



STN9260

High voltage fast-switching PNP power transistor

Preliminary data

Features

- High voltage capability
- Very high switching speed

Application

- Electronics ballasts for fluorescent lighting

Description

The device is manufactured using high voltage multi-epitaxial planar technology for high switching speeds and high voltage capability. It uses a cellular emitter structure with planar edge termination to enhance switching speeds while maintaining the wide RBSOA.

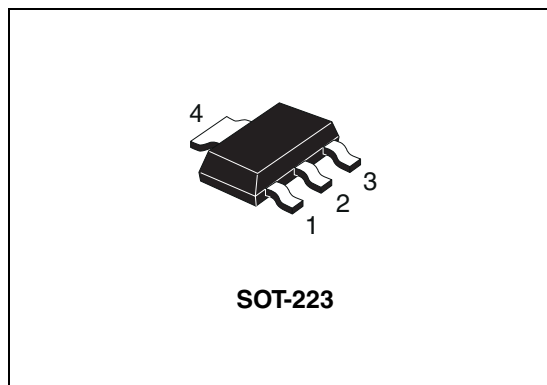


Figure 1. Internal schematic diagram

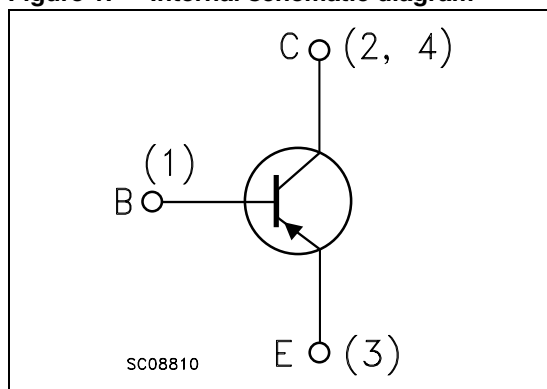


Table 1. Device summary

Part number	Marking	Package	Packaging
STN9260	N9260	SOT-223	Tape and reel

1 Electrical ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CES}	Collector-emitter voltage ($V_{BE} = 0$)	-600	V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	-600	V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	-7	V
I_C	Collector current	-0.5	A
I_{CM}	Collector peak current ($t_P < 5$ ms)	-1	A
I_B	Base current	-0.25	A
I_{BM}	Base peak current ($t_P < 5$ ms)	-0.5	A
P_{TOT}	Total dissipation at $T_a = 25$ °C	1.6	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_{thJA}	Thermal resistance junction-ambient ⁽¹⁾ max	78	°C/W

1. Device mounted on PCB area of 1 cm².

2 Electrical characteristics

$T_{\text{case}} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

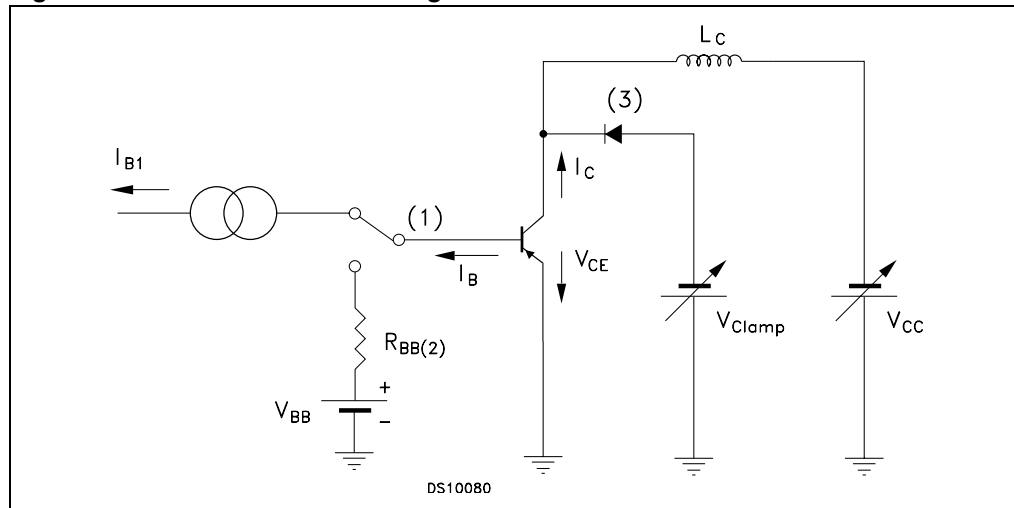
Table 4. Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector cut-off current ($V_{\text{BE}} = 0$)	$V_{\text{CE}} = -600\text{ V}$			-10	μA
I_{EBO}	Emitter cut-off current ($I_{\text{C}} = 0$)	$V_{\text{EB}} = -7\text{ V}$			-1	μA
$V_{\text{CE(sus)}}^{(1)}$	Collector-emitter sustaining voltage ($I_{\text{B}} = 0$)	$I_{\text{C}} = -10\text{ mA}$	-600			V
$V_{\text{CE(sat)}}^{(1)}$	Collector-emitter saturation voltage	$I_{\text{C}} = -100\text{ mA}$ $I_{\text{B}} = -10\text{ mA}$			-1	V
$V_{\text{BE(sat)}}^{(1)}$	Base-emitter saturation voltage	$I_{\text{C}} = -100\text{ mA}$ $I_{\text{B}} = -10\text{ mA}$			-1	V
h_{FE}	DC current gain	$I_{\text{C}} = -10\text{ mA}$ $V_{\text{CE}} = -5\text{ V}$ $I_{\text{C}} = -20\text{ mA}$ $V_{\text{CE}} = -5\text{ V}$	50	100		
t_{s} t_{f}	Resistive load Storage time Fall time	TBD				
t_{s} t_{f}	Inductive load Storage time Fall time	TBD				

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

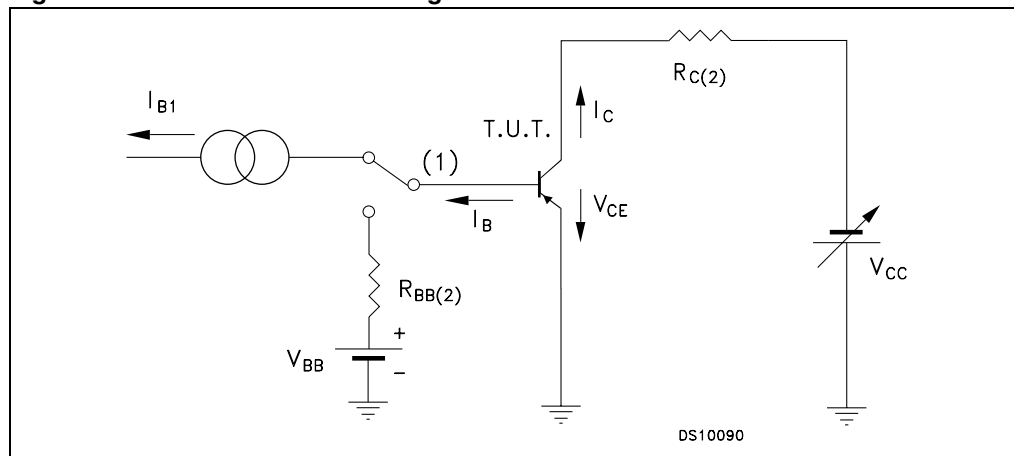
2.1 Test circuits

Figure 2. Inductive load switching test circuit



1. Fast electronic switching
2. Non-inductive resistor
3. Fast recovery rectifier

Figure 3. Resistive load switching test circuit

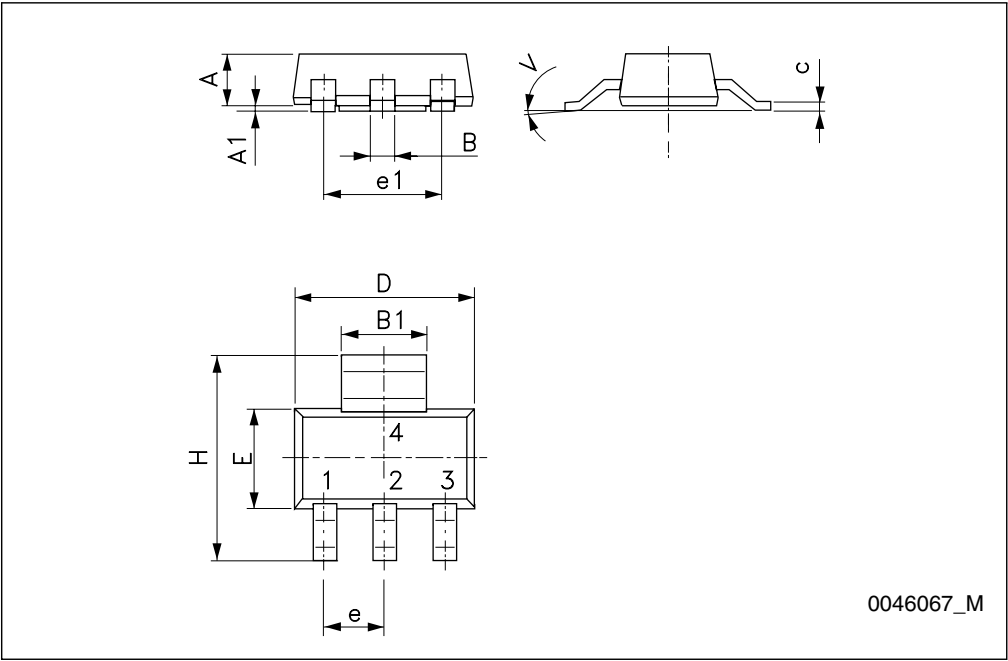


1. Fast electronic switching
2. Non-inductive resistor

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.

SOT-223 mechanical data			
Dim.	mm.		
	Min.	Typ.	Max.
A			1.80
A1	0.02		0.1
B	0.60	0.70	0.85
B1	2.90	3.00	3.15
c	0.24	0.26	0.35
D	6.30	6.50	6.70
e		2.30	
e1		4.60	
E	3.30	3.50	3.70
H	6.70	7.00	7.30
V			10 °



4 Revision history

Table 5. Document revision history

Date	Revision	Changes
13-Dec-2010	1	Initial release.

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