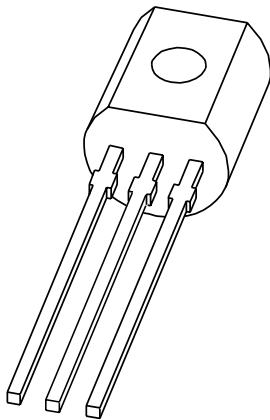


DATA SHEET



MPSA42; MPSA43 NPN high-voltage transistors

Product specification
Supersedes data of 1997 Sep 04

1999 Apr 12

NPN high-voltage transistors

MPSA42; MPSA43

FEATURES

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

APPLICATIONS

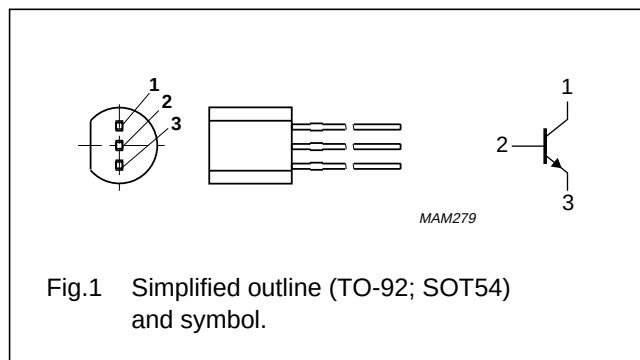
- Video
- Telephony
- Professional communication equipment.

DESCRIPTION

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

PINNING

PIN	DESCRIPTION
1	collector
2	base
3	emitter



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

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	$T_{amb} \leq 25\text{ °C}$	–	500	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°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

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current				
	MPSA42	$I_E = 0; V_{CB} = 200\text{ V}$	—	100	nA
	MPSA43	$I_E = 0; V_{CB} = 160\text{ V}$	—	100	nA
I_{EBO}	emitter cut-off current				
	MPSA42	$I_C = 0; V_{EB} = 6\text{ V}$	—	100	nA
	MPSA43	$I_C = 0; V_{EB} = 4\text{ V}$	—	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	$I_E = i_e = 0; V_{CB} = 20\text{ V}; f = 1\text{ MHz}$			
	MPSA42		—	3	pF
	MPSA43		—	4	pF
f_T	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 20\text{ V}; f = 100\text{ MHz}$	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

