STN0214

Very high voltage NPN power transistor

Features

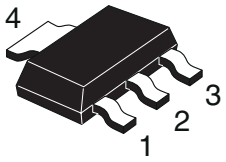
- High gain
- Very high voltage capability

Applications

- Haptic
- High voltage solenoid driving

Description

The device is an NPN power bipolar transistor manufactured using the latest high-voltage diffused collector technology.



SOT-223

Figure 1. Internal schematic diagram

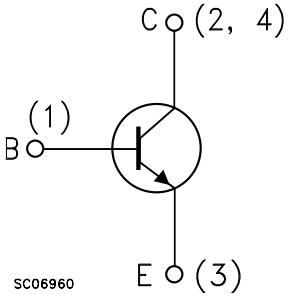


Table 1. Device summary

Order code	Marking	Package	Packaging
STN0214	N0214	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)	1400	V
V_{CEO}	Collector-emitter voltage (I_B = 0)	1200	V
V_{EBO}	Emitter-base voltage (I_C = 0)	6	V
I_C	Collector current	200	mA
I_{CM}	Collector peak current (t_P < 5 ms)	400	mA
I_B	Base current	100	mA
I_{BM}	Base peak current (t_P < 1 ms)	200	mA
P_{TOT}	Total dissipation at T_{amb} = 25 °C	1.6	W
T_{stg}	Storage temperature	-65 to 150	°C
T_J	Max. operating junction temperature	150	

Table 3. Thermal data

Symbol	Parameter	Value	Unit
$R_{thj\text{-}amb}$ (1)	Thermal resistance junction-ambient	78	°C/W

1. When mounted on PCB area of 1 cm^2, t < 10 sec

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} = 1400 V			10	µA
I_{EBO}	Emitter cut-off current (I_B = 0)	V_{EB} = 6 V			10	µA
$V_{CEO(sus)}$ (1)	Collector-emitter sustaining voltage (I_B = 0)	I_C = 1 mA	1200			V
$V_{CE(sat)}$ (1)	Collector-emitter saturation voltage	I_C = 10 mA, I_B = 2 mA I_C = 100 mA, I_B = 20 mA		0.1 0.3		V V
$V_{BE(sat)}$ (1)	Base-emitter saturation voltage	I_C = 100 mA, I_B = 20 mA		0.8		V
h_{FE} (1)	DC current gain	I_C = 1 mA, V_{CE} = 2 V I_C = 200 mA, V_{CE} = 2 V		20 3		

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

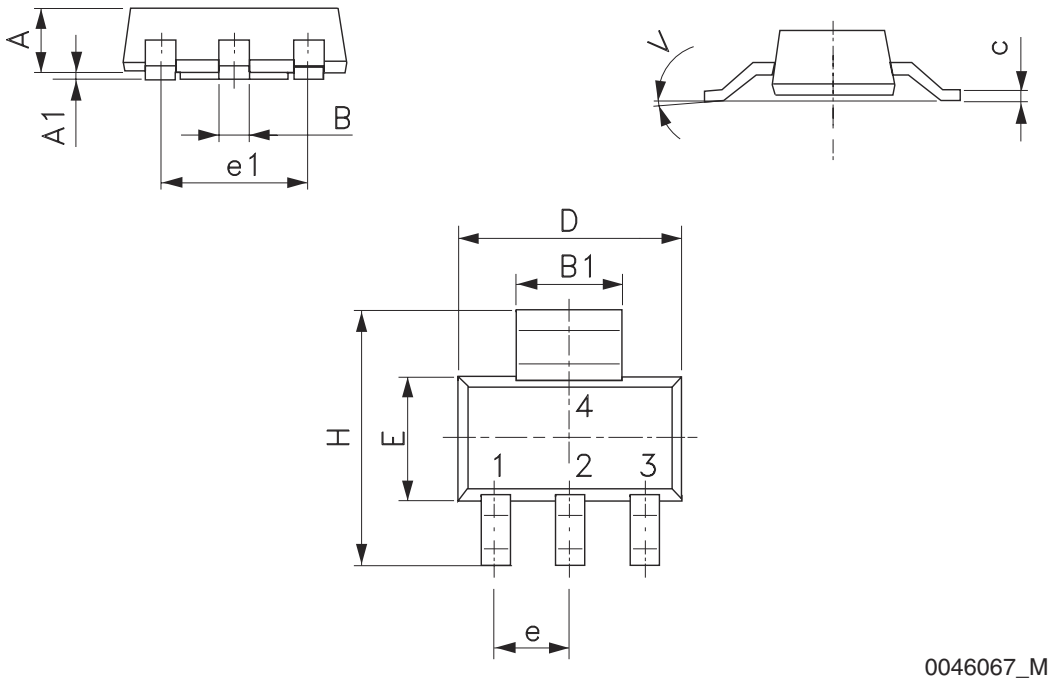
3 Package mechanical data

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.

Table 5. 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°

Figure 2. SOT-223 mechanical data drawing



4 Revision history

Table 6. Document revision history

Date	Revision	Changes
02-Feb-2012	1	First release

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