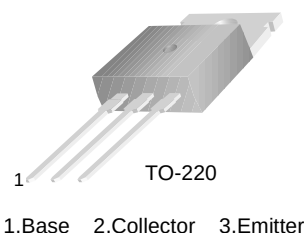




TIP32 Series(TIP32/32A/32B/32C)

Medium Power Linear Switching Applications

- Complement to TIP31/31A/31B/31C



PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : TIP32 : TIP32A : TIP32B : TIP32C	- 40	V
		- 60	V
		- 80	V
		- 100	V
V_{CEO}	Collector-Emitter Voltage : TIP32 : TIP32A : TIP32B : TIP32C	- 40	V
		- 60	V
		- 80	V
		-100	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 3	A
I_{CP}	Collector Current (Pulse)	- 5	A
I_B	Base Current	- 3	A
P_C	Collector Dissipation ($T_C=25^{\circ}\text{C}$)	40	W
P_C	Collector Dissipation ($T_a=25^{\circ}\text{C}$)	2	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^{\circ}\text{C}$

Electrical Characteristics $T_C=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
$V_{CEO(sus)}$	* Collector-Emitter Sustaining Voltage : TIP32 : TIP32A : TIP32B : TIP32C	$I_C = - 30\text{mA}$, $I_B = 0$	-40		V
			-60		V
			-80		V
			-100		V
I_{CEO}	Collector Cut-off Current : TIP32/32A : TIP32B/32C	$V_{CE} = - 30\text{V}$, $I_B = 0$		- 0.3	mA
		$V_{CE} = - 60\text{V}$, $I_B = 0$		- 0.3	mA
I_{CES}	Collector Cut-off Current : TIP32 : TIP32A : TIP32B : TIP32C	$V_{CE} = - 40\text{V}$, $V_{EB} = 0$		- 200	μA
		$V_{CE} = - 60\text{V}$, $V_{EB} = 0$		- 200	μA
		$V_{CE} = - 80\text{V}$, $V_{EB} = 0$		- 200	μA
		$V_{CE} = - 100\text{V}$, $V_{CE} = 0$		- 200	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = - 5\text{V}$, $I_C = 0$		- 1	mA
h_{FE}	* DC Current Gain	$V_{CE} = - 4\text{V}$, $I_C = - 1\text{A}$	25		
		$V_{CE} = - 4\text{V}$, $I_C = - 3\text{A}$	10	50	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = - 3\text{A}$, $I_B = - 375\text{mA}$		- 1.2	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$V_{CE} = - 4\text{V}$, $I_C = - 3\text{A}$		- 1.8	V
f_T	Current Gain Bandwidth Product	$V_{CE} = - 10\text{V}$, $I_C = - 500\text{mA}$	3.0		MHz

* Pulse Test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Typical Characteristics

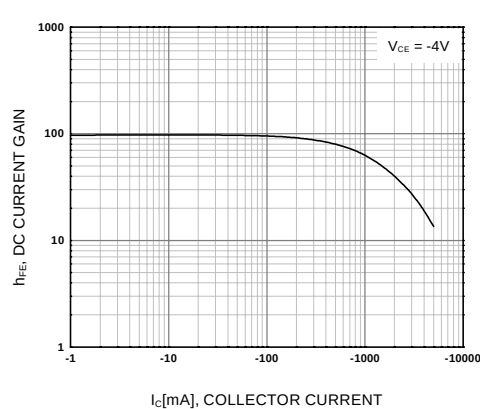


Figure 1. DC current Gain

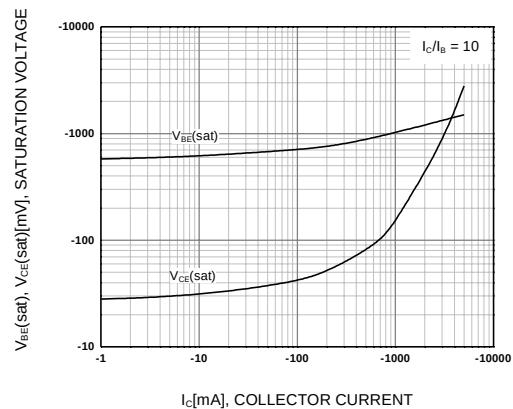


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

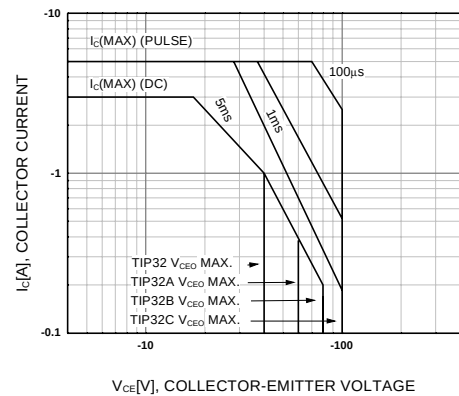


Figure 3. Safe Operating Area

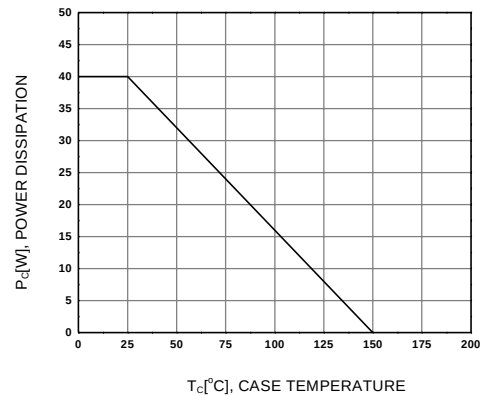


Figure 4. Power Derating