

NPN Darlington transistor

PZTA14

FEATURES

- High current (max. 500 mA)
- Low voltage (max. 30 V).

APPLICATIONS

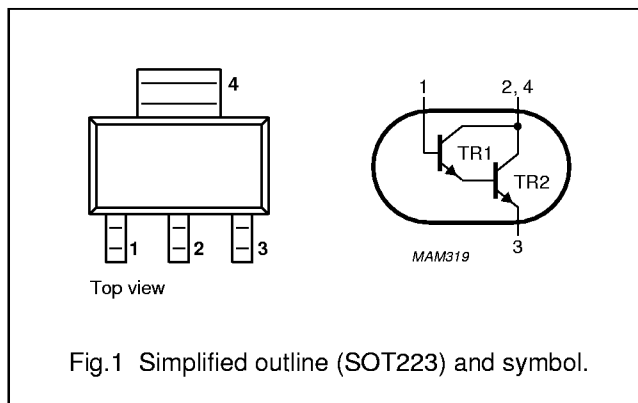
- Pre-amplifiers requiring high input impedance.

DESCRIPTION

NPN Darlington transistor in a SOT223 plastic package.
PNP complement: PZTA64.

PINNING

PIN	DESCRIPTION
1	base/input
2, 4	collector/output
3	emitter/ground



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	—	30	V
V_{CES}	collector-emitter voltage	$V_{BE} = 0$	—	30	V
V_{EBO}	emitter-base voltage	open collector	—	10	V
I_C	collector current (DC)		—	500	mA
I_{CM}	peak collector current		—	800	mA
I_B	base current (DC)		—	200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	—	1.25	W
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		—	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm². For other mounting conditions, see “Thermal considerations for SOT223 in the General Part of associated Handbook”.

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	100	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		19	K/W

Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm².
For other mounting conditions, see *"Thermal considerations for SOT223 in the General Part of associated Handbook"*.

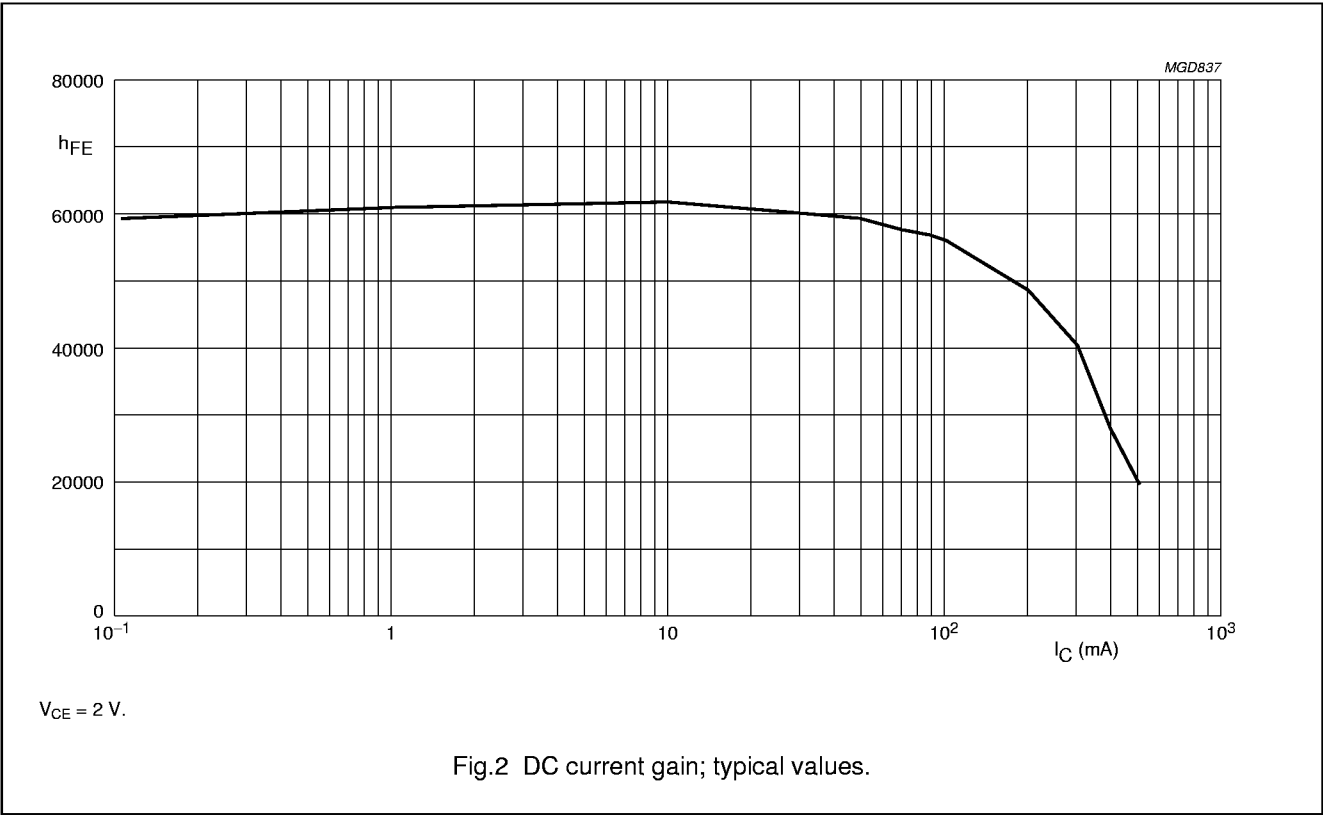
CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0$; $V_{CB} = 30\text{ V}$	–	100	nA
I_{CES}	collector cut-off current	$V_{BE} = 0$; $V_{CE} = 30\text{ V}$	–	100	nA
I_{EBO}	emitter cut-off current	$I_C = 0$; $V_{EB} = 10\text{ V}$	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 5\text{ V}$; (see Fig.2) $I_C = 10\text{ mA}$ $I_C = 100\text{ mA}$	10000 20000	– –	
V_{CEsat}	collector-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	$I_C = 10\text{ mA}$; $V_{CE} = 5\text{ V}$; $f = 100\text{ MHz}$	125	–	MHz

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PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads

SOT223

