ST26025A

PNP power Darlington transistor

Features

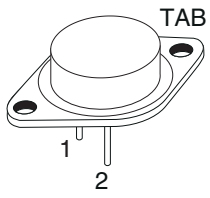
- High current monolithic Darlington configuration
- Integrated antiparallel collector-emitter diode

Applications

- Automotive fan control
- Linear and switching industrial equipment

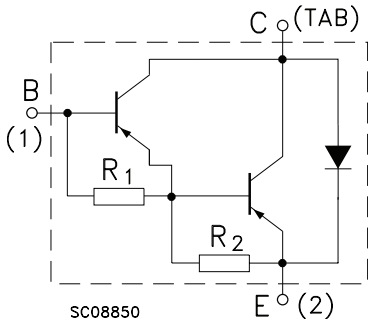
Description

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.



TO-3

Figure 1. Internal schematic diagrams



R_1 typ. = 8 kΩ R_2 typ. = 60 Ω

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_{case} = 25 °C; unless otherwise specified.

Table 4. Electrical characteristics

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

1. Pulse test: pulse duration ≤ 300 µs, duty cycle ≤ 2 %

3 Package mechanical data

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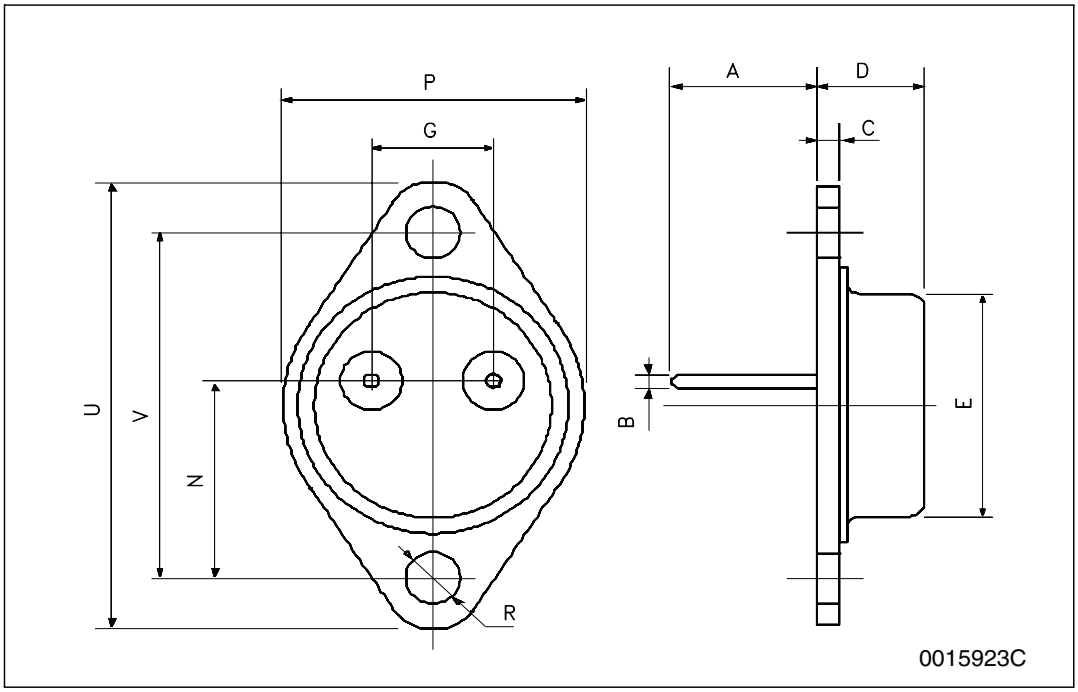
TO-3 mechanical data

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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