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## PNP power Darlington transistor

### Features

- High current monolithic Darlington configuration
- Integrated antiparallel collector-emitter diode

### Applications

- Automotive fan control
- Linear and switching industrial equipment

### Description

The ST26025A is an epitaxial-base PNP power transistor in monolithic Darlington configuration mounted in TO-3 metal case. It is intended for general purpose amplifier and low frequency switching applications.

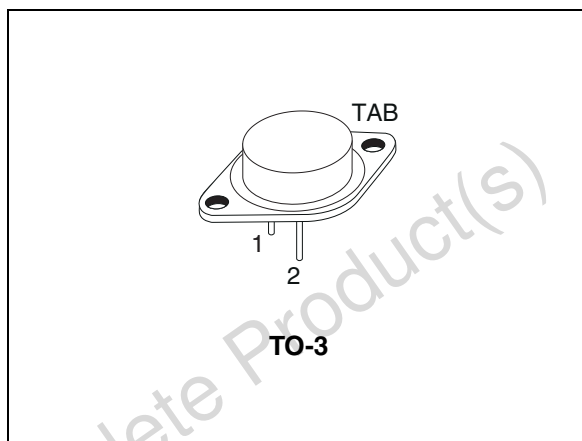


Figure 1. Internal schematic diagrams

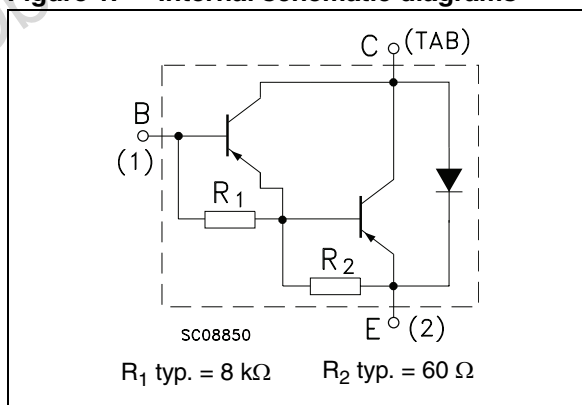


Table 1. Device summary

Order code	Marking	Package	Packaging
ST26025A	26025A	TO-3	Tray

# 1 Electrical ratings

**Table 2. Absolute maximum ratings**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base voltage ( $I_E = 0$ )	- 100	V
$V_{CEO}$	Collector-emitter voltage ( $I_B = 0$ )	- 100	V
$V_{EBO}$	Emitter-base voltage ( $I_C = 0$ )	- 5	V
$I_C$	Collector current	- 20	A
$I_{CM}$	Collector peak current ( $T_P < 5$ ms)	- 40	A
$I_B$	Base current	- 0.5	A
$P_{TOT}$	Total dissipation at $T_C = 25$ °C	160	W
$T_{STG}$	Storage temperature	- 65 to 200	°C
$T_J$	Max. operating junction temperature	200	

**Table 3. Thermal data**

Symbol	Parameter	Value	Unit
$R_{thJC}$	Thermal resistance junction-case max.	1.1	°C/W

## 2 Electrical characteristics

$T_{\text{case}} = 25\text{ °C}$ ; unless otherwise specified.

**Table 4. Electrical characteristics**

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$I_{\text{CEV}}$	Collector cut-off current ( $V_{\text{BE}} = 1.5\text{ V}$ )	$V_{\text{CE}} = -500\text{ V}$ $V_{\text{CE}} = -500\text{ V}$ $T_{\text{C}} = 150\text{ °C}$			- 0.5 - 5	mA mA
$I_{\text{CEO}}$	Collector cut-off current ( $I_{\text{B}} = 0$ )	$V_{\text{CE}} = -50\text{ V}$			- 1	mA
$I_{\text{EBO}}$	Emitter cut-off current ( $I_{\text{C}} = 0$ )	$V_{\text{EB}} = -5\text{ V}$			- 2	mA
$V_{\text{CEO(sus)}}^{(1)}$	Collector-emitter sustaining voltage ( $I_{\text{B}} = 0$ )	$I_{\text{C}} = -2\text{ mA}$ $I_{\text{C}} = -100\text{ mA}$	- 90 - 100			V V
$V_{\text{CE(sat)}}^{(1)}$	Collector-emitter saturation voltage	$I_{\text{C}} = -10\text{ A}$ $I_{\text{B}} = -40\text{ mA}$ $I_{\text{C}} = -20\text{ A}$ $I_{\text{B}} = -200\text{ mA}$			- 2 - 3	V V
$V_{\text{BE(sat)}}^{(1)}$	Base-emitter saturation voltage	$I_{\text{C}} = -20\text{ A}$ $I_{\text{B}} = -200\text{ mA}$			- 4	V
$h_{\text{FE}}^{(1)}$	DC current gain	$I_{\text{C}} = -2\text{ A}$ $V_{\text{CE}} = -3\text{ V}$ $I_{\text{C}} = -10\text{ A}$ $V_{\text{CE}} = -3\text{ V}$ $I_{\text{C}} = -30\text{ A}$ $V_{\text{CE}} = -3\text{ V}$	4500 750 200		18000	
$h_{\text{fe}}$	Small signal current gain	$I_{\text{C}} = -3\text{ A}$ $V_{\text{CE}} = -10\text{ V}$ $f = 1\text{ kHz}$	300			
$C_{\text{CBO}}$	Collector base capacitance ( $I_{\text{E}} = 0$ )	$V_{\text{CB}} = -10\text{ V}$ $f = 100\text{ kHz}$			600	pF

1. Pulse test: pulse duration  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$

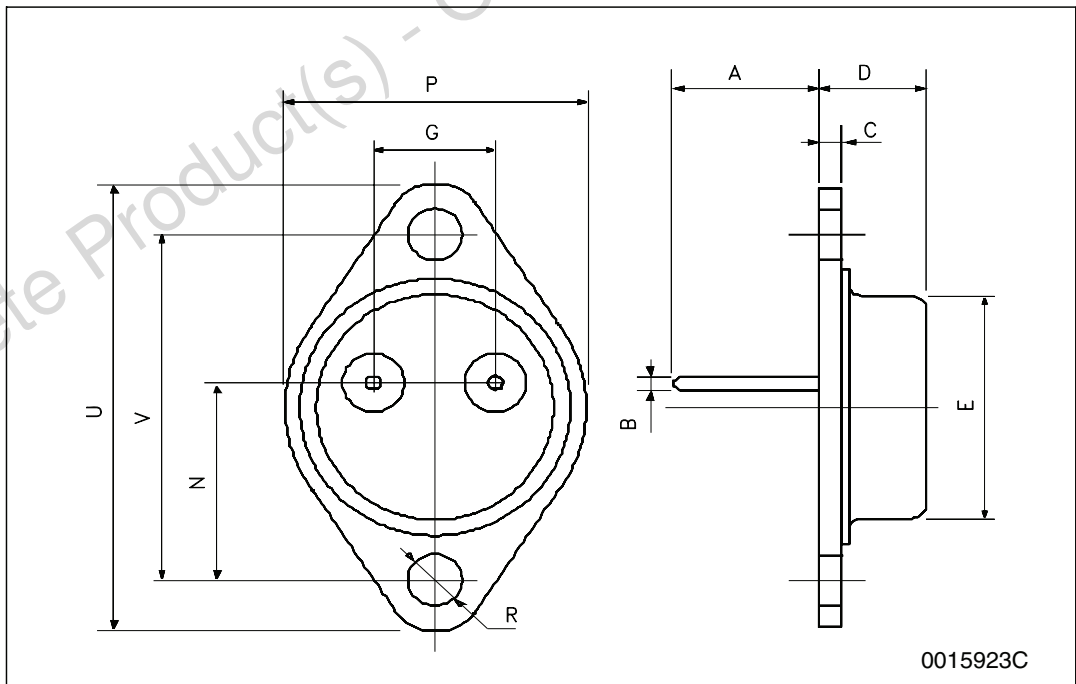
### 3 Package mechanical data

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: [www.st.com](http://www.st.com). ECOPACK® is an ST trademark.

Obsolete Product(s) - Obsolete Product(s)

**TO-3 mechanical data**

DIM.	mm.		
	min.	typ	max.
A	11.00		13.10
B	0.97		1.15
C	1.50		1.65
D	8.32		8.92
E	19.00		20.00
G	10.70		11.10
N	16.50		17.20
P	25.00		26.00
R	4.00		4.09
U	38.50		39.30
V	30.00		30.30





## 4 Revision history

**Table 5. Document revision history**

Date	Revision	Changes
12-Oct-2010	1	Initial release

Obsolete Product(s) - Obsolete Product(s)

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