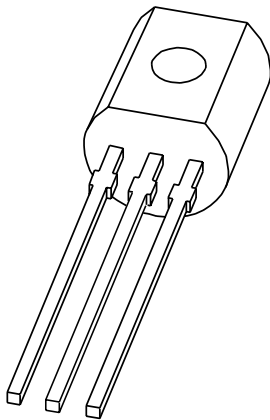


DATA SHEET



MPSA42; MPSA43 NPN high-voltage transistors

Product specification
Supersedes data of 1999 Apr 12

2004 Oct 11

NPN high-voltage transistors

MPSA42; MPSA43

FEATURES

- Low current (max. 100 mA)
- High voltage (max. 300 V).

APPLICATIONS

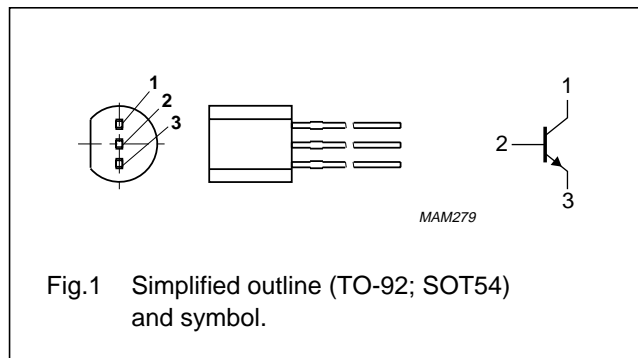
- Video
- Telephony
- Professional communication equipment.

DESCRIPTION

NPN high-voltage transistor in a TO-92; SOT54 plastic package. PNP complement: MPSA92.

PINNING

PIN	DESCRIPTION
1	collector
2	base
3	emitter



ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
MPSA42	SC-43A	plastic single-ended leaded (through hole) package; 3 leads	SOT54
MPSA43			

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			
	MPSA42		–	300	V
	MPSA43		–	200	V
V_{CEO}	collector-emitter voltage	open base			
	MPSA42		–	300	V
	MPSA43		–	200	V
V_{EBO}	emitter-base voltage	open collector	–	6	V
I_C	collector current (DC)		–	100	mA
I_{CM}	peak collector current		–	200	mA
I_{BM}	peak base current		–	100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$	–	500	mW
T_{stg}	storage temperature		–65	+150	$^\circ\text{C}$
T_j	junction temperature		–	150	$^\circ\text{C}$
T_{amb}	ambient temperature		–65	+150	$^\circ\text{C}$

NPN high-voltage transistors

MPSA42; MPSA43

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	note 1	250	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 MPSA42 MPSA43	$V_{CB} = 200\text{ V}; I_E = 0\text{ A}$ $V_{CB} = 160\text{ V}; I_E = 0\text{ A}$	–	100	nA
I_{EBO}	emitter-base cut-off current MPSA42 MPSA43	$V_{EB} = 6\text{ V}; I_C = 0\text{ A}$ $V_{EB} = 4\text{ V}; I_C = 0\text{ A}$	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 10\text{ V}$; note 1 $I_C = 1\text{ mA}$ $I_C = 10\text{ mA}$ $I_C = 30\text{ mA}$	25 40 40	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 20\text{ mA}; I_B = 2\text{ mA}$; note 1	–	500	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = 20\text{ mA}; I_B = 2\text{ mA}$; note 1	–	900	mV
C_c	collector capacitance MPSA42 MPSA43	$V_{CB} = 20\text{ V}; I_E = i_e = 0\text{ A}; f = 1\text{ MHz}$	–	3 4	pF pF
f_T	transition frequency	$V_{CE} = 20\text{ V}; I_C = 10\text{ mA}; f = 100\text{ MHz}$	50	–	MHz

Note

1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.

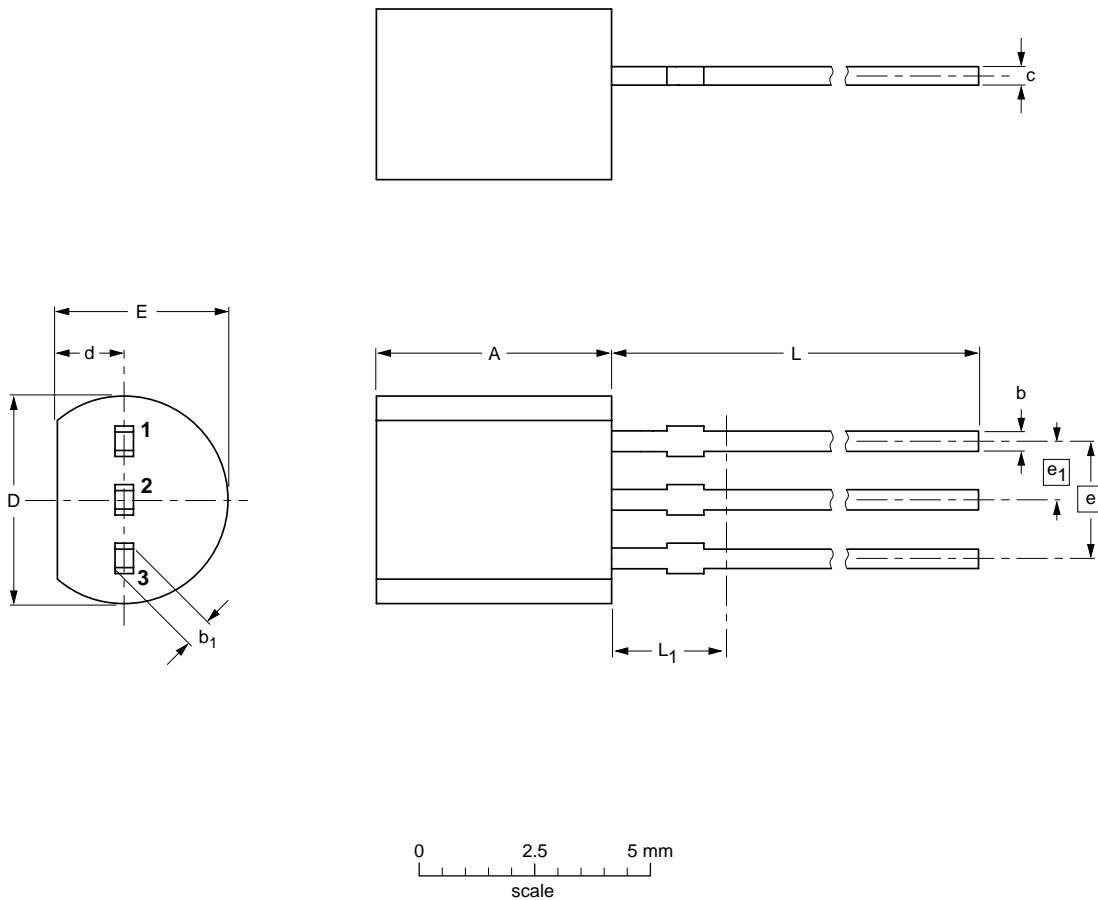
NPN high-voltage transistors

MPSA42; MPSA43

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		-97-02-28 04-06-28

NPN high-voltage transistors

MPSA42; MPSA43

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
II	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
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Notes

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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.

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Printed in The Netherlands

R75/05/pp6

Date of release: 2004 Oct 11

Document order number: 9397 750 13611

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