

1 Absolute maximum ratings

Table 2. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base voltage ($I_E = 0$)	80	V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)		
V_{EBO}	Emitter-base voltage ($I_C = 0$)	5	V
I_C	Collector current	4	A
I_{CM}	Collector peak current	8	A
I_B	Base current	0.1	A
P_{TOT}	Total dissipation at $T_{case} = 25\text{ }^{\circ}\text{C}$	40	W
T_{STG}	Storage temperature	-65 to 150	$^{\circ}\text{C}$
T_J	Max. operating junction temperature	150	$^{\circ}\text{C}$

2 Electrical characteristics

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

Table 3. Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector cut-off current ($I_{\text{E}} = 0$)	$V_{\text{CB}} = 80\text{ V}$ $V_{\text{CB}} = 80\text{ V}$, $T_{\text{C}} = 125\text{ }^{\circ}\text{C}$		-	0.1 0.5	mA
I_{CEO}	Collector cut-off current ($I_{\text{B}} = 0$)	$V_{\text{CE}} = 80\text{ V}$		-	0.1	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 ($I_{\text{B}} = 0$)	$I_{\text{C}} = 50\text{ mA}$	80	-		V
$V_{\text{CE(sat)}}^{(1)}$	Collector-emitter saturation voltage	$I_{\text{C}} = 1.5\text{ A}$ $I_{\text{B}} = 30\text{ mA}$		-	2.5	V
		$I_{\text{C}} = 4\text{ A}$ $I_{\text{B}} = 40\text{ mA}$		-	3	
$V_{\text{BE(on)}}$	Base-emitter on voltage	$I_{\text{C}} = 1.5\text{ A}$ $V_{\text{CE}} = 3\text{ V}$		-	2.5	V
		$I_{\text{C}} = 4\text{ A}$ $V_{\text{CE}} = 3\text{ V}$			3	
$h_{\text{FE}}^{(1)}$	DC current gain	$I_{\text{C}} = 1.5\text{ A}$ $V_{\text{CE}} = 3\text{ V}$	750	-		
		$I_{\text{C}} = 4\text{ A}$ $V_{\text{CE}} = 3\text{ V}$	100	-		
h_{fe}	Small signal current gain	$I_{\text{C}} = 1.5\text{ A}$ $V_{\text{CE}} = 3\text{ V}$ $f = 1\text{ MHz}$	1	-		

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

2.1 Typical characteristic (curves)

Figure 2. DC current gain ($V_{\text{CE}} = 3\text{ V}$)

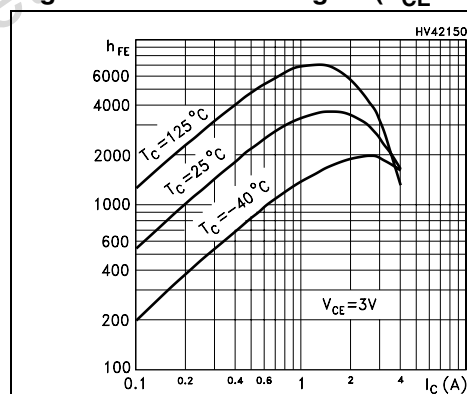


Figure 3. DC current gain ($V_{\text{CE}} = 5\text{ V}$)

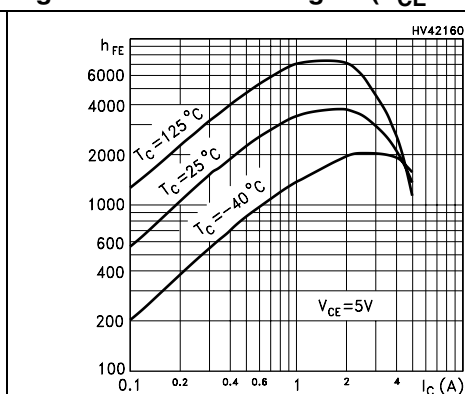


Figure 4. Collector-emitter saturation voltage

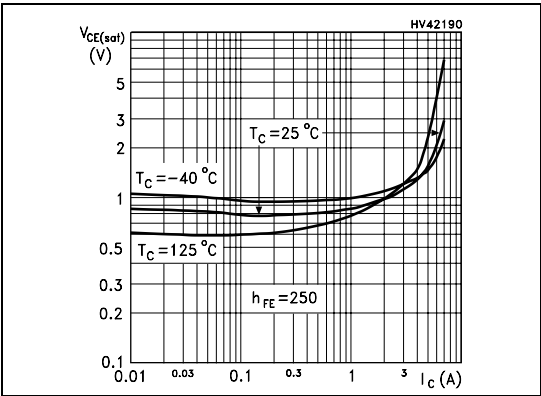


Figure 5. Base-emitter saturation voltage

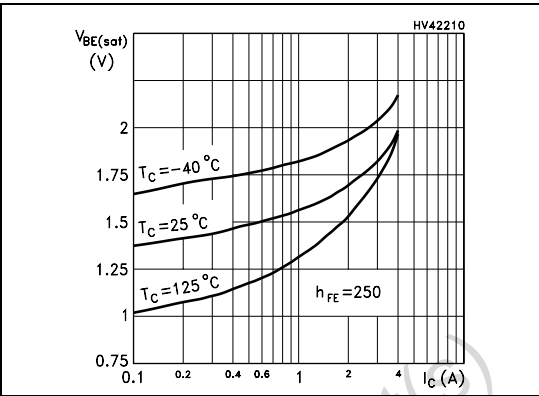


Figure 6. Base-emitter on voltage

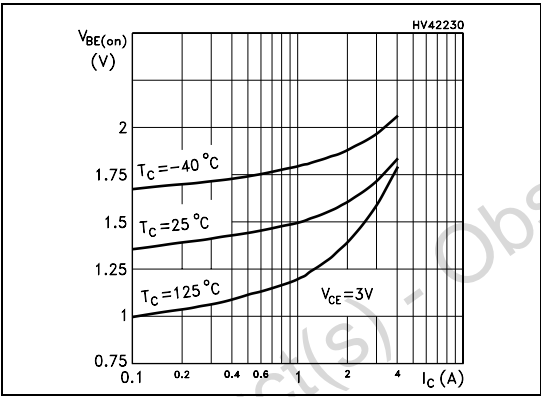


Figure 7. Resistive load switching time (on)

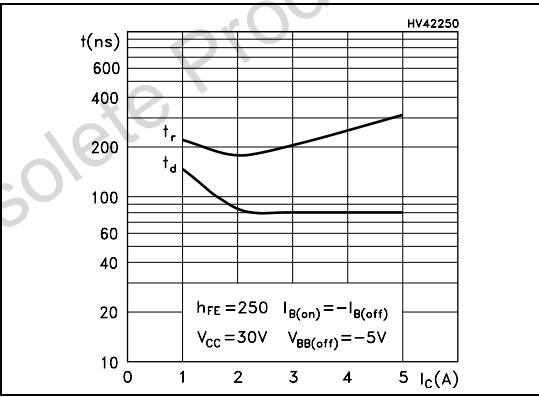
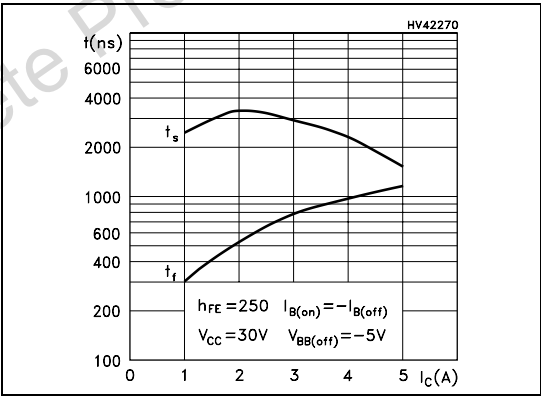


Figure 8. Resistive load switching time (off)



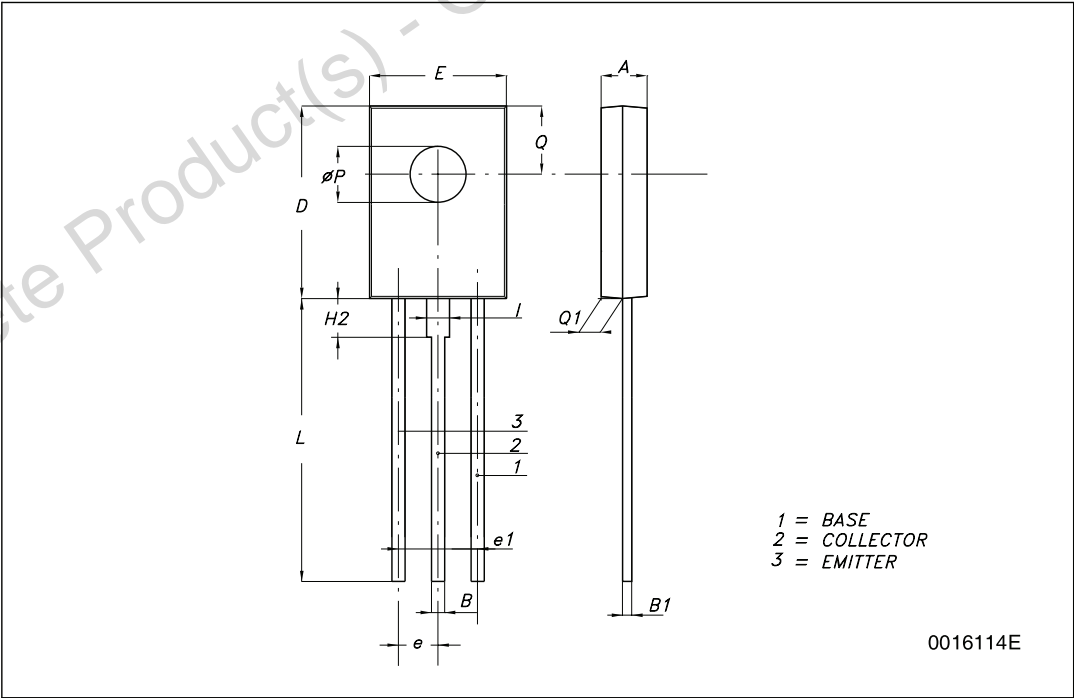
3 Package mechanical data

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SOT-32 (TO-126) MECHANICAL DATA

DIM.	mm.		
	MIN.	TYP	MAX.
A	2.4		2.9
B	0.64		0.88
B1	0.39		0.63
D	10.5		11.05
E	7.4		7.8
e	2.04	2.29	2.54
e1	4.07	4.58	5.08
L	15.3		16
P	2.9		3.2
Q		3.8	
Q1	1		1.52
H2		2.15	
I		1.27	



4 Revision history

Table 4. Document revision history

Date	Revision	Changes
21-Jun-2004	3	Document migration, no content change.
28-Aug-2009	4	Modified SOT-32 mechanical data.

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