

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.

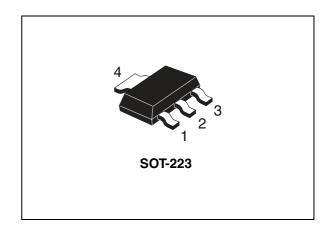


Figure 1. Internal schematic diagram

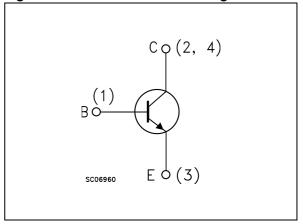


Table 1. Device summary

Order code	Marking	Package	Packaging
STN0214	N0214	SOT-223	Tape and reel

Electrical ratings STN0214

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		W	
T _{stg}	Storage temperature	-65 to 150	o 150 °C	
TJ	Max. operating junction temperature	150	<u> </u>	

Table 3. Thermal data

Symbol	Parameter	Value	Unit
R _{thj-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

 $(T_{CASE} = 25 \, ^{\circ}C; \text{ unless otherwise specified})$

Table 4. Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Тур.	Max.	Unit
I _{CES}	Collector cut-off current (V _{BE} = 0)	V _{CE} = 1400 V			10	μА
I _{EBO}	Emitter cut-off current (I _B = 0)	V _{EB} = 6 V			10	μΑ
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		2 mA 20 mA	0.1 0.3		V V
V _{BE(sat)} (1)	Base-emitter saturation voltage	$I_C = 100 \text{ mA}$ $I_B =$	20 mA	0.8		V
h _{FE} ⁽¹⁾	DC current gain	$\begin{split} I_C &= 1 \text{ mA} & V_{CE} \\ I_C &= 200 \text{ mA} & V_{CE} \end{split}$	E = 2 V E = 2 V	20 3		

^{1.} Pulsed duration = 300 μs , duty cycle \leq 1.5 %

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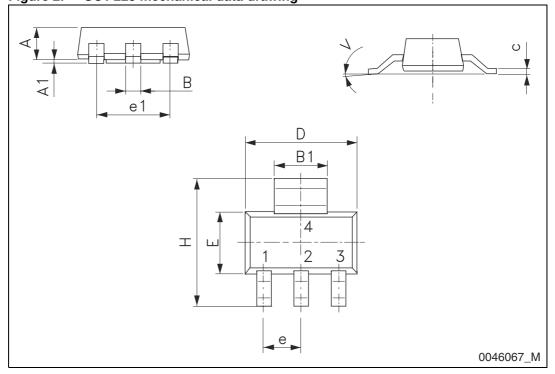
3 Package mechanical data

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Table 5. SOT-223 mechanical data

Dim.	mm			
	Min.	Тур.	Max.	
А			1.80	
A1	0.02		0.1	
В	0.60	0.70	0.85	
B1	2.90	3.00	3.15	
С	0.24	0.26	0.35	
D	6.30	6.50	6.70	
е		2.30		
e1		4.60		
E	3.30	3.50	3.70	
Н	6.70	7.00	7.30	
V			10°	

Figure 2. SOT-223 mechanical data drawing



Revision history STN0214

4 Revision history

Table 6. Document revision history

Date	Revision	Changes
02-Feb-2012	1	First release

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