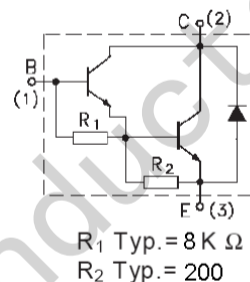
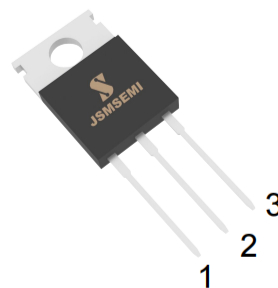


## Features

- Low collector-emitter saturation voltage
- Fast switching speeds
- Complement to TIP127

## Mechanical Data

- Case: TO-220AB
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



## Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Emitter Breakdown Voltage	V <sub>CEO</sub>	100	V
Collector-Base Voltage	V <sub>CB0</sub>	100	V
Emitter-Base Breakdown Voltage	V <sub>EBO</sub>	5	V
Collector Current (Continuous)	I <sub>C</sub>	5	A
Collector Current (Pulse)	I <sub>CM</sub>	8	A
Base Current	I <sub>B</sub>	120	mA

## Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T <sub>A</sub> = 25°C)	P <sub>D</sub>	2	W
Power Dissipation (T <sub>C</sub> = 25°C)	P <sub>D</sub>	65	W
Thermal Resistance Junction-to-Air *1	R <sub>θJA</sub>	33	°C/W
Thermal Resistance Junction-to-Case *1	R <sub>θJC</sub>	10	°C/W
Thermal Resistance Junction-to-Lead *1	R <sub>θJL</sub>	7	°C/W
Junction Temperature	T <sub>J</sub>	-65 ~ +150	°C
Storage Temperature Range	T <sub>STG</sub>	-65 ~ +150	°C

Note 1: The data tested by surface mounted on a 25.4mm \* 25.4mm \* 1mm FR4-epoxy P.C.B

**Electrical Characteristics** (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	$I_C = 100\text{mA}, I_B = 0$	100	-	-	V
Collector Cut-off Current	$I_{CEO}$	$V_{CE} = 50\text{V}, I_B = 0$	-	-	0.5	mA
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 100\text{V}, I_E = 0$	-	-	0.2	mA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$	-	-	2	mA
DC Current Gain	$h_{FE}$	$V_{CE} = 3\text{V}, I_C = 0.5\text{A}$	1000	-	-	-
		$V_{CE} = 3\text{V}, I_C = 3\text{A}$	1000	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 3\text{A}, I_B = 12\text{mA}$	-	-	2	V
		$I_C = 5\text{A}, I_B = 20\text{mA}$	-	-	4	V
Base-emitter on Voltage	$V_{BE(on)}$	$V_{CE} = 3\text{V}, I_C = 3\text{A}$	-	-	2.5	V
Output Capacity	$C_{ob}$	$V_{CB} = 10\text{V}, f = 0.1\text{MHz}, I_E = 0$	-	-	200	pF

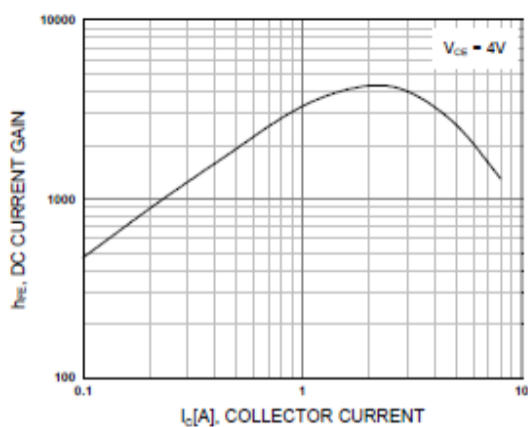
**Ratings and Characteristic Curves** (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)


Figure 1. DC current Gain

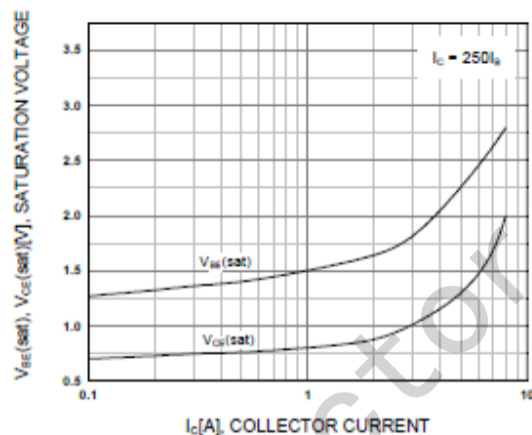
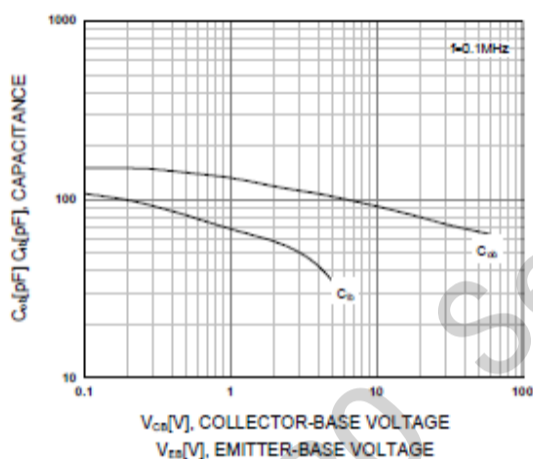
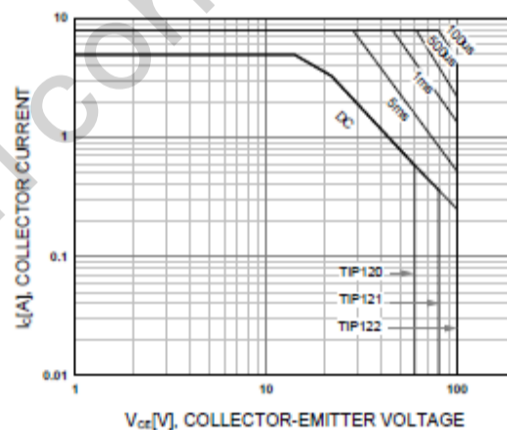

 Figure 2. Base-Emitter Saturation Voltage  
 Collector-Emitter Saturation Voltage

 Figure 3. Output and Input Capacitance  
 vs. Reverse Voltage


Figure 4. Safe Operating Area

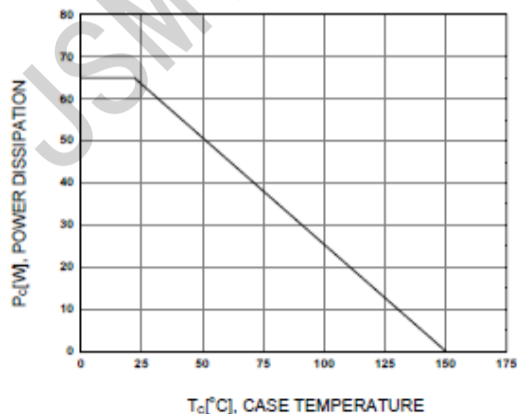
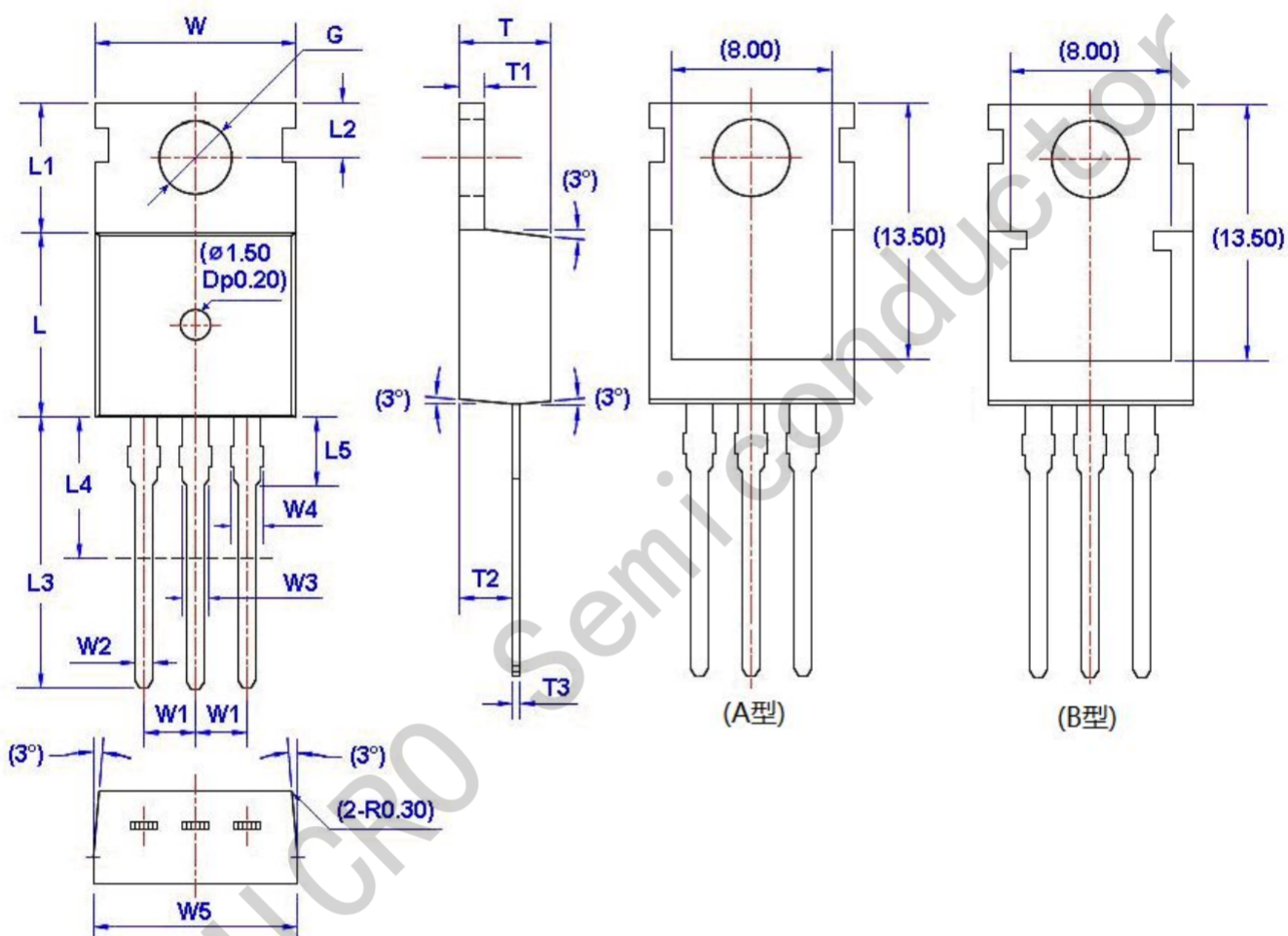


Figure 5. Power Derating

## Package Information

TO-220



Unit: mm

Symbol	Size		Symbol	Size		Symbol	Size		Symbol	Size	
	Min	Max		Min	Max		Min	Max		Min	Max
W	9.66	10.28	W5	9.80	10.20	L4**	6.20	6.60	T3	0.45	0.60
W1	2.54 (TYP)		L	9.00	9.40	L5	2.79	3.30	G(Φ)	3.50	3.70
W2	0.70	0.95	L1	6.40	6.80	T	4.30	4.70			
W3	1.17	1.37	L2	2.70	2.90	T1	1.15	1.40			
W4*	1.32	1.72	L3	12.70	14.27	T2	2.20	2.60			

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