

## PNP power Darlington transistor

### Features

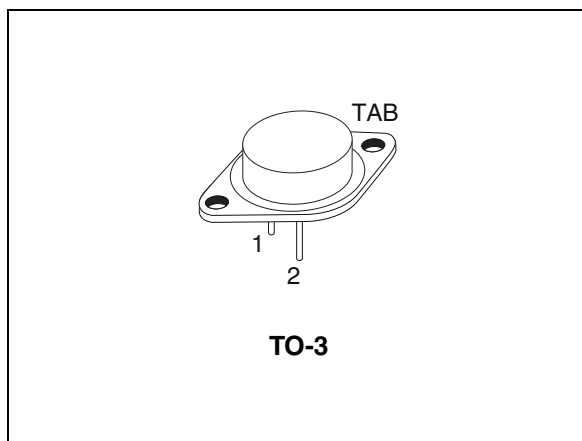
- High current monolithic Darlington configuration
- Integrated antiparallel collector-emitter diode

### Applications

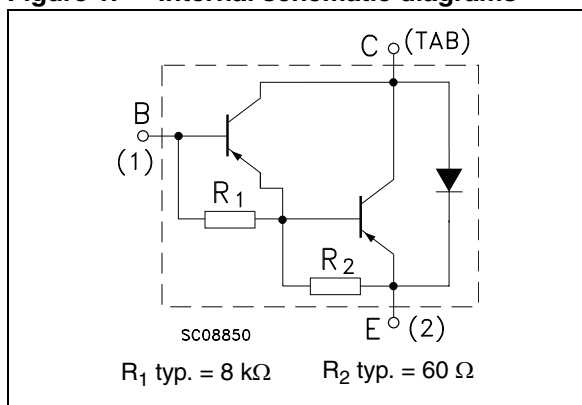
- Automotive fan control
- Linear and switching industrial equipment

### 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

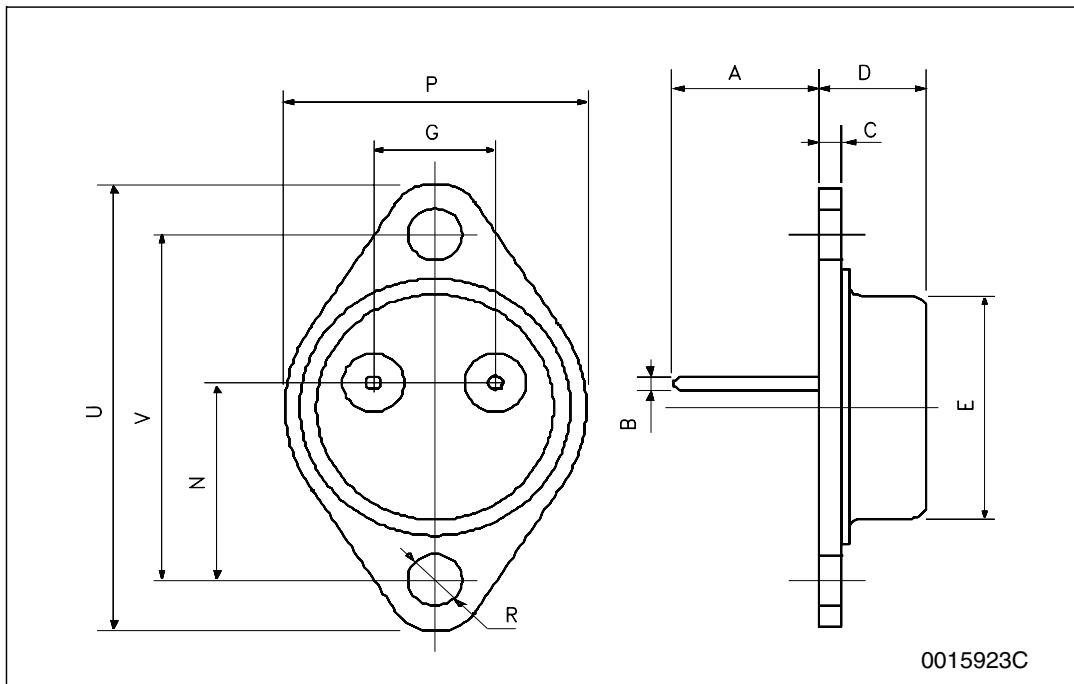
1. Pulse test: pulse duration  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$

### 3 Package mechanical data

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**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

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