1 Electrical ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CES}	Collector-emitter voltage (V_{BE} = 0)	1600	V
V_{CEO}	Collector-emitter voltage (I_B = 0)	800	V
V_{EBO}	Emitter-base voltage (I_C = 0)	9	V
I_C	Collector current	6	A
I_{CM}	Collector peak current (t_P < 5 ms)	9	A
I_B	Base current	5	A
I_{BM}	Base peak current (t_P < 5 ms)	8	A
P_{TOT}	Total dissipation at $T_c \leq 25$ °C	110	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_{thJC}	Thermal resistance junction-case max	1.14	°C/W
R_{thJA}	Thermal resistance junction-ambient max	62.5	°C/W

2 Electrical characteristics

T_{case} = 25 °C unless otherwise specified.

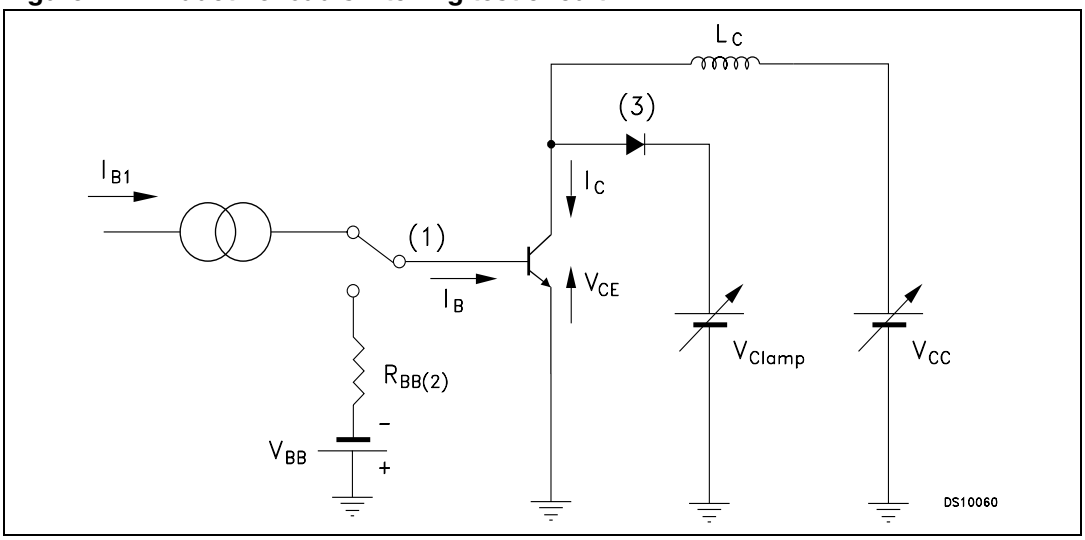
Table 4. Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector cut-off current (V_{BE} = 0)	V_{CE} = 1600 V V_{CE} = 1600 V T_c = 125 °C			100 500	µA µA
I_{CEO}	Collector cut-off current (I_B = 0)	V_{CE} = 800 V			250	µA
$V_{CEO(sus)}$ (1)	Collector-emitter sustaining voltage (I_B = 0)	I_C =100 mA	800			V
V_{EBO}	Emitter-base voltage (I_C = 0)	I_E = 10 mA	9			V
$V_{CE(sat)}$ (1)	Collector-emitter saturation voltage	I_C = 2 A I_B = 0.4 A I_C = 4 A I_B = 1.33 A			1.2 1.5	V V
$V_{BE(sat)}$ (1)	Base-emitter saturation voltage	I_C = 2 A I_B = 0.4 A I_C = 4 A I_B = 1.33 A			1.2 1.5	V V
h_{FE} (1)	DC current gain	I_C = 10 mA V_{CE} = 5 V I_C = 0.7 A V_{CE} = 5 V	10 18		 32	
t_s t_f	Inductive load Storage time Fall time	I_C = 3 A I_{B1} = 1 A $V_{BE(off)}$ = - 5 V R_{BB} = 0 V_{CL} = 200 V L = 200 µH		1.8 800		 µs ns

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

2.1 Test circuits

Figure 2. Inductive load switching test circuit



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

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*.
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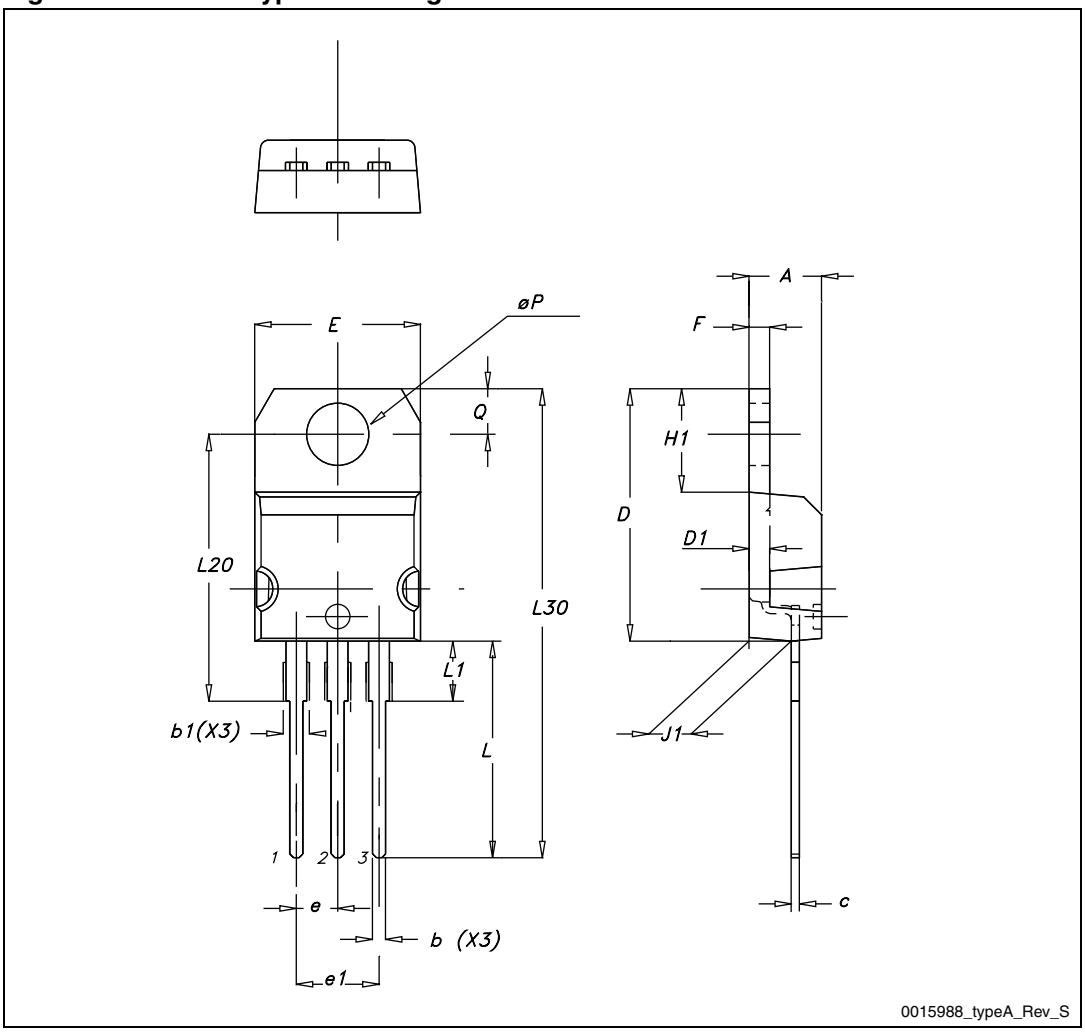
Table 5. TO-220 type A mechanical data

Dim.	mm.		
	Min.	Typ.	Max.
A	4.40		4.60
b	0.61		0.88
b1	1.14		1.70
c	0.48		0.70
D	15.25		15.75
D1		1.27	
E	10		10.40
e	2.40		2.70
e1	4.95		5.15
F	1.23		1.32
H1	6.20		6.60
J1	2.40		2.72
L	13		14
L1	3.50		3.93
L20		16.40	
L30		28.90	
∅P	3.75		3.85
Q	2.65		2.95

Figure 3. TO-220 type A drawing



4 Revision history

Table 6. Document revision history

Date	Revision	Changes
06-Aug-2009	1	Initial release.
25-Jan-2010	2	Document status promoted from preliminary data to datasheet.

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