STX826

Low voltage PNP transistor

Features

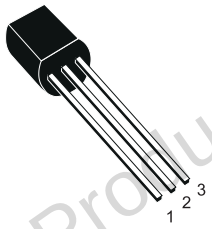
- TO-92 package suitable for through-hole PCB assembly

Application

- Voltage regulation
- Relay driver
- Generic switch

Description

The STX826 is a low voltage PNP transistor manufactured in planar technology with base island layout.



TO-92

Figure 1. Internal schematic diagram

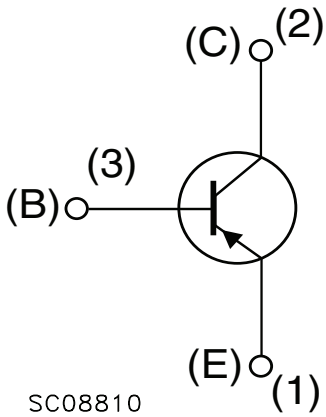


Table 1. Device summary

Order code	Marking	Package	Packaging
STX826	X826	TO-92	Bag

1 Electrical ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base voltage (I_E = 0)	-60	V
V_{CEO}	Collector-emitter voltage (I_B = 0)	-30	V
V_{EBO}	Emitter-base voltage (I_C = 0)	-5	V
I_C	Collector current	-3	A
I_{CM}	Collector peak current (t_P < 5 ms)	-6	A
I_B	Base current	-1	A
I_{BM}	Base peak current (t_P < 5 ms)	-2	A
P_{tot}	Total dissipation at T_a = 25 °C	0.9	W
T_{stg}	Storage temperature	-65 to 150	°C
T_J	Max. operating junction temperature	150	°C

Table 3. Thermal data

Symbol	Parameter	Value	Unit
$R_{thj\text{-}case}$	Thermal resistance junction-case max	44.6	°C/W
$R_{thj\text{-}amb}$	Thermal resistance junction-ambient max	139	°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_{CES}	Collector cut-off current (V_{BE} = 0)	V_{CE} = -60 V			-10	µA
I_{CEO}	Collector cut-off current (I_B = 0)	V_{CE}= -30 V			-100	µA
I_{EBO}	Emitter cut-off current (I_C = 0)	V_{EB}= -5 V			-10	µA
$V_{(BR)CBO}$	Collector-base breakdown voltage (I_E = 0)	I_C = -100 µA	-60			V
$V_{(BR)CEO}$(1)	Collector-emitter breakdown voltage (I_B = 0)	I_C = -10 mA	-30			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage (I_C = 0)	I_E = -100 µA	-5			V
$V_{CE(sat)}$(1)	Collector-emitter saturation voltage	I_C = -1 A I_B = -50 mA I_C = -2 A I_B = -100 mA I_C = -3 A I_B = -150 mA			-0.4 -0.7 -1.1	V V V
$V_{BE(sat)}$(1)	Base-emitter saturation voltage	I_C = -2 A I_B = -100 mA			-1.2	V
h_{FE}	DC current gain	I_C = -100 mA V_{CE} = -2 V I_C = -1 A V_{CE} = -2 V I_C = -3 A V_{CE} = -2 V	100 80 30		300	
f_T	Transition frequency	V_{CE} = -10 V I_C = -0.1 A		100		MHz

1. Pulse duration = 300 µs, duty cycle ≤ 1.5 %

2.1 Electrical characteristics (curves)

Figure 2. DC current gain (V_{CE}=2 V)

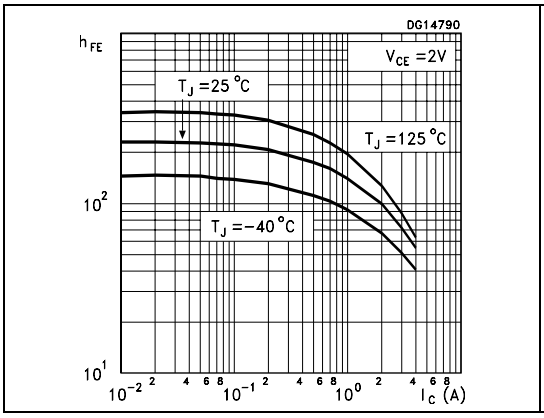


Figure 3. DC Current Gain (V_{CE}=5 V)

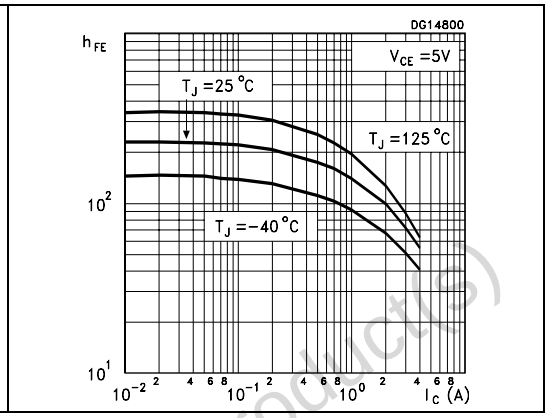


Figure 4. Collector-emitter saturation voltage

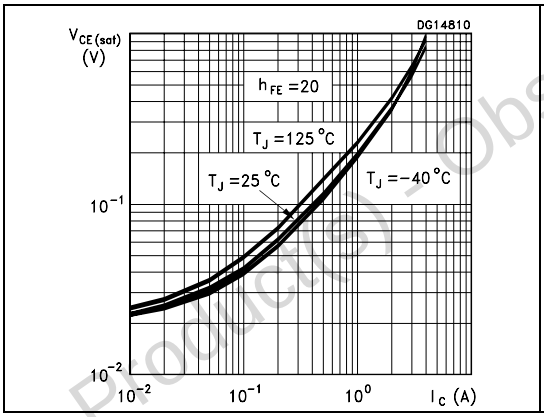


Figure 5. Base-emitter saturation voltage

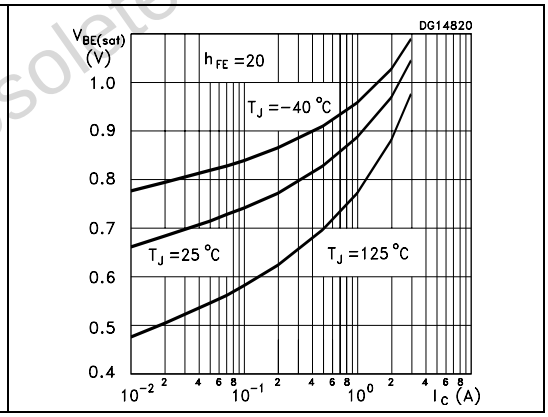


Figure 6. Resistive load switching time (OFF)

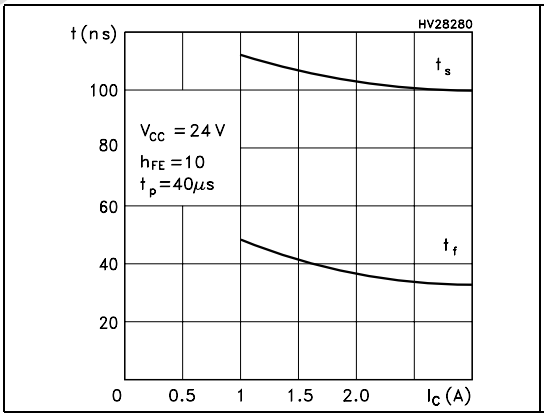


Figure 7. Resistive load switching time (ON)

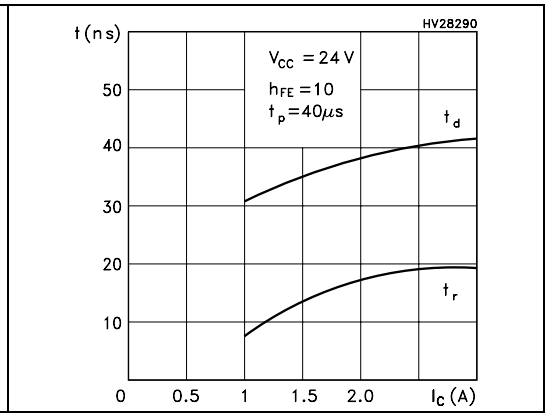


Figure 8. Reverse biased safe operating area

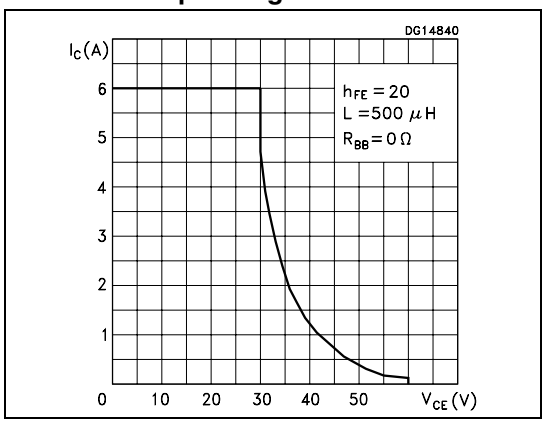
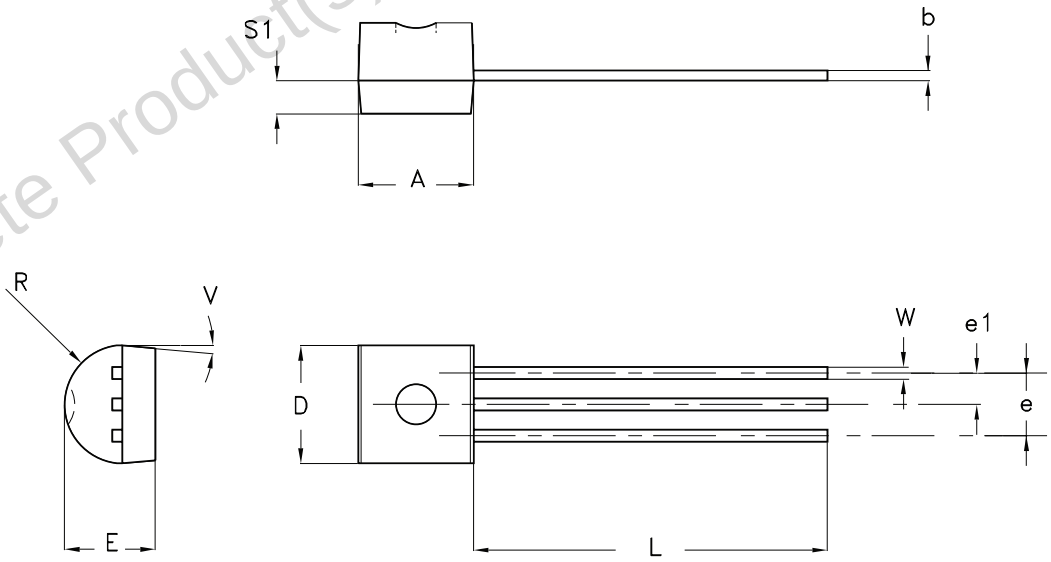


Table 5. TO-92 mechanical data

Dim.	mm		
	Min.	Typ.	Max.
A	4.32		4.95
b	0.36		0.51
D	4.45		4.95
E	3.30		3.94
e	2.41		2.67
e1	1.14		1.40
L	12.70		15.49
R	2.16		2.41
S1	0.92		1.52
W	0.41		0.56
V		5°	

Figure 9. TO-92 drawings



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. ECOPACK is an ST trademark.

4 Revision history

Table 6. Document revision history

Date	Revision	Changes
18-Oct-2005	2	Curves inserted
27-Apr-2011	3	Changed: *Figure 1*

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