

SMALL-SIGNAL DARLINGTON TRANSISTORS

NPN small-signal Darlington transistors in a microminiature SMD package (SOT-223).
Designed primarily for preamplifier input applications requiring high input impedance.
PNP complement is the PZTA63/64.

QUICK REFERENCE DATA

Collector-emitter voltage $V_{BE} = 0$	V_{CES}	max.	30 V
Collector current (DC)	I_C	max.	300 mA
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}$	P_{tot}	max.	1,5 W
Junction temperature	T_j	max.	150 $^\circ\text{C}$
DC current gain $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	PZTA13	h_{FE}	min. 5000
	PZTA14	h_{FE}	min. 10 000
Transition frequency at $f = 100\text{ MHz}$ $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$		f_T	min. 125 MHz

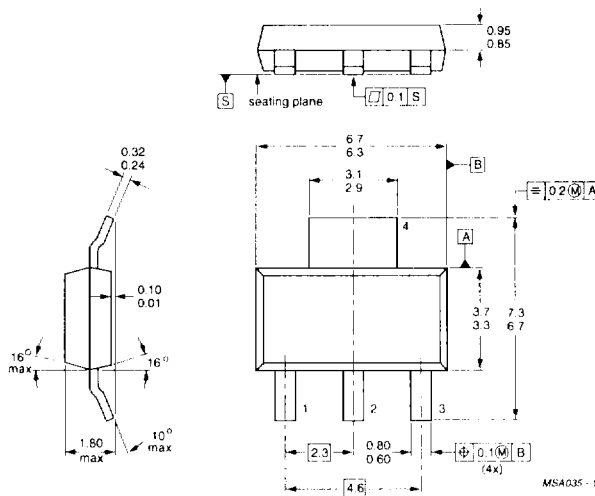
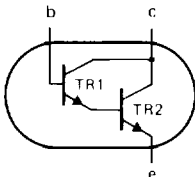
MECHANICAL DATA

Dimensions in mm

Fig. 1 SOT-223

Pinning

- 1 = Base
- 2 = Collector
- 3 = Emitter
- 4 = Collector



MSA035-1

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Collector-base voltage (open emitter)	V_{CBO}	max.	30 V
Collector-emitter voltage $V_{BE} = 0$	V_{CES}	max.	30 V
Emitter-base voltage (open collector)	V_{EBO}	max.	10 V
Collector current (DC)	I_C	max.	300 mA
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}^*$	P_{tot}	max.	1,5 W
Storage temperature range	T_{stg}		-65 to +150 $^\circ\text{C}$
Junction temperature	T_j	max.	150 $^\circ\text{C}$

THERMAL RESISTANCE

From junction to ambient*	$R_{th\ j-a}$		83,3 K/W
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CHARACTERISTICS

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

Collector-emitter breakdown voltage $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CES}$	min.	30 V
Emitter-base cut-off current $V_{BE} = 10\text{ V}$	I_{EBO}	max.	0,1 μA
Collector-base cut-off current $V_{CB} = 30\text{ V}$	I_{CBO}	max.	0,1 μA
DC current gain $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	PZTA13	h_{FE}	min. 5000
		h_{FE}	min. 10 000
	PZTA13	h_{FE}	min. 10 000
		PZTA14	h_{FE}
Collector-emitter saturation voltage $I_C = 100\text{ mA}; I_B = 0,1\text{ mA}$	V_{CEsat}	max.	1,5 V
Base-emitter ON voltage $I_C = 100\text{ mA}; V_{CE} = 5\text{ V}$	$V_{BE(on)}$	max.	2,0 V
Transition frequency at $f = 100\text{ MHz}$ $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	f_T	min.	125 MHz

* Device mounted on an epoxy printed circuit board 40 mm x 40 mm x 1,5 mm; mounting pad for the collector lead min. 6 cm².