

1 Electrical ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CEX}	Collector-emitter voltage ($V_{BE} = -1.5\text{ V}$)	95	V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	25	V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	5	V
I_C	Collector current	5	A
I_{CM}	Collector peak current ($t_P < 5\text{ ms}$)	10	A
I_B	Base current	1	A
P_{TOT}	Total dissipation at $T_{amb} = 25\text{ °C}$	1.4	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
$R_{thJA}^{(1)}$	Thermal resistance junction-ambient max	89	°C/W

1. Device mounted on PCB area of 1 cm^2

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_{CBO}	Collector cut-off current ($I_{\text{E}} = 0$)	$V_{\text{CB}} = 50\text{ V}$			0.1	μA
I_{EBO}	Emitter cut-off current ($I_{\text{C}} = 0$)	$V_{\text{EB}} = 4\text{ V}$			0.1	μA
$V_{(\text{BR})\text{CEX}}$	Collector-emitter breakdown voltage ($V_{\text{BE}} = -1.5\text{ V}$)	$I_{\text{C}} = 1\text{ mA}$	95			V
$V_{(\text{BR})\text{CEO}}^{(1)}$	Collector-emitter breakdown voltage ($I_{\text{B}} = 0$)	$I_{\text{C}} = 10\text{ mA}$	25			V
$V_{(\text{BR})\text{EBO}}$	Emitter-base breakdown voltage ($I_{\text{C}} = 0$)	$I_{\text{E}} = 100\text{ }\mu\text{A}$	5			V
$h_{\text{FE}}^{(1)}$	DC current gain	$I_{\text{C}} = 0.5\text{ A}$ $V_{\text{CE}} = 2\text{ V}$ $I_{\text{C}} = 3\text{ A}$ $V_{\text{CE}} = 2\text{ V}$ $I_{\text{C}} = 5\text{ A}$ $V_{\text{CE}} = 5\text{ V}$	150 100	150	500	
$V_{\text{CE}(\text{sat})}^{(1)}$	Collector-emitter saturation voltage	$I_{\text{C}} = 3\text{ A}$ $I_{\text{B}} = 300\text{ mA}$ $I_{\text{C}} = 3.5\text{ A}$ $I_{\text{B}} = 40\text{ mA}$		220	500	mV mV
$V_{\text{BE}(\text{sat})}^{(1)}$	Base-emitter saturation voltage	$I_{\text{C}} = 3\text{ A}$ $I_{\text{B}} = 300\text{ mA}$			1.2	V
C_{CBO}	Collector-base capacitance ($I_{\text{E}} = 0$)	$V_{\text{CB}} = 10\text{ V}$, $f = 1\text{ MHz}$		20		pF
f_{T}	Transition frequency	$V_{\text{CE}} = 10\text{ V}$ $I_{\text{C}} = 50\text{ mA}$		120		MHz
t_{on}	Resistive load Turn-on time	$I_{\text{C}} = 1.5\text{ A}$ $V_{\text{CC}} = 10\text{ V}$		60		ns
t_{off}	Turn-off time	$I_{\text{B}1} = -I_{\text{B}2} = 150\text{ mA}$		450		ns

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

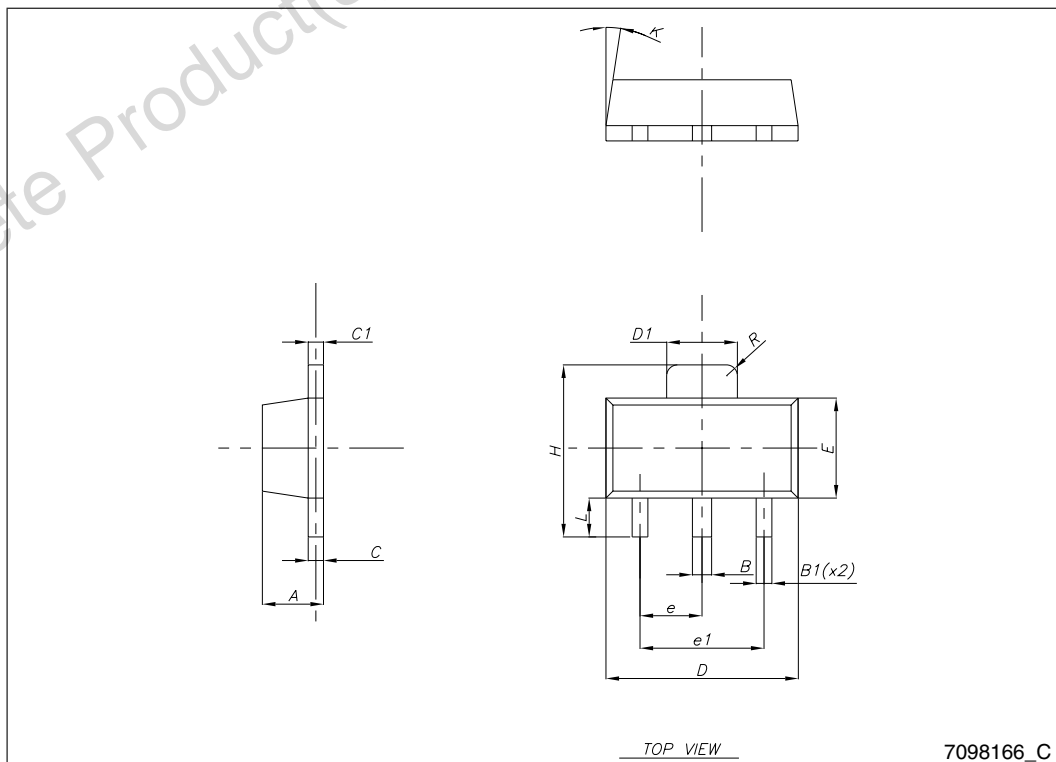
3 Package mechanical data

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.

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SOT-89 mechanical data

Dim.	mm		
	Min.	Typ.	Max.
A	1.40		1.60
B	0.44		0.56
B1	0.36		0.48
C	0.35		0.44
C1	0.35		0.44
D	4.40		4.60
D1	1.62		1.83
E	2.29		2.60
e	1.42		1.57
e1	2.92		3.07
H	3.94		4.25
K	1°		8°
L	0.89		1.20
R		0.25	



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4 Revision history

Table 5. Document revision history

Date	Revision	Changes
04-Jun-2009	1	Initial release.
12-Nov-2009	2	Document status promoted from preliminary data to datasheet.

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