

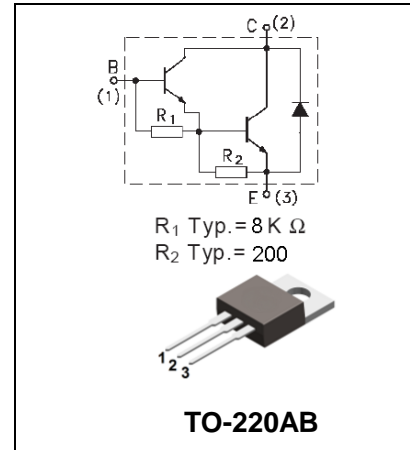


Features

- 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



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TIP122	TO-220AB	50 pcs / Tube	TIP122

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Emitter Breakdown Voltage	V _{CEO}	100	V
Collector-Base Voltage	V _{CBO}	100	V
Emitter-Base Breakdown Voltage	V _{EBO}	5	V
Collector Current (Continuous)	I _C	5	A
Collector Current (Pulse)	I _{CM}	8	A
Base Current	I _B	120	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T _A = 25°C)	P _D	2	W
Power Dissipation (T _C = 25°C)	P _D	65	W
Thermal Resistance Junction-to-Air *1	R _{θJA}	33	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	10	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	7	°C/W
Junction Temperature	T _J	-65 ~ +150	°C
Storage Temperature Range	T _{STG}	-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)

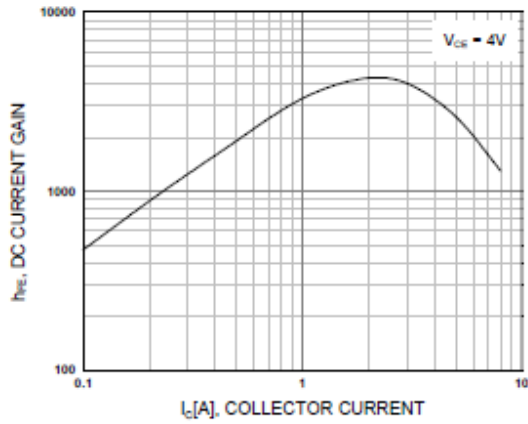


Figure 1. DC current Gain

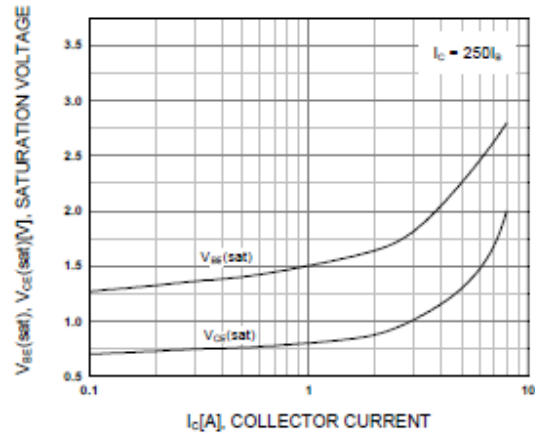


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

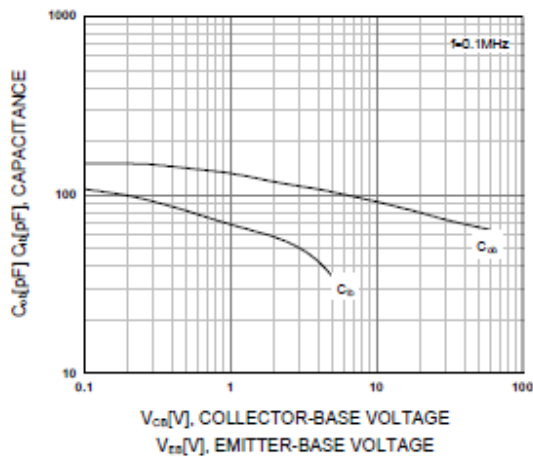


Figure 3. Output and Input Capacitance
vs. Reverse Voltage

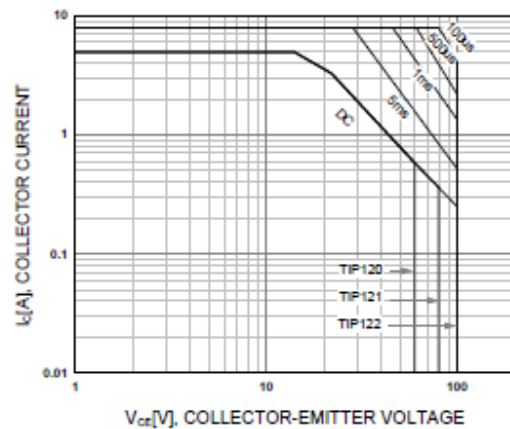


Figure 4. Safe Operating Area

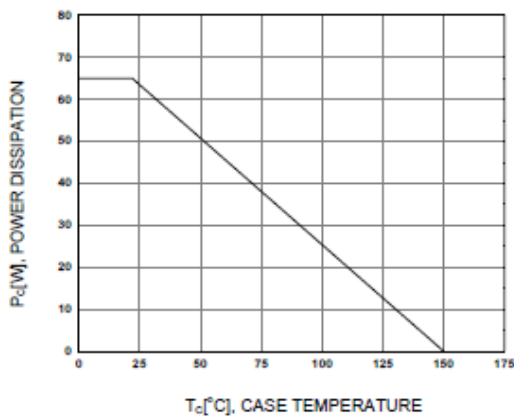
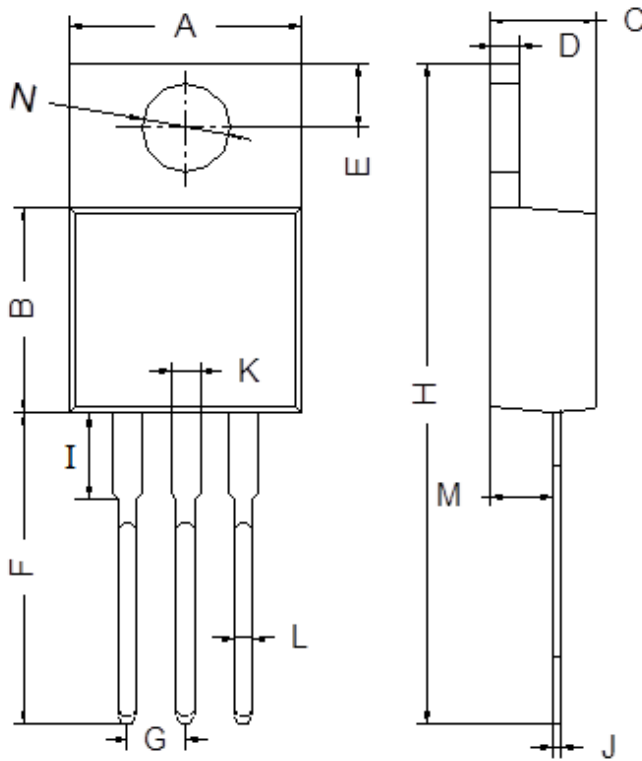


Figure 5. Power Derating



Package Outline Dimensions (Unit: mm)



TO-220AB		
Dimension	Min.	Max.
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96