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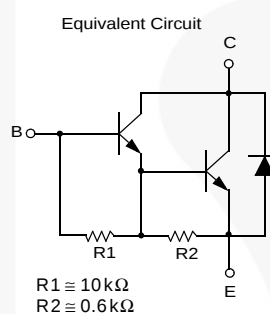
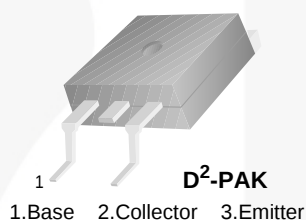
December 2014

FJB102

NPN High-Voltage Power Darlington Transistor

Features

- High DC Current Gain : $h_{FE} = 1000$ at $V_{CE} = 4\text{ V}$, $I_C = 3\text{ A}$ (Minimum)
- Low Collector-Emitter Saturation Voltage



Ordering Information

Part Number	Top Mark	Package	Packing Method
FJB102TM	FJB102	TO-263 2L (D2PAK)	Tape and Reel

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_C = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	8	A
I_{CP}	Collector Current (Pulse) ⁽¹⁾	15	A
I_B	Base Current (DC)	1	A
P_C	Collector Dissipation ($T_C = 25^\circ\text{C}$)	80	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-65 to 150	$^\circ\text{C}$

Note:

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

Electrical Characteristics

Values are at $T_C = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
$BV_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 30\text{ mA}, I_B = 0$	100		V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 500\text{ }\mu\text{A}, I_C = 0$	10		V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 100\text{ V}, I_E = 0$		50	μA
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 50\text{ V}, I_B = 0$		50	μA
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 5\text{ V}, I_C = 0$		2	mA
h_{FE}	DC Current Gain	$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$	1000	20000	
		$V_{CE} = 4\text{ V}, I_C = 8\text{ A}$	200		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 3\text{ A}, I_B = 6\text{ mA}$		2.0	V
		$I_C = 8\text{ A}, I_B = 80\text{ mA}$		2.5	
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 4\text{ V}, I_C = 8\text{ A}$		2.8	V
C_{ob}	Output Capacitance	$V_{CB} = 10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$		200	pF

Typical Performance Characteristics

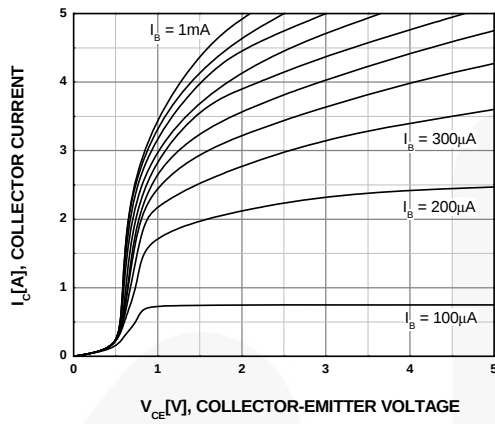


Figure 1. Static Characteristic

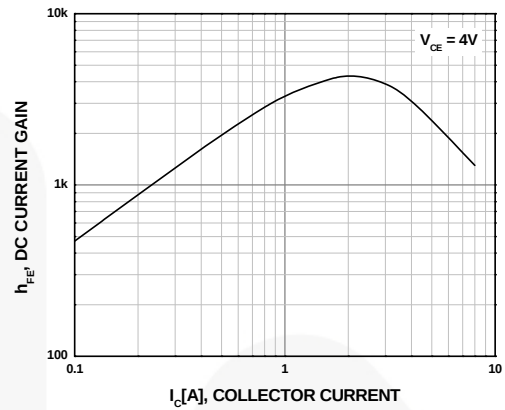


Figure 2. DC Current Gain

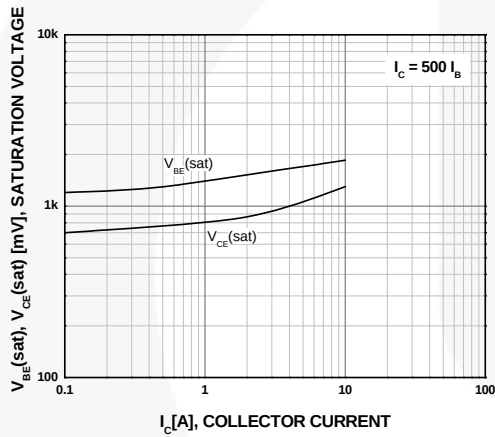


Figure 3. Collector-Emitter Saturation Voltage and Base-Emitter Saturation Voltage

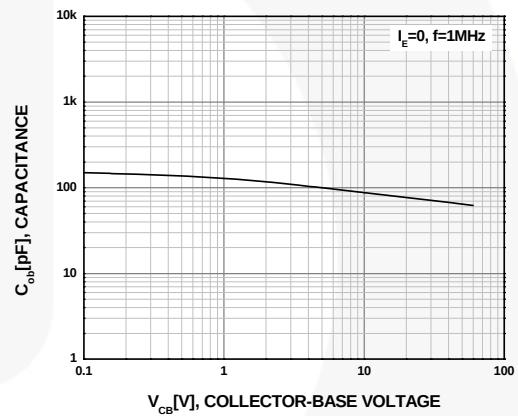


Figure 4. Collector Output Capacitance

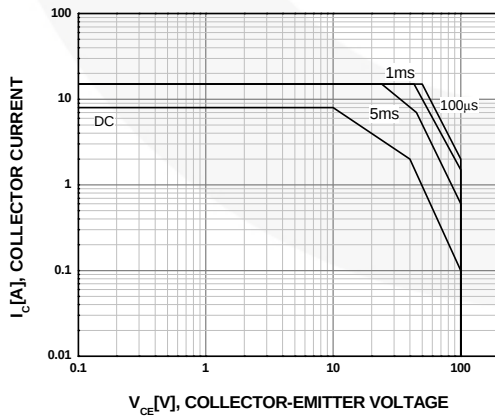


Figure 5. Forward Biased Safe Operating Area

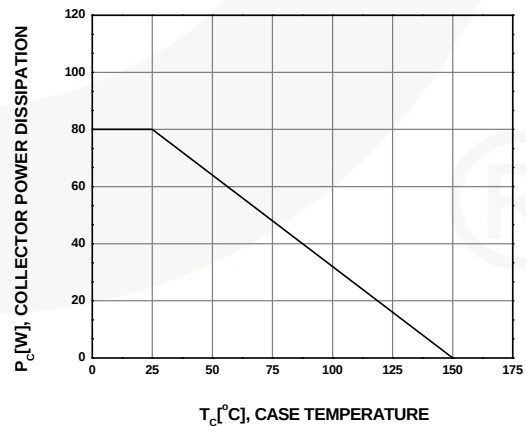


Figure 6. Power Derating

Physical Dimensions

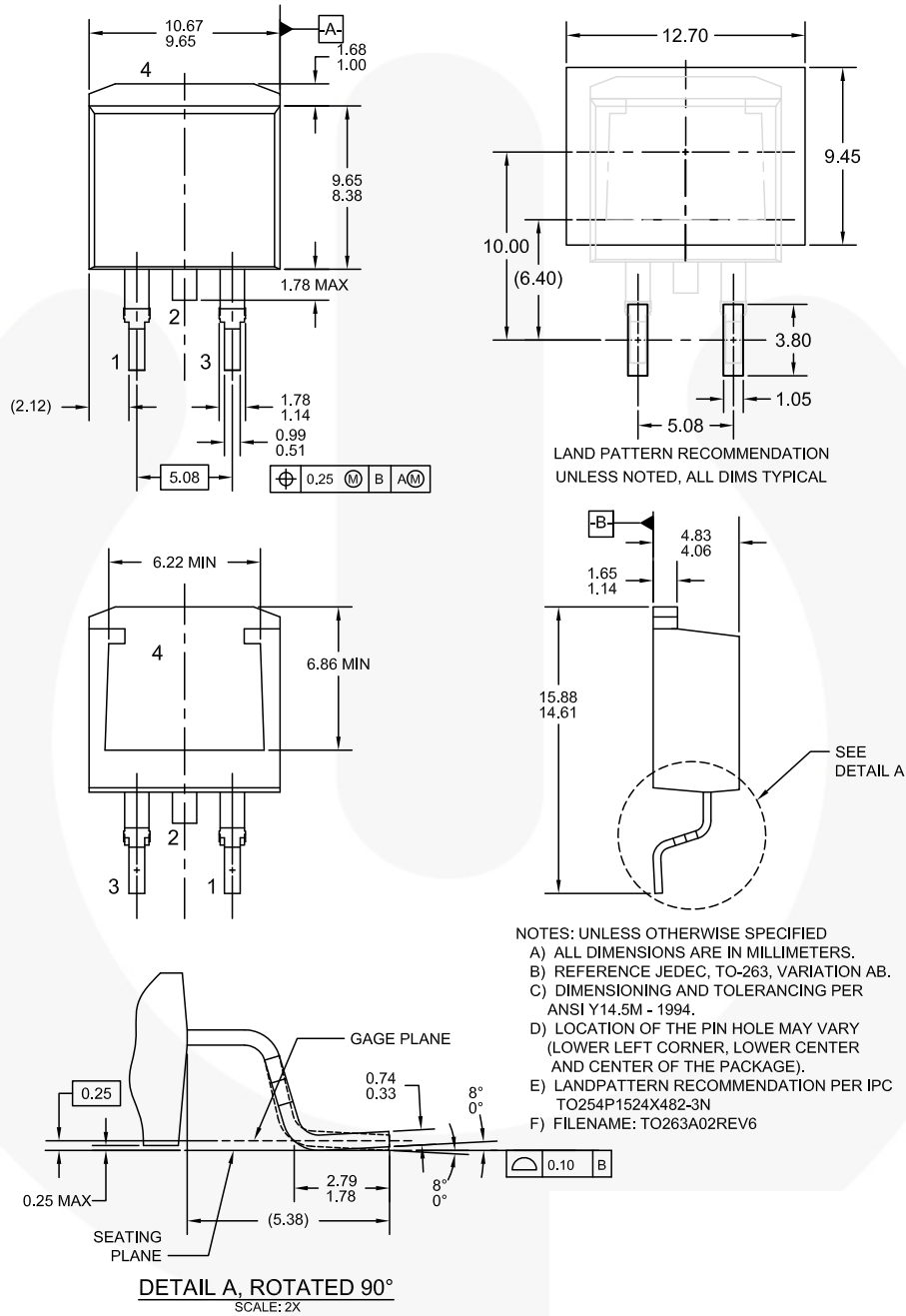


Figure 7. 2-LEAD, TO263, D2PAK, SURFACE MOUNT



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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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