1 Absolute maximum ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-emitter voltage (I_B = 0) D44H8 - D45H8	60	V
	Collector-emitter voltage (I_B = 0) D44H11 - D45H11	80	V
V_{EBO}	Emitter-base voltage (I_C = 0)	5	V
I_C	Collector current	10	A
I_{CM}	Collector peak current	20	A
P_{TOT}	Total dissipation at T_{case} = 25 °C	50	W
T_{STG}	Storage temperature	-55 to 150	°C
T_J	Max. operating junction temperature	150	°C

Note: For PNP types voltage and current values are negative.

Table 3. Thermal data

Symbol	Parameter	Value	Unit
R_{thJC}	Thermal resistance junction-case max	2.5	°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
$V_{CEO(sus)}$ (1)	Collector-emitter sustaining voltage (I_B = 0)	I_C = 100 mA D44H8 - D45H8 D44H11 - D45H11	 60 80	-		V
I_{CES}	Collector cut-off current (V_{BE} = 0)	V_{CE} = rated V_{CEO}		-	10	µA
I_{EBO}	Emitter cut-off current (I_C = 0)	V_{EB} = 5 V		-	100	µA
$V_{CE(sat)}$ (1)	Collector-emitter saturation voltage	I_C = 8 A I_B = 0.4 A		-	1	V
$V_{BE(sat)}$ (1)	Base-emitter saturation voltage	I_C = 8 A I_B = 0.8 A		-	1.5	V
h_{FE} (1)	DC current gain	I_C = 2 A V_{CE} = 1 V	60	-		
		I_C = 4 A V_{CE} = 1 V	40	-		

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

Note: For PNP types voltage and current values are negative.

2.1 Electrical characteristics (curves)

Figure 2. Safe operating area

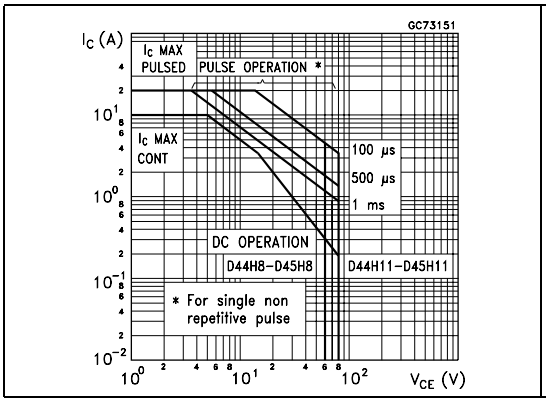


Figure 3. Derating curve

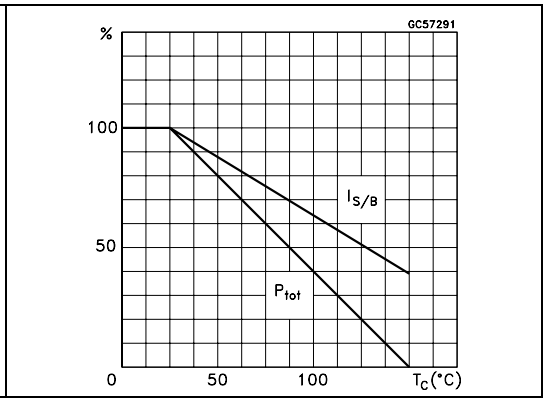


Figure 4. DC current gain (NPN)

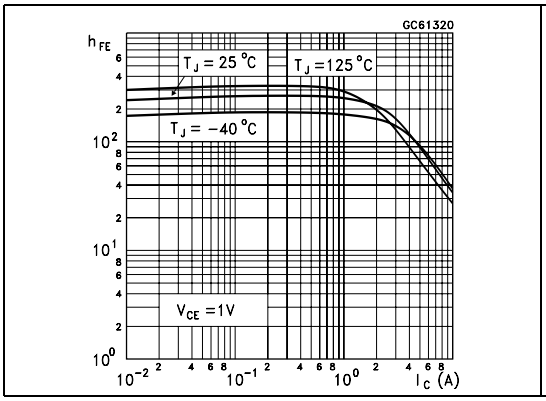


Figure 5. DC current gain (PNP)

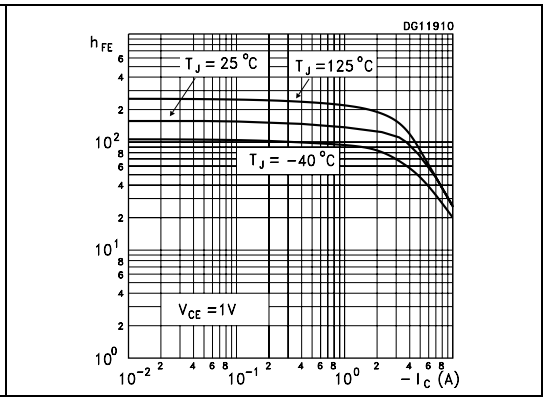


Figure 6. Collector-emitter saturation voltage (NPN)

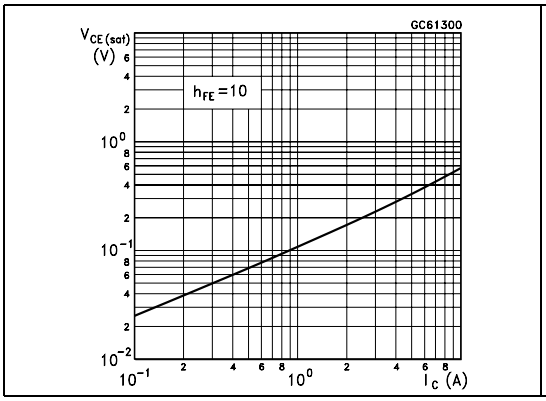
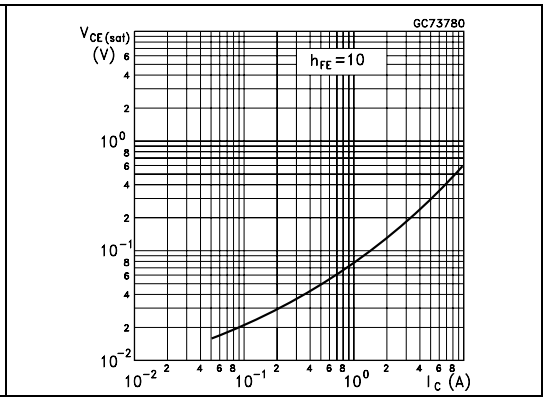


Figure 7. Collector-emitter saturation voltage (PNP)



3 Package mechanical data

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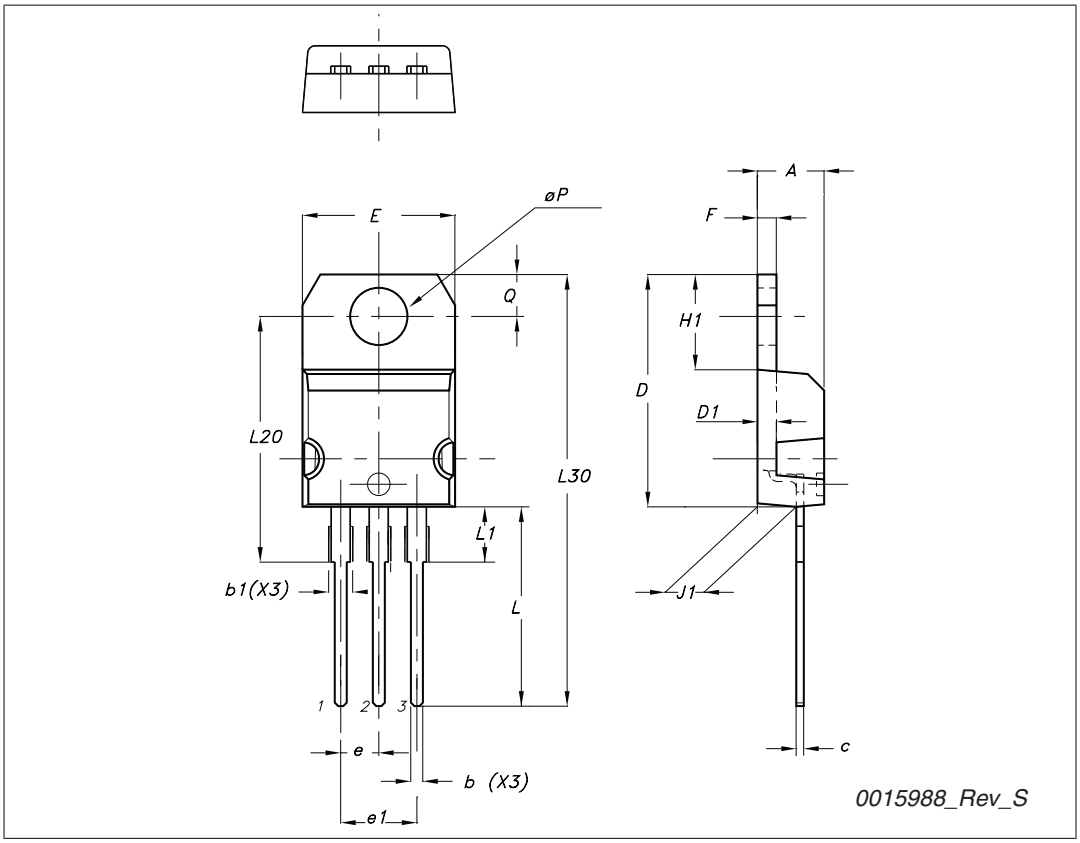
TO-220 type A mechanical data

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



4 Revision history

Table 5. Document revision history

Date	Revision	Changes
21-Jun-2004	4	Document migration, no content change.
20-Oct-2009	5	Updated mechanical data.

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