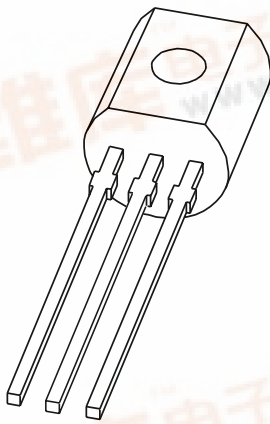


**DISCRETE SEMICONDUCTORS**

# DATA SHEET



**BSR62**

**PNP Darlington transistor**

Product specification

1999 Apr 26

Supersedes data of 1997 Apr 22

## PNP Darlington transistor

## BSR62

### FEATURES

- High current (max. 1 A)
- Low voltage (max. 80 V)
- Integrated diode and resistor.

### APPLICATIONS

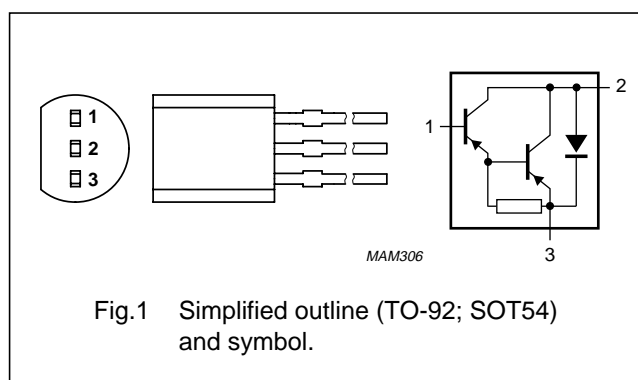
- Industrial applications such as:
  - Print hammer
  - Solenoid
  - Relay and lamp driving.

### DESCRIPTION

PNP Darlington transistor in a TO-92; SOT54 plastic package. NPN complement: BSR52.

### PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter



### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CB0}$	collector-base voltage	open emitter	–	–90	V
$V_{CES}$	collector-emitter voltage	$V_{BE} = 0$	–	–80	V
$V_{EBO}$	emitter-base voltage	open collector	–	–5	V
$I_C$	collector current (DC)		–	–1	A
$I_{CM}$	peak collector current		–	–2	A
$I_B$	base current (DC)		–	–0.2	A
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	0.83	W
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

### Note

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

## PNP Darlington transistor

BSR62

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	150	K/W

## Note

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

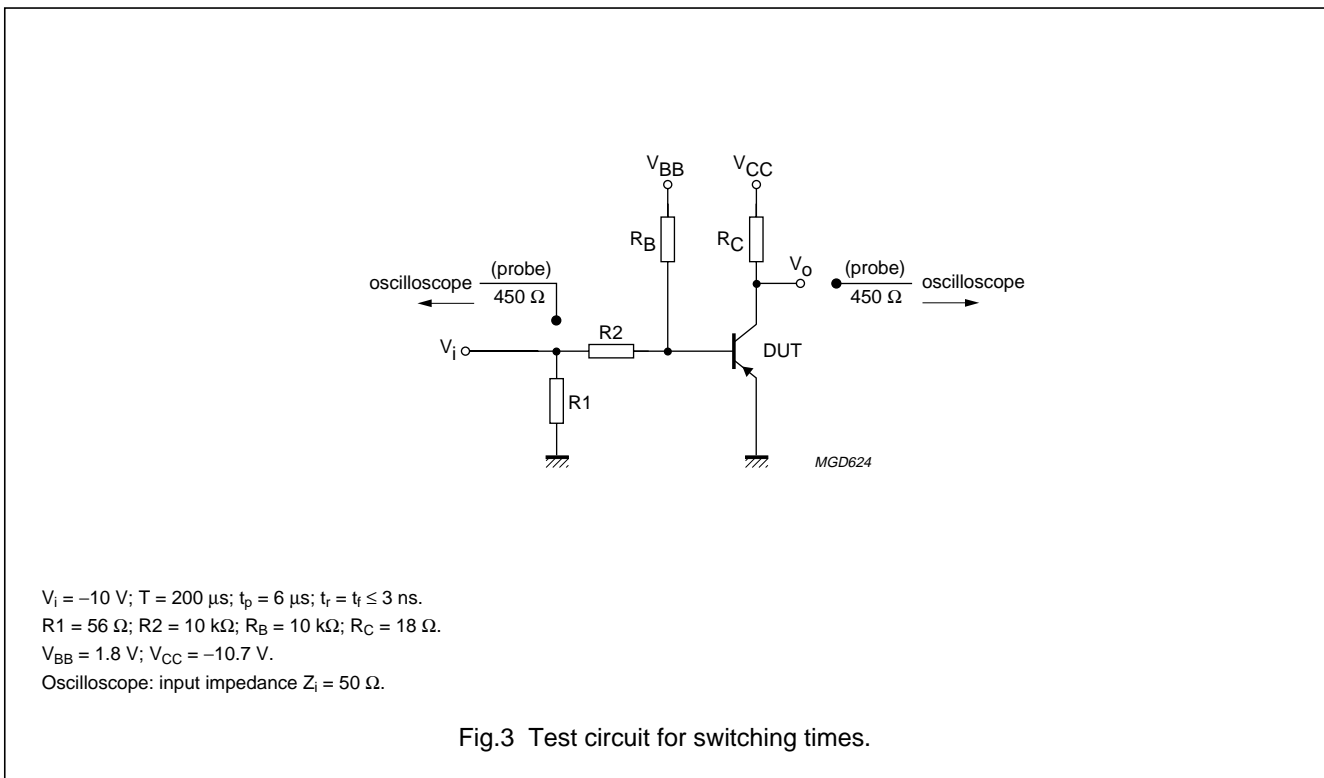
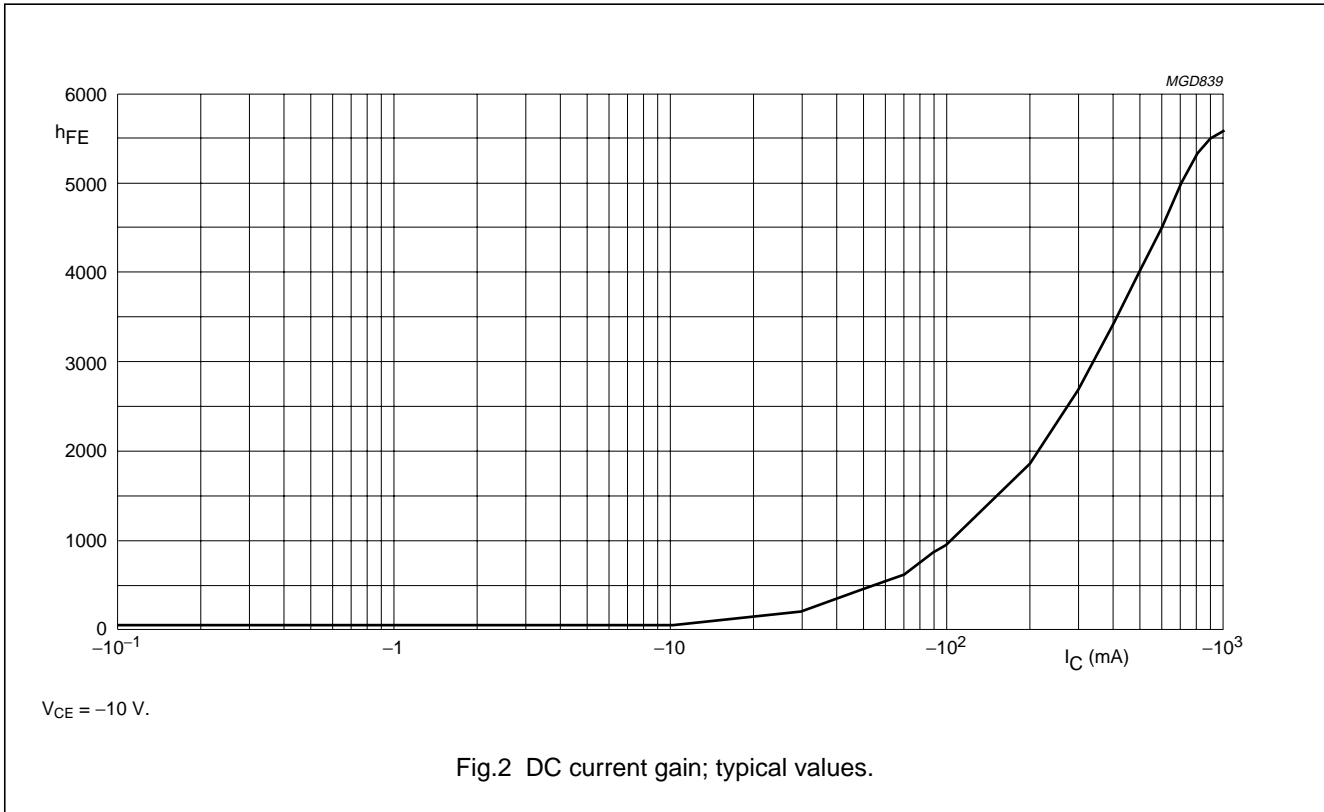
## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{CES}$	collector cut-off current	$V_{BE} = 0; V_{CE} = -80\text{ V}$	–	–	–50	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = -4\text{ V}$	–	–	–50	nA
$h_{FE}$	DC current gain	$V_{CE} = -10\text{ V}$ ; see Fig.2 $I_C = -150\text{ mA}$ $I_C = -500\text{ mA}$	1000 2000	– –	– –	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = -0.5\text{ A}; I_B = -0.5\text{ mA}$	–	–	–1.4	V
		$I_C = -1\text{ A}; I_B = -4\text{ mA}$	–	–	–1.8	V
$V_{BEsat}$	base-emitter saturation voltage	$I_C = -0.5\text{ A}; I_B = -0.5\text{ mA}$	–	–	–2	V
		$I_C = -1\text{ A}; I_B = -4\text{ mA}$	–	–	–2.4	V
$f_T$	transition frequency	$I_C = -500\text{ mA}; V_{CE} = -5\text{ V};$ $f = 100\text{ MHz}$	–	200	–	MHz
<b>Switching times (between 10% and 90% levels); see Fig.3</b>						
$t_{on}$	turn-on time	$I_{Con} = -500\text{ mA}; I_{Bon} = -0.5\text{ mA};$	–	–	0.5	$\mu\text{s}$
$t_{off}$	turn-off time	$I_{Boff} = 0.5\text{ mA}$	–	–	0.7	$\mu\text{s}$

PNP Darlington transistor

BSR62



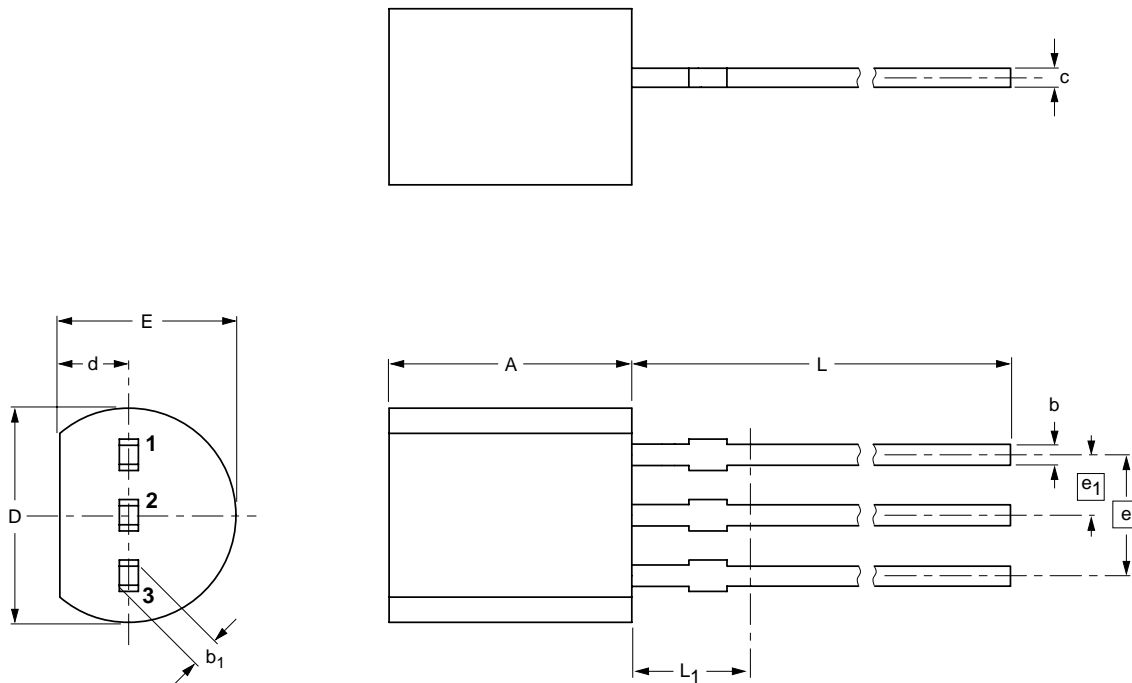
PNP Darlington transistor

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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>
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

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**PNP Darlington transistor****BSR62**

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**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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PNP Darlington transistor

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