

# DATA SHEET



**MPSA06**

**NPN general purpose transistor**

Product specification  
Supersedes data of 1999 Apr 27

2004 Oct 11

# NPN general purpose transistor

# MPSA06

### FEATURES

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

### APPLICATIONS

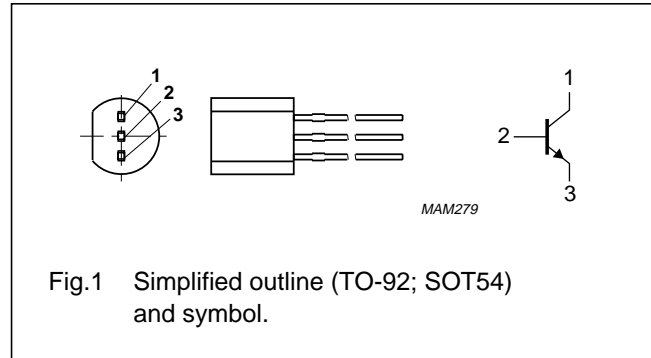
- General purpose switching and amplification.

### DESCRIPTION

NPN transistor in a TO-92; SOT54 plastic package.  
PNP complement: MPSA56.

### PINNING

PIN	DESCRIPTION
1	collector
2	base
3	emitter



### ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
MPSA06	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	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	625	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	ambient temperature		–65	+150	°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	$V_{CE} = 2\text{ V}; I_C = 10\text{ mA}; f = 100\text{ MHz}$	100	–	MHz

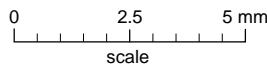
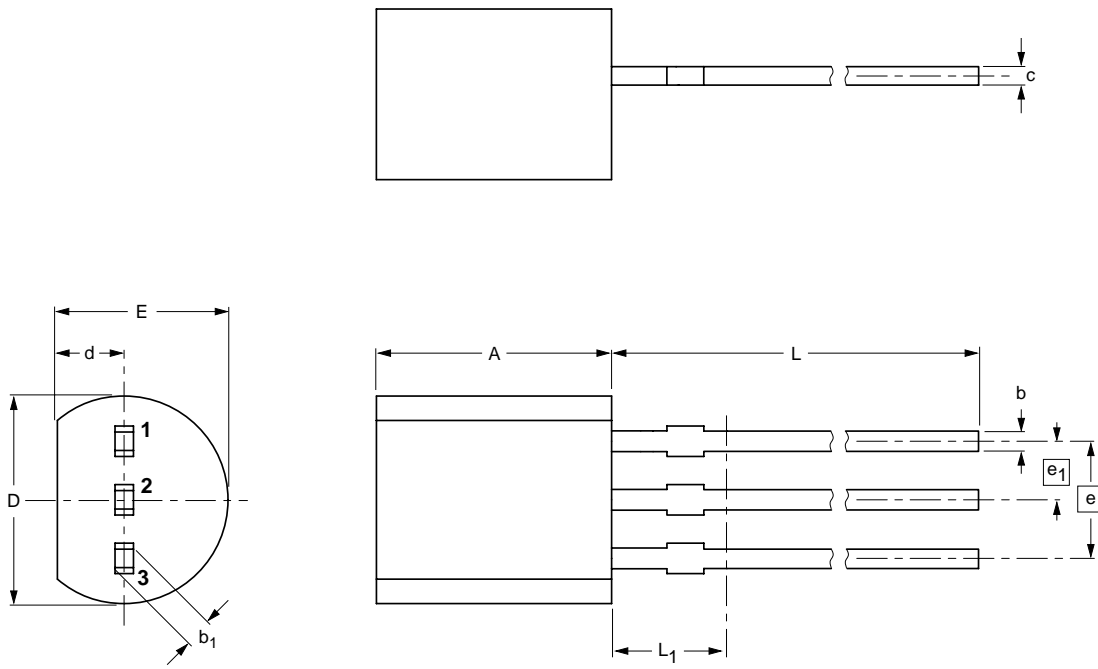
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PACKAGE OUTLINE

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

SOT54



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	b	b <sub>1</sub>	c	D	d	E	e	e <sub>1</sub>	L	L <sub>1</sub> <sup>(1)</sup> 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		-97-02-28 04-06-28

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## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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## **Contact information**

For additional information please visit <http://www.semiconductors.philips.com>. Fax: +31 40 27 24825

For sales offices addresses send e-mail to: [sales.addresses@www.semiconductors.philips.com](mailto:sales.addresses@www.semiconductors.philips.com).

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### Наши контакты:

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331