

1 Absolute maximum ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base voltage ($I_E = 0$)	100	V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	100	V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	5	V
I_C	Collector current	15	A
I_{CM}	Collector peak current ($t_p < 5\text{ms}$)	40	A
I_B	Base current	0.5	A
P_{TOT}	Total dissipation at $T_c \leq 25\text{ }^\circ\text{C}$	130	W
T_{stg}	Storage temperature	-65 to 150	$^\circ\text{C}$
T_J	Max. operating junction temperature	150	$^\circ\text{C}$

Table 3. Thermal data

Symbol	Parameter	Value	Unit
$R_{thj-case}$	Thermal resistance junction-case max	0.96	$^\circ\text{C/W}$

2 Electrical characteristics

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

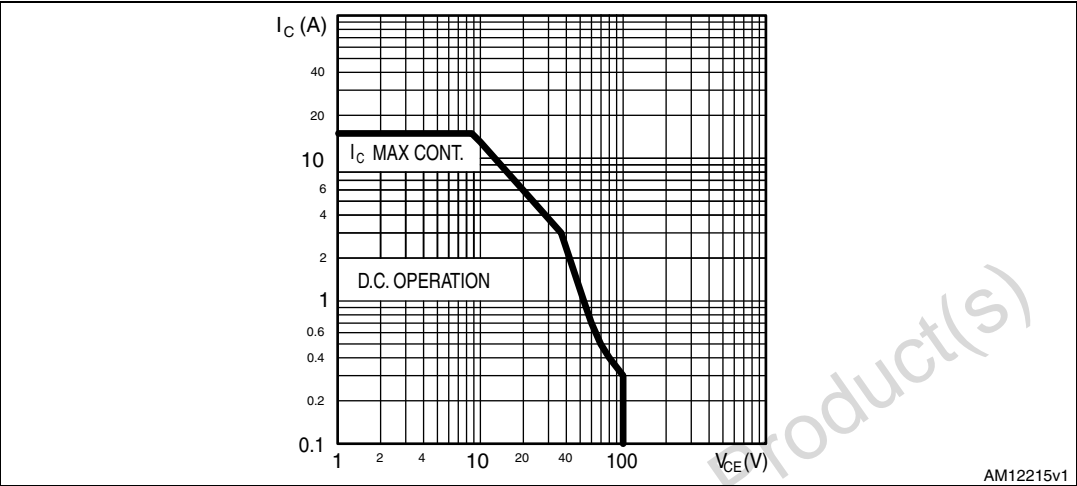
Table 4. Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector cut-off current ($I_{\text{E}} = 0$)	$V_{\text{CB}} = 100 \text{ V}$ $V_{\text{CB}} = 100 \text{ V} \quad T_{\text{C}} = 150^{\circ}\text{C}$			500 5	μA mA
I_{CEO}	Collector cut-off current ($I_{\text{B}} = 0$)	$V_{\text{CE}} = 40 \text{ V}$			1	mA
I_{EBO}	Emitter cut-off current ($I_{\text{C}} = 0$)	$V_{\text{EB}} = 5 \text{ V}$			2	mA
$V_{\text{CEO(sus)}}^{(1)}$	Collector-emitter sustaining voltage ($I_{\text{B}} = 0$)	$I_{\text{C}} = 30 \text{ mA}$	100			V
$V_{\text{CE(sat)}}^{(1)}$	Collector-emitter saturation voltage	$I_{\text{C}} = 6 \text{ A} \quad I_{\text{B}} = 12 \text{ mA}$ $I_{\text{C}} = 15 \text{ A} \quad I_{\text{B}} = 150 \text{ mA}$			2.5 4	V V
$V_{\text{BE(on)}}^{(1)}$	Base-emitter on voltage	$I_{\text{C}} = 6 \text{ A} \quad V_{\text{CE}} = 3 \text{ V}$			2.5	V
$h_{\text{FE}}^{(1)}$	DC current gain	$I_{\text{C}} = 6 \text{ A} \quad V_{\text{CE}} = 3 \text{ V}$ $I_{\text{C}} = 15 \text{ A} \quad V_{\text{CE}} = 3 \text{ V}$	750 100		20000	
V_{F}	Diode forward voltage	$I_{\text{F}} = 10 \text{ A}$			4	V
t_{on} t_{off}	Resistive load Turn-on time Turn-off time	$V_{\text{CC}} = 30 \text{ V} \quad I_{\text{C}} = 10 \text{ A}$ $I_{\text{B1}} = -I_{\text{B2}} = 40 \text{ mA}$		0.9 6		μs μs

1. Pulsed duration = 300 μs , duty cycle $\leq 1.5\%$.

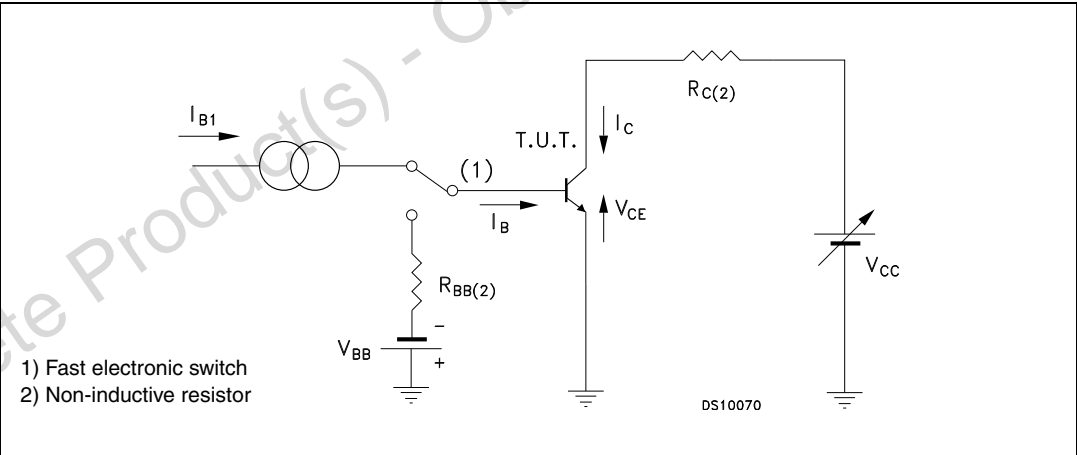
3 Electrical characteristics (curve)

Figure 2. Safe operating area



3.1 Test circuit

Figure 3. Resistive load switching test circuit



4 Package mechanical data

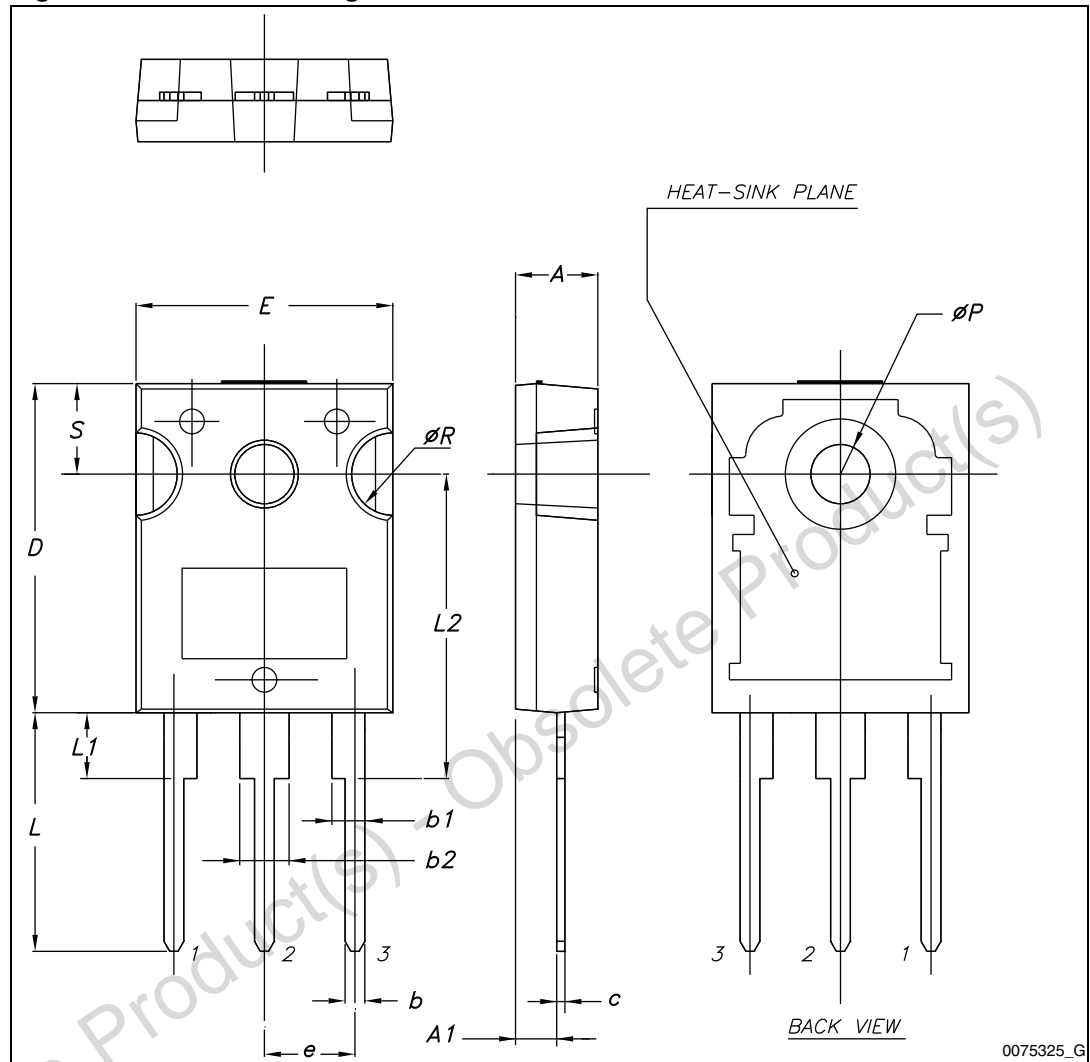
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Table 5. TO-247 mechanical data

Dim.	mm.		
	Min.	Typ.	Max.
A	4.85		5.15
A1	2.20		2.60
b	1.0		1.40
b1	2.0		2.40
b2	3.0		3.40
c	0.40		0.80
D	19.85		20.15
E	15.45		15.75
e	5.30	5.45	5.60
L	14.20		14.80
L1	3.70		4.30
L2		18.50	
ØP	3.55		3.65
ØR	4.50		5.50
S	5.30	5.50	5.70

Figure 4. TO-247 drawing



5 Revision history

Table 6. Document revision history

Date	Revision	Changes
02-Jan-2000	4	
16-Nov-2007	5	Package change from TO-218 to TO-247.
02-May-2012	6	– Added: Figure 2: Safe operating area – Updated: mechanical data

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