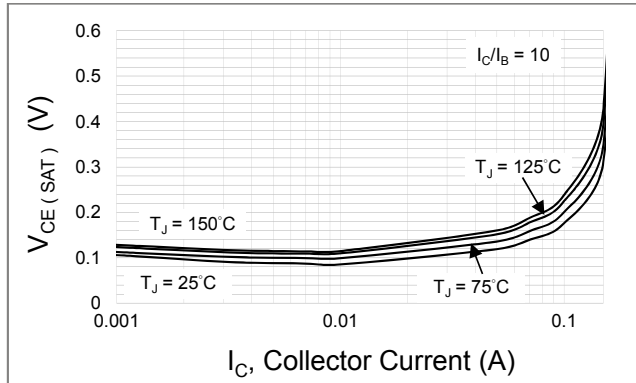
Note 2: Pulse test :  $t_p \leq 300\mu\text{s}; \delta < 0.02$



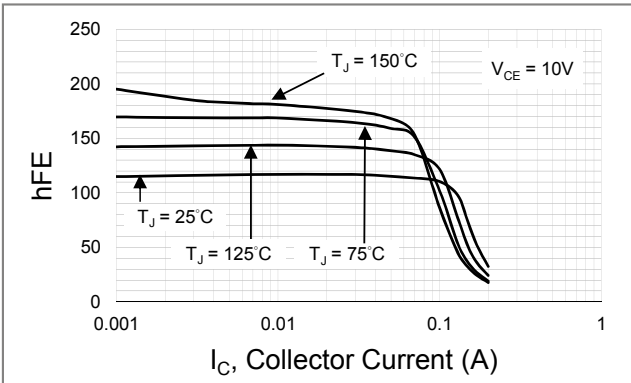
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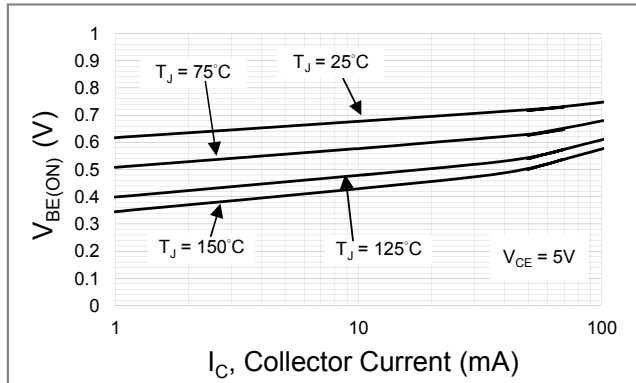
**Fig.1 Typical Base-Emitter Saturation Voltage**



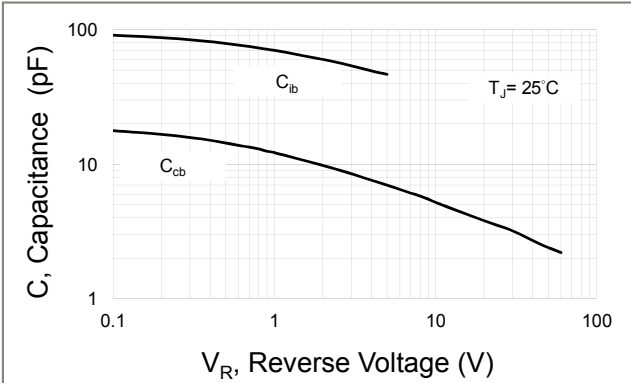
**Fig.2 Typical Collector-Emitter Saturation Voltage**



**Fig.3 Typical DC Current Gain vs Collector Current**



**Fig.4 Typical Base - Emitter Voltage vs Collector Current**



**Fig.5 Typical Capacitance**



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## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
MMBTA92-AU_R1_000A1	SOT-23	3K pcs / 7" reel	A92	Halogen free
MMBTA92-AU_R2_000A1	SOT-23	12K pcs / 13" reel	A92	Halogen free

## Mounting Pad Layout

