

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.

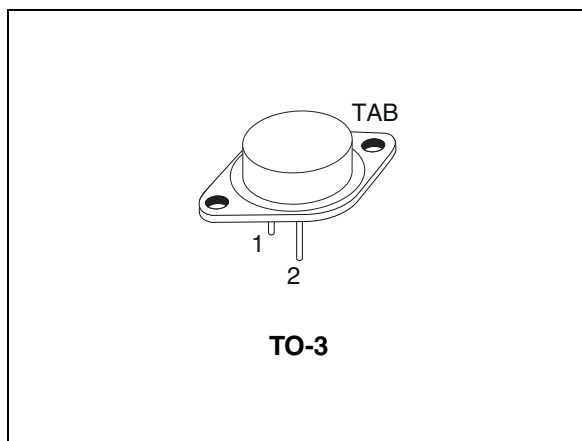


Figure 1. Internal schematic diagrams

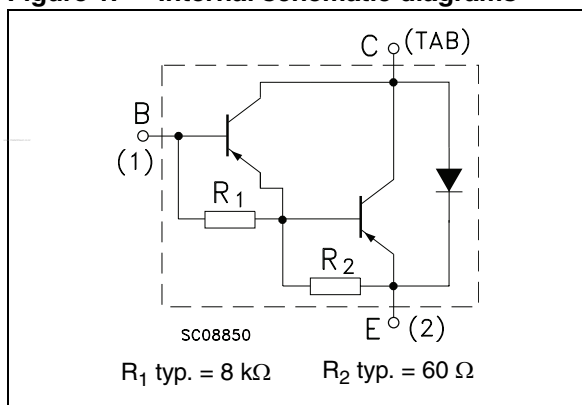


Table 1. Device summary

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_{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_{CEO}	Collector cut-off current ($I_{\text{B}} = 0$)	$V_{\text{CE}} = -50\text{ V}$			- 1	mA
I_{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_{fe}	Small signal current gain	$I_{\text{C}} = -3\text{ A}$ $V_{\text{CE}} = -10\text{ V}$ $f = 1\text{ kHz}$	300			
C_{CBO}	Collector base capacitance ($I_{\text{E}} = 0$)	$V_{\text{CB}} = -10\text{ V}$ $f = 100\text{ kHz}$			600	pF

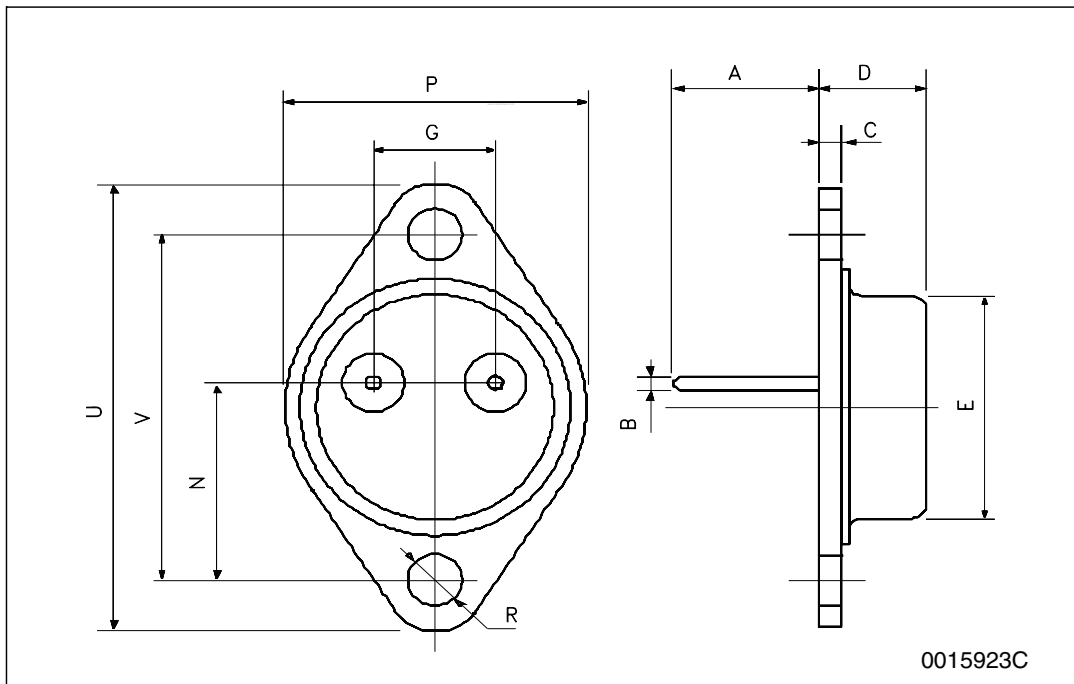
1. Pulse test: pulse duration $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$

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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