

High voltage NPN Power transistor

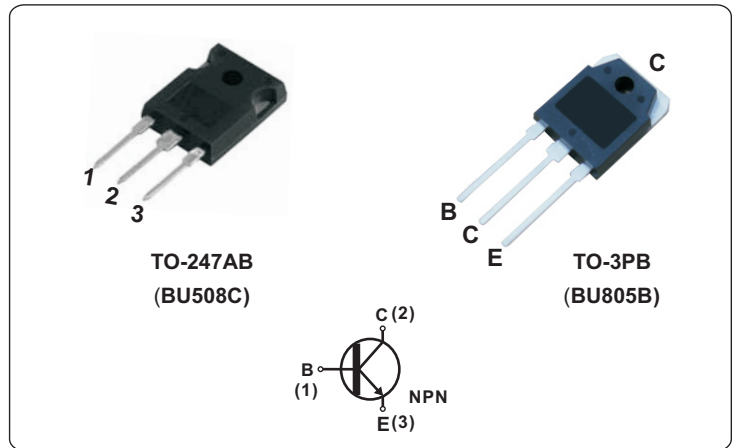
8A, 1500V

FEATURES

- Stable performance vs. operating temperature variation
- High ruggedness
- Tight h_{FE} range at operating collector current
- TO-3P and TO-247AB package which can be installed to the heat sink with one screw

APPLICATIONS

- Switching mode power supplies and general purpose
- High frequency inverters



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise specified)				
SYMBOL	PARAMETER	TEST CONDITIONS	VALUE	UNIT
V_{CES}	Collector to emitter voltage	$V_{BE}=0$	1500	V
V_{CEO}	Collector to emitter voltage	$I_B=0$	700	
V_{EBO}	Emitter to base voltage	$I_C=0$	9	
I_C	Collector current-continuous		8	A
I_{CM}	Peak collector current	$t_p < 5 \text{ ms}$	15	
I_B	Base Current		4	
P_D	Collector power dissipation	$T_C=25^\circ\text{C}$	125	W
T_J	Junction temperature		150	$^\circ\text{C}$
T_{STG}	Storage temperature		-55 to 150	

THERMAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$)			
SYMBOL	PARAMETER	VALUE	UNIT
$R_{th(j-c)}$	Thermal resistance, junction to case	1.0	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise specified)						
SYMBOL	PARAMETER	TEST CONDITIONS	Min.	Typ.	Max.	UNIT
I_{CES}	Collector cutoff current ($V_{BE} = 0$)	$V_{CEO}=1500\text{V}, I_E=0$			0.2	mA
					2	
I_{EBO}	Emitter cutoff current	$V_{EBO}=9\text{V}, I_C=0$			1.0	
V_{CEO}	Collector to emitter voltage	$I_B=0$	700			V
$V_{CEO(SUS)}^*$	Collector to emitter sustaining voltage	$I_C=100\text{mA}$	700			
h_{FE}^*	Forward current transfer ratio (DC current gain)	$I_C=0.1\text{A}, V_{CE}=5\text{V}$	10		30	
		$I_C=4.5\text{A}, V_{CE}=5\text{V}$	5			
$V_{CE(sat)}^*$	Collector to emitter saturation voltage	$I_C=4.5\text{A}, I_B=1.6\text{A}$			1.0	V
$V_{BE(sat)}^*$	Base to emitter saturation voltage	$I_C=4.5\text{A}, I_B=2\text{A}$			1.1	
t_{stg}	Storage time	$I_C=4.5\text{A}, I_{B(on)}=0.5\text{A}, V_{BE(off)}=-2.7\text{V}$ $f_h=16\text{KHz}, L_{BB(off)}=4.5\mu\text{H}$		2.5		μS
t_f	Fall time			0.2		

*Pulsed: Pulse duration= 300 μs , duty cycle= 1.5%.

Fig.1 Power derating

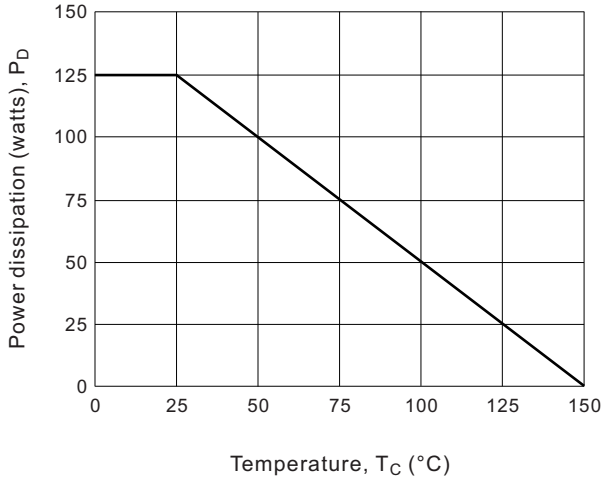


Fig.2 Collector saturation region

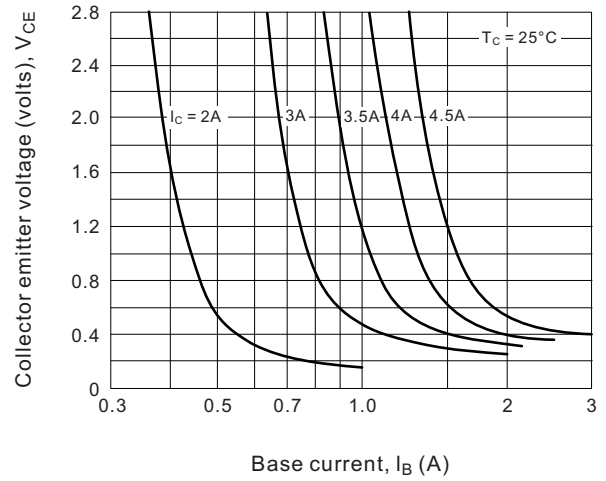


Fig.3 DC current gain

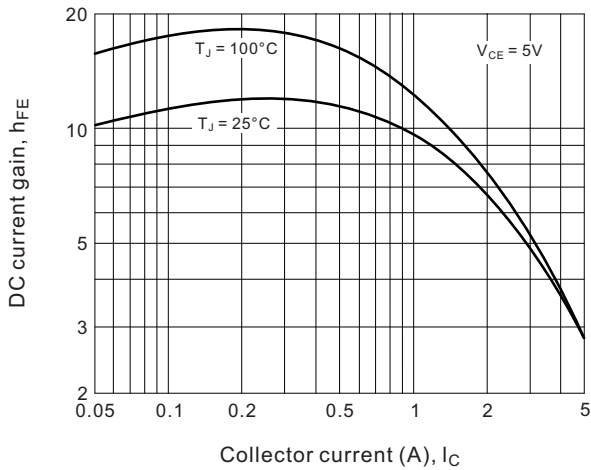


Fig.4 "ON" voltages

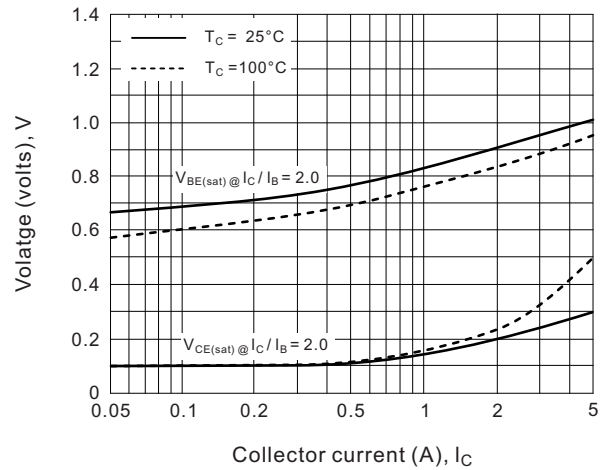


Fig.5 Switching behavior vs. I_{CM}

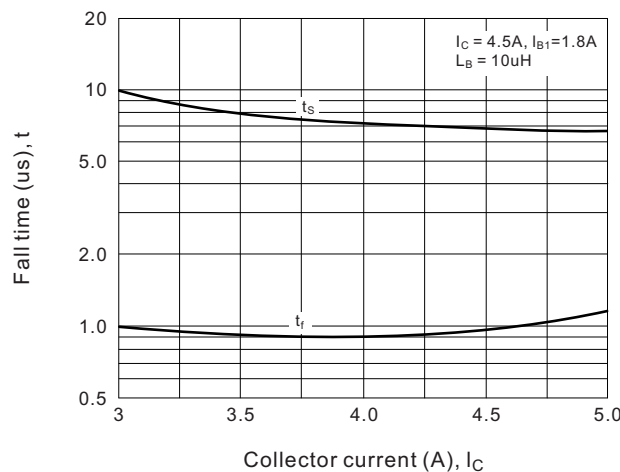
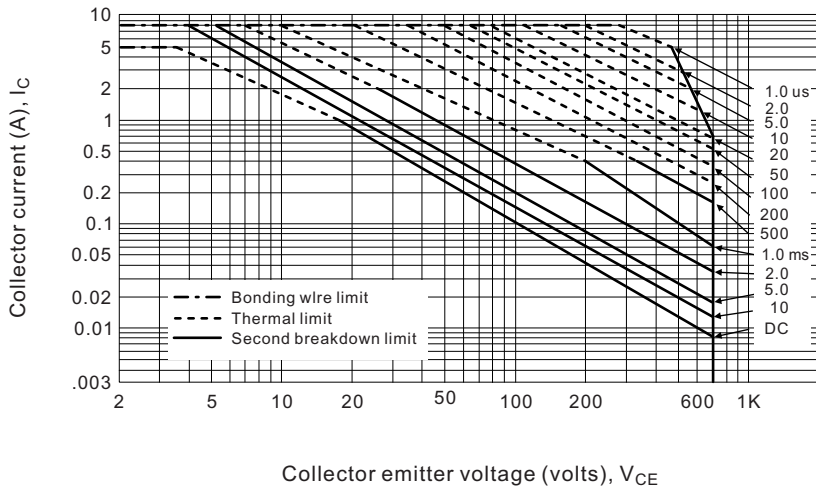
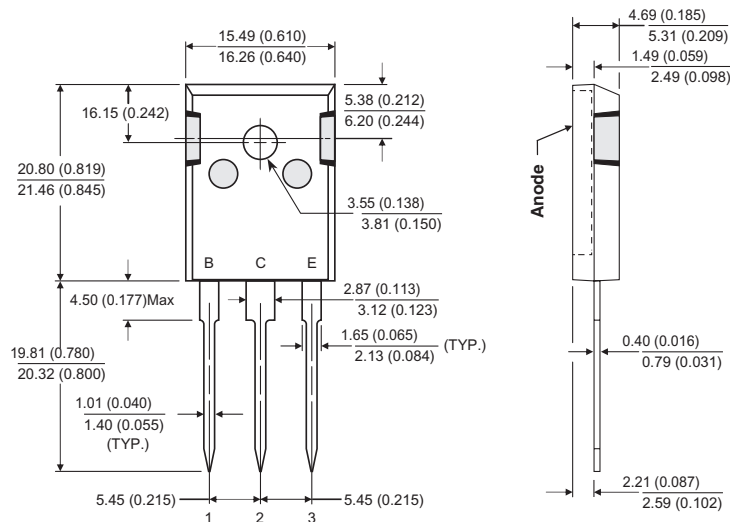


Fig.6 Forward bias safe operating area



TO-247AB



All dimensions in millimeters (inches)

