

DATA SHEET



MPSA56

PNP general purpose transistor

Product data sheet
Supersedes data of 1999 Apr 27

2004 Dec 13

PNP general purpose transistor

MPSA56

FEATURES

- Low current (max. 500 mA)
- Low voltage (max. 80 V).

APPLICATIONS

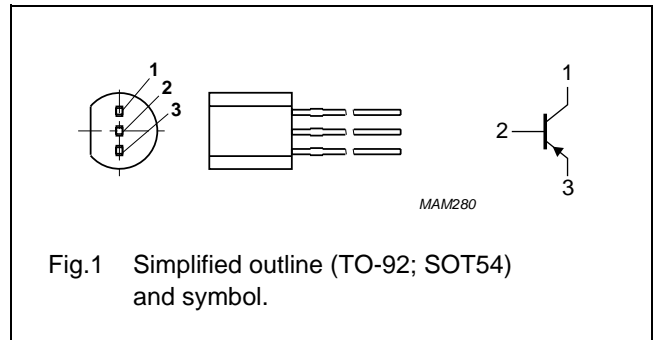
- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a TO-92; SOT54 plastic package.
NPN complement: MPSA06.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | collector |
| 2 | base |
| 3 | emitter |



ORDERING INFORMATION

| TYPE NUMBER | PACKAGE | | |
|-------------|---------|---|---------|
| | NAME | DESCRIPTION | VERSION |
| MPSA56 | SC-43A | plastic single-ended leaded (through hole) package; 3 leads | SOT54 |

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|---------------------------|--|------|------|------------------|
| V_{CBO} | collector-base voltage | open emitter | - | -80 | V |
| V_{CEO} | collector-emitter voltage | open base | - | -80 | V |
| V_{EBO} | emitter-base voltage | open collector | - | -5 | V |
| I_C | collector current (DC) | | - | -500 | mA |
| I_{CM} | peak collector current | | - | -1 | A |
| I_{BM} | peak base current | | - | -200 | mA |
| P_{tot} | total power dissipation | $T_{amb} \leq 25\text{ }^\circ\text{C}$; note 1 | - | 625 | mW |
| T_{stg} | storage temperature | | -65 | +150 | $^\circ\text{C}$ |
| T_j | junction temperature | | - | 150 | $^\circ\text{C}$ |
| T_{amb} | ambient temperature | | -65 | +150 | $^\circ\text{C}$ |

Note

1. Transistor mounted on an FR4 printed-circuit board.

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THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th(j-a)}$ | thermal resistance from junction to ambient | note 1 | 200 | K/W |

Note

1. Transistor mounted on an FR4 printed-circuit board.

CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------|--------------------------------------|--|------|------|------|
| I_{CBO} | collector-base cut-off current | $V_{CB} = -80\text{ V}; I_E = 0\text{ A}$ | – | –50 | nA |
| I_{EBO} | emitter-base cut-off current | $V_{EB} = -5\text{ V}; I_C = 0\text{ A}$ | – | –50 | nA |
| h_{FE} | DC current gain | $V_{CE} = -1\text{ V}; I_C = -10\text{ mA}$ | 100 | – | |
| | | $V_{CE} = -1\text{ V}; I_C = -100\text{ mA}$ | 100 | – | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = -100\text{ mA}; I_B = -10\text{ mA}$ | – | –250 | mV |
| V_{BE} | base-emitter voltage | $V_{CE} = -1\text{ V}; I_C = -100\text{ mA}$ | – | –1.2 | V |
| f_T | transition frequency | $V_{CE} = -1\text{ V}; I_C = -100\text{ mA}; f = 100\text{ MHz}$ | 50 | – | MHz |

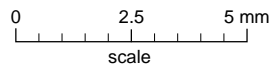
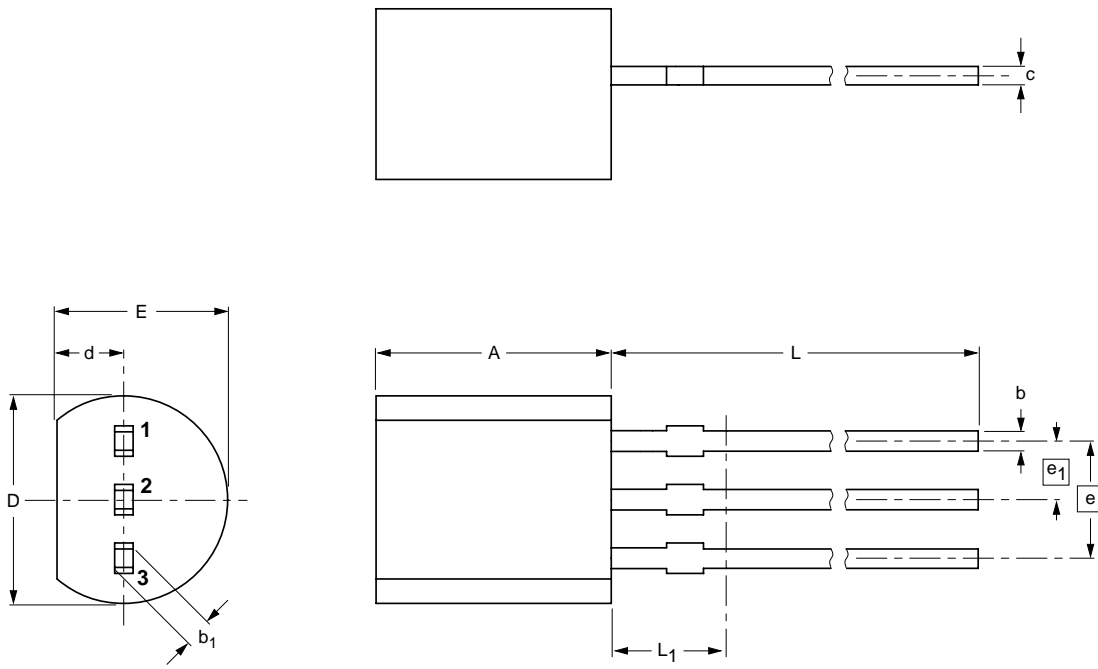
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PACKAGE OUTLINE

Plastic single-ended leaded (through hole) package; 3 leads

SOT54



DIMENSIONS (mm are the original dimensions)

| UNIT | A | b | b ₁ | c | D | d | E | e | e ₁ | L | L ₁ ⁽¹⁾ max. |
|------|------------|--------------|----------------|--------------|------------|------------|------------|------|----------------|--------------|---------------------------------------|
| mm | 5.2 5.0 | 0.48 0.40 | 0.66 0.55 | 0.45 0.38 | 4.8 4.4 | 1.7 1.4 | 4.2 3.6 | 2.54 | 1.27 | 14.5 12.7 | 2.5 |

Note

1. Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

| OUTLINE VERSION | REFERENCES | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|--------|---------------------|----------------------|
| | IEC | JEDEC | JEITA | | |
| SOT54 | | TO-92 | SC-43A | | 04-06-28 04-11-16 |

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DATA SHEET STATUS

| DOCUMENT STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | DEFINITION |
|--------------------------------|-------------------------------|---|
| Objective data sheet | Development | This document contains data from the objective specification for product development. |
| Preliminary data sheet | Qualification | This document contains data from the preliminary specification. |
| Product data sheet | Production | This document contains the product specification. |

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Printed in The Netherlands

R75/05/pp6

Date of release: 2004 Dec 13

Document order number: 9397 750 13613

