



MMBTA92-AU

PNP HIGH VOLTAGE TRANSISTOR

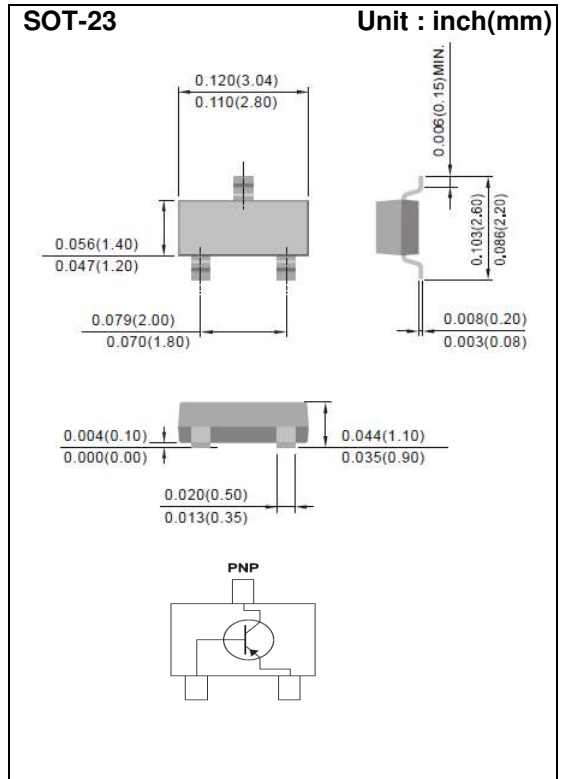
VOLTAGE 300 Volt **POWER** 250 mWatt

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 _{CB0} | -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°C ; note 1 | P _{TOT} | - | 250 | mW |
| Storage temperature | | T _{STG} | -55 | +150 | °C |
| Junction temperature | | T _J | -55 | +150 | °C |
| Operating ambient temperature | | T _{AMB} | -55 | +150 | °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 | $V_{CE} = -10\text{V};$ 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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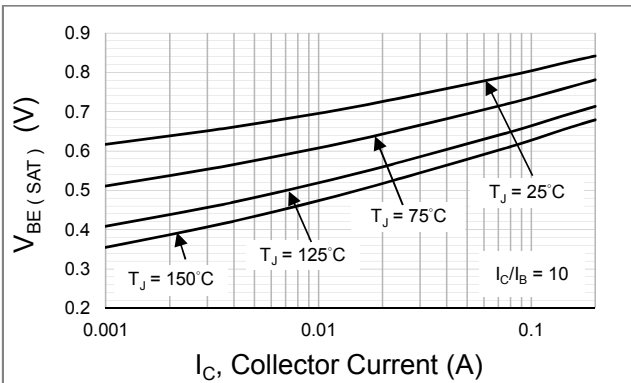


Fig.1 Typical Base-Emitter Saturation Voltage

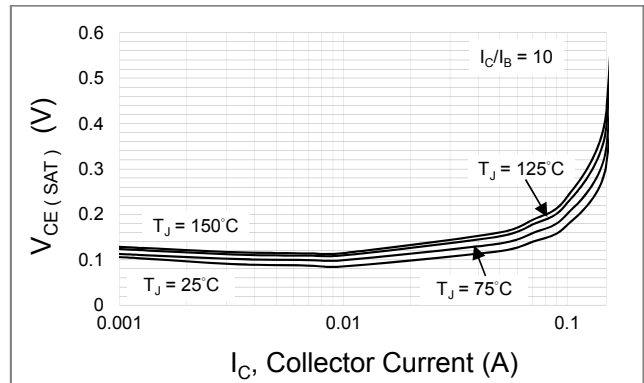


Fig.2 Typical Collector-Emitter Saturation Voltage

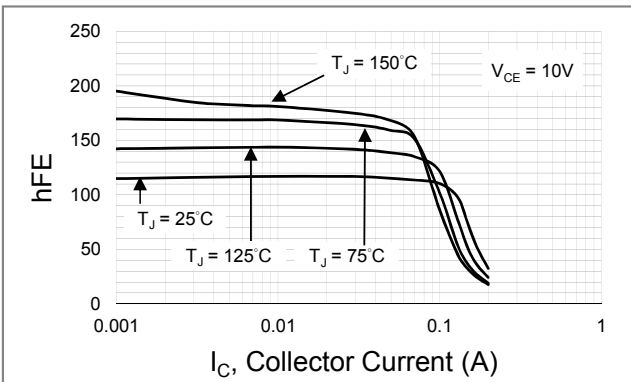


Fig.3 Typical DC Current Gain vs Collector Current

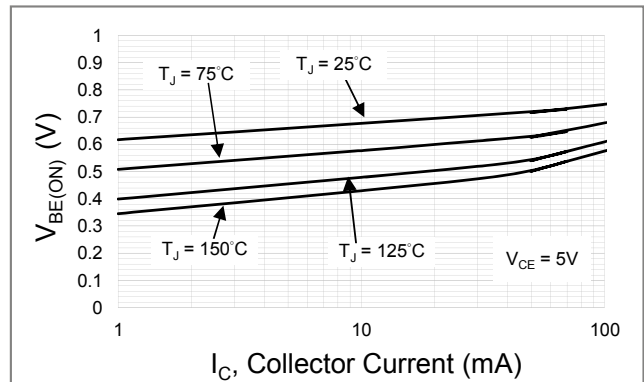


Fig.4 Typical Base - Emitter Voltage vs Collector Current

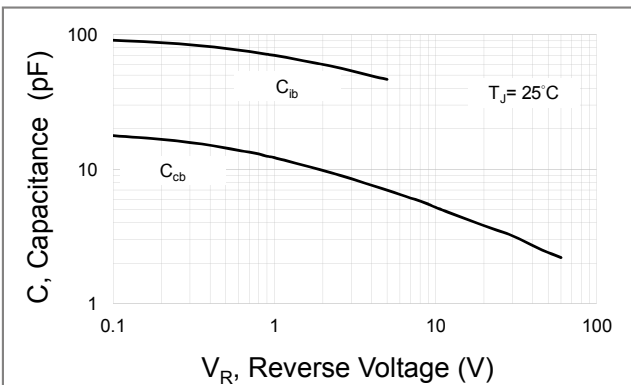


Fig.5 Typical Capacitance

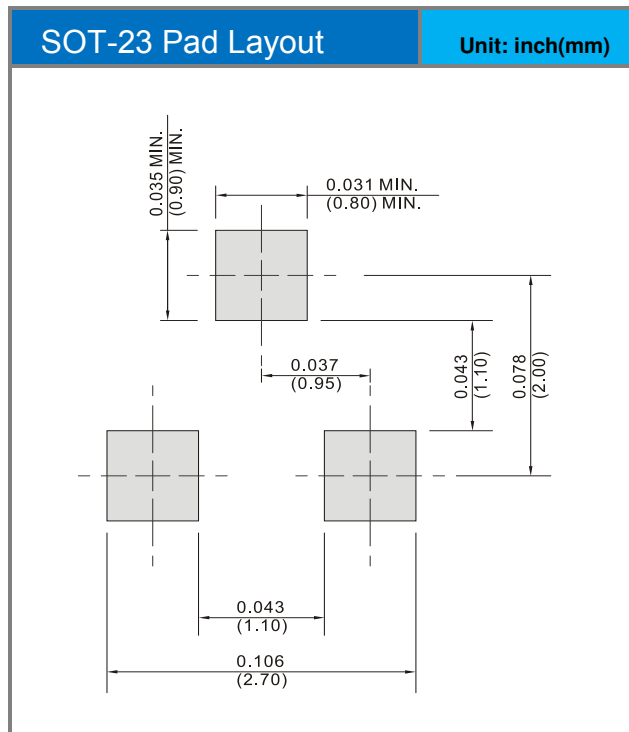


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Part No Packing Code Version

| 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





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