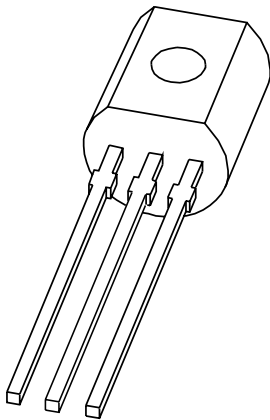


DATA SHEET



MPSA44 NPN high-voltage transistor

Product data sheet
Supersedes data of 1999 Apr 27

2004 Oct 11

NPN high-voltage transistor

MPSA44

FEATURES

- Low current (max. 300 mA)
- High voltage (max. 400 V).

APPLICATIONS

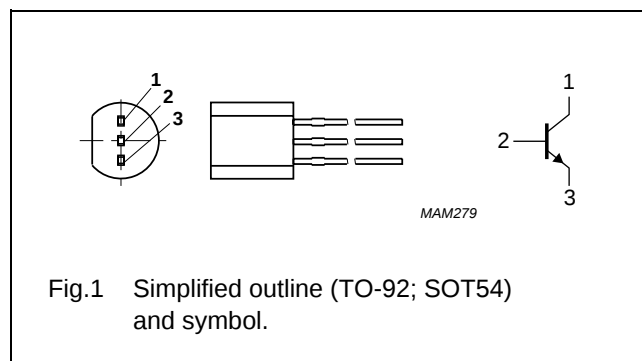
- Telecommunication applications.

DESCRIPTION

NPN high-voltage transistor in a TO-92; SOT54 plastic package.

PINNING

PIN	DESCRIPTION
1	collector
2	base
3	emitter



ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
MPSA44	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	–	500	V
V_{CEO}	collector-emitter voltage	open base	–	400	V
V_{EBO}	emitter-base voltage	open collector	–	6	V
I_C	collector current (DC)		–	300	mA
I_{CM}	peak collector current		–	600	mA
I_{BM}	peak base current		–	100	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.

NPN high-voltage transistor

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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	$V_{CB} = 400\text{ V}; I_E = 0\text{ A}$	–	100	nA
		$V_{CB} = 400\text{ V}; I_E = 0\text{ A}; T_j = 150\text{ }^{\circ}\text{C}$	–	10	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = 4\text{ V}; I_C = 0\text{ A}$	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 10\text{ V}; I_C = 1\text{ mA}$	40	–	
		$V_{CE} = 10\text{ V}; I_C = 10\text{ mA}$	50	200	
		$V_{CE} = 10\text{ V}; I_C = 50\text{ mA}; \text{note 1}$	45	–	
		$V_{CE} = 10\text{ V}; I_C = 100\text{ mA}; \text{note 1}$	40	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 1\text{ mA}; I_B = 0.1\text{ mA}$	–	400	mV
		$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	–	500	mV
		$I_C = 50\text{ mA}; I_B = 5\text{ mA}; \text{note 1}$	–	750	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 1\text{ mA}; \text{note 1}$	–	850	mV
C_c	collector capacitance	$V_{CB} = 20\text{ V}; I_E = I_e = 0\text{ A}; f = 1\text{ MHz}$	–	7	pF
C_e	emitter capacitance	$V_{EB} = 0.5\text{ V}; I_C = I_c = 0\text{ A}; f = 1\text{ MHz}$	–	180	pF
f_T	transition frequency	$V_{CE} = 10\text{ V}; I_C = 10\text{ mA}; f = 100\text{ MHz}$	20	–	MHz

Note

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

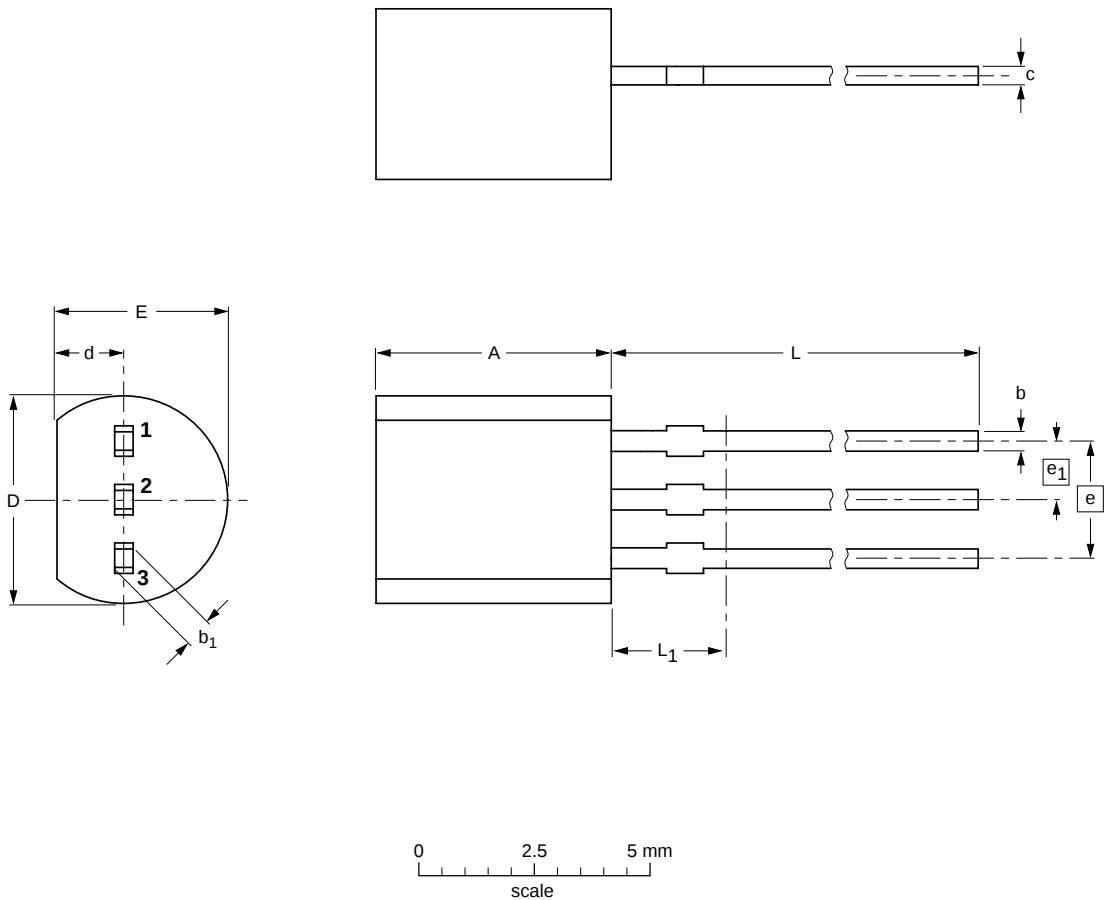
NPN high-voltage transistor

MPSA44

PACKAGE OUTLINE

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

SOT54

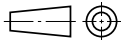


DIMENSIONS (mm are the original dimensions)

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