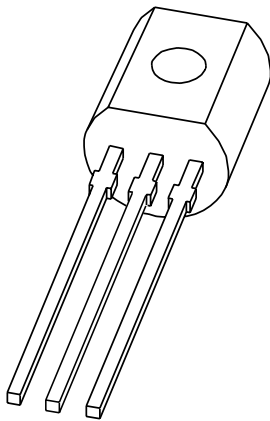


# DATA SHEET



## **MPSA26; MPSA27** **NPN Darlington transistors**

Product specification  
Supersedes data of 1997 Apr 17

1999 Apr 27

# NPN Darlington transistors

# MPSA26; MPSA27

### FEATURES

- High current (max. 500 mA)
- Low voltage (max. 60 V)
- High DC current gain (min. 10000).

### APPLICATIONS

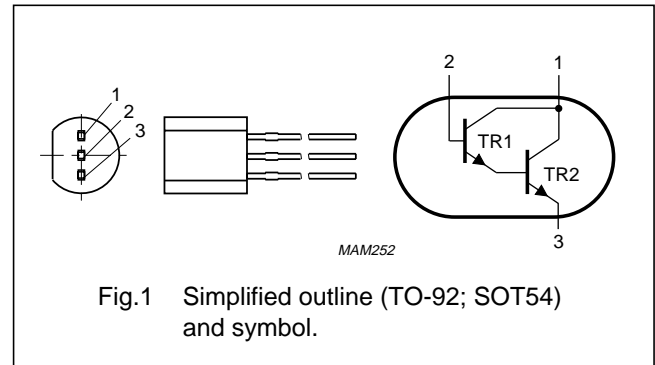
- High gain amplification.

### DESCRIPTION

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

### 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 <sub>CBO</sub>	collector-base voltage	open emitter			
	MPSA26		–	50	V
	MPSA27		–	60	V
V <sub>CES</sub>	collector-emitter voltage	V <sub>BE</sub> = 0			
	MPSA26		–	50	V
	MPSA27		–	60	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	10	V
I <sub>C</sub>	collector current (DC)		–	500	mA
I <sub>CM</sub>	peak collector current		–	1	A
I <sub>B</sub>	base current (DC)		–	100	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	–	500	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C
T <sub>amb</sub>	operating ambient temperature		–65	+150	°C

### Note

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

## NPN Darlington transistors

## MPSA26; MPSA27

## 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.

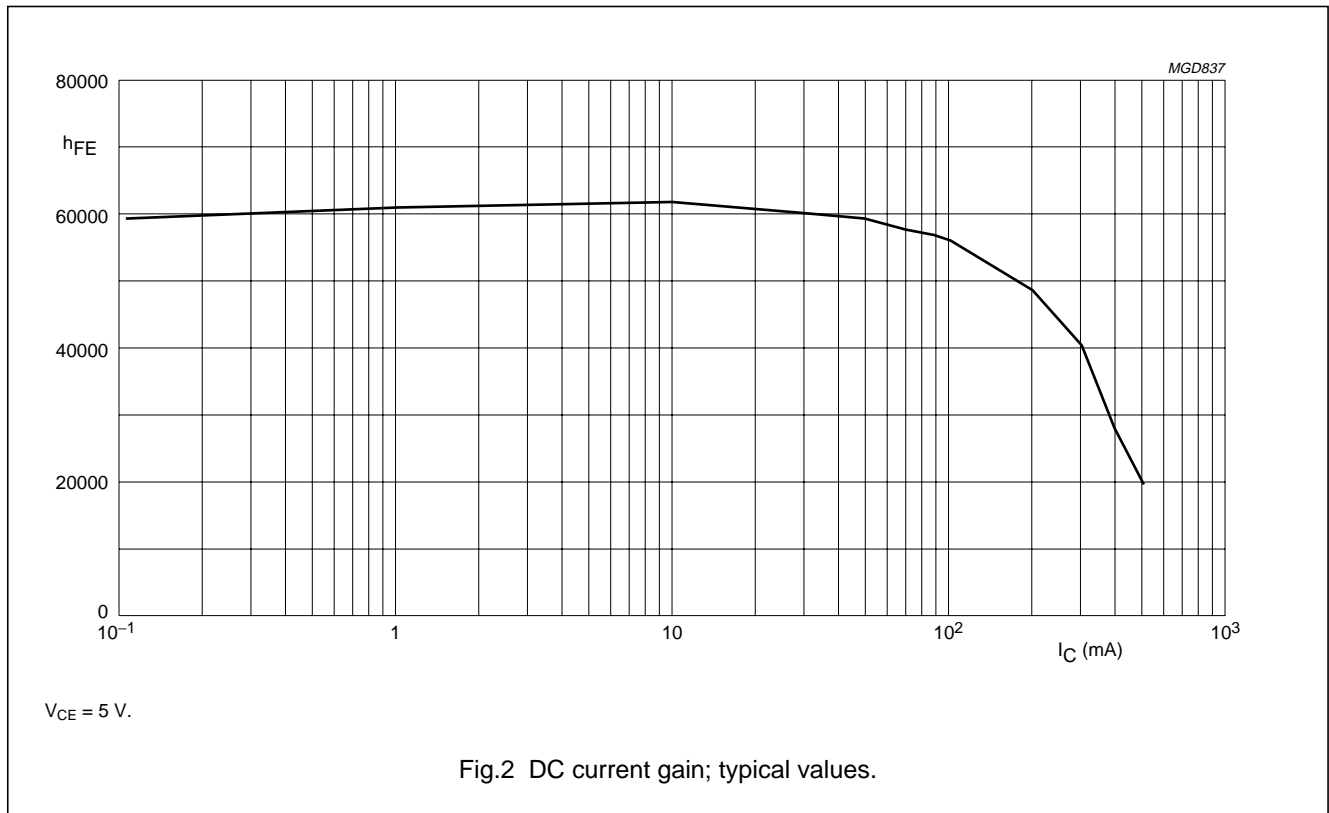
## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{CBO}$	collector cut-off current MPSA26	$I_E = 0; V_{CB} = 40\text{ V}$	–	–	100	nA
$I_{CBO}$	collector cut-off current MPSA27	$I_E = 0; V_{CB} = 50\text{ V}$	–	–	100	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = 10\text{ V}$	–	–	100	nA
$h_{FE}$	DC current gain	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V};$ see Fig.2	10000	–	–	
		$I_C = 100\text{ mA}; V_{CE} = 5\text{ V};$ see Fig.2	10000	–	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 100\text{ mA}; I_B = 0.1\text{ mA}$	–	–	1.5	V
$V_{BEsat}$	base-emitter saturation voltage	$I_C = 100\text{ mA}; I_B = 0.1\text{ mA}$	–	–	1.5	V
$V_{BEon}$	base-emitter on-state voltage	$I_C = 100\text{ mA}; V_{CE} = 5\text{ V}$	–	–	2	V
$f_T$	transition frequency	$I_C = 30\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	125	220	–	MHz

NPN Darlington transistors

MPSA26; MPSA27



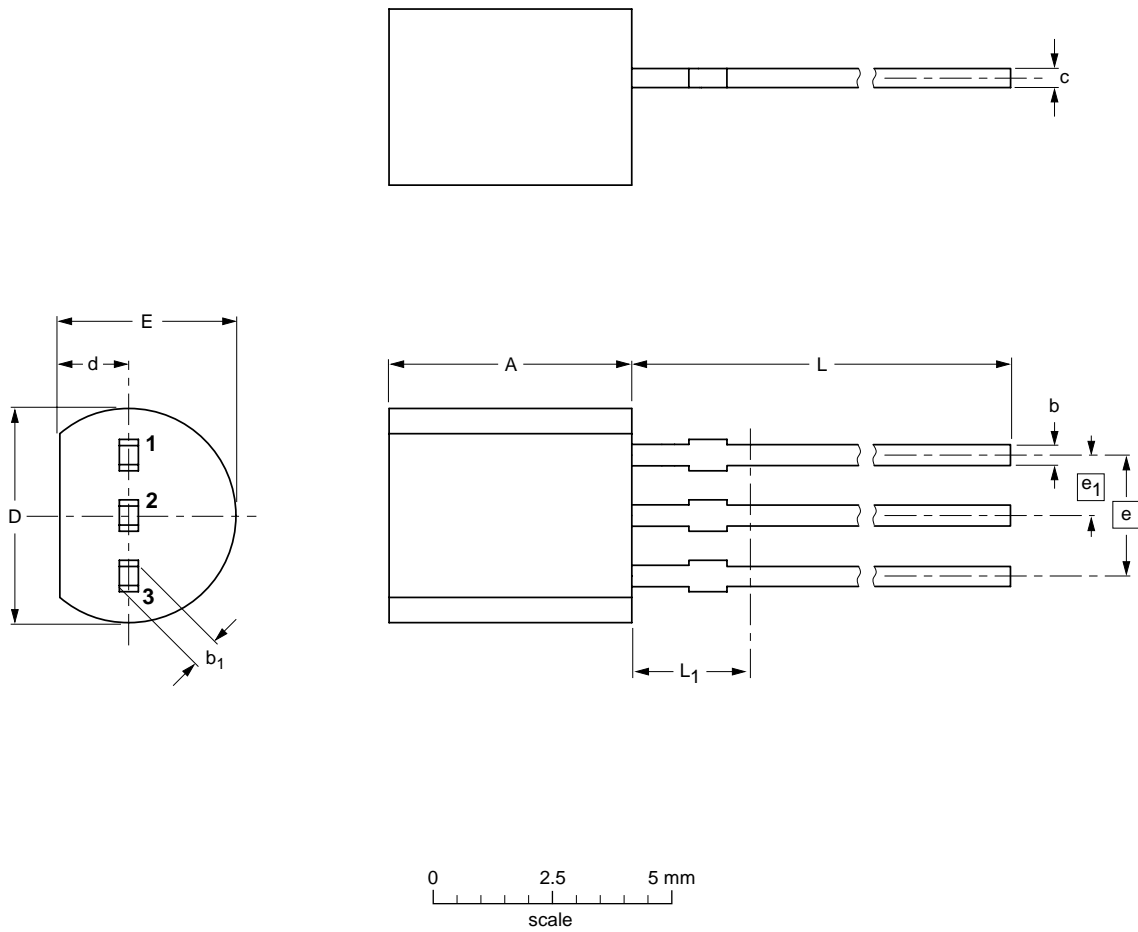
NPN Darlington transistors

MPSA26; MPSA27

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>
mm	5.2 5.0	0.48 0.40	0.66 0.56	0.45 0.40	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	EIAJ		
SOT54		TO-92	SC-43		97-02-28

## NPN Darlington transistors

## MPSA26; MPSA27

**DEFINITIONS**

<b>Data Sheet Status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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NPN Darlington transistors

MPSA26; MPSA27

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Printed in The Netherlands

115002/00/03/pp8

Date of release: 1999 Apr 27

Document order number: 9397 750 05423

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