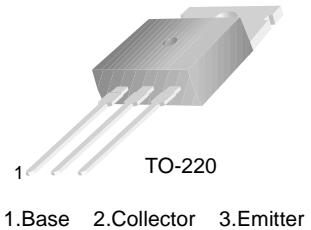


**General Purpose and Switching Applications**

- DC Current Gain Specified to  $I_C = 10$  A
- High Current Gain Bandwidth Product :  $f_T = 2$ MHz (Min.)



**PNP Silicon Transistor**

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	- 70	V
$V_{CEO}$	Collector-Emitter Voltage	- 60	V
$V_{EBO}$	Emitter-Base Voltage	- 5	V
$I_C$	Collector Current	- 10	A
$I_B$	Base Current	- 6	A
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	75	W
	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	0.6	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
$BV_{CEO}$	Collector- Emitter Breakdown Voltage	$I_C = - 200\text{mA}$ , $I_B = 0$	-60		V
$I_{CEO}$	Collector Cut-off Current	$V_{CE} = - 30\text{V}$ , $I_B = 0$		-700	$\mu\text{A}$
$I_{CEX1}$	Collector Cut-off Current	$V_{CE} = - 70\text{V}$ , $V_{BE}(\text{off}) = 1.5\text{V}$		-1	mA
$I_{CEX2}$	Collector Cut-off Current	$V_{CE} = - 70\text{V}$ , $V_{BE}(\text{off}) = 1.5\text{V}$ @ $T_C = 150^\circ\text{C}$		-5	mA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = - 5\text{V}$ , $I_C = 0$		-5	mA
$h_{FE}$	* DC Current Gain	$V_{CE} = - 4\text{V}$ , $I_C = - 4\text{A}$ $V_{CE} = - 4\text{V}$ , $I_C = - 10\text{A}$	20 5	100	
$V_{CE}(\text{sat})$	* Collector-Emitter Saturation Voltage	$I_C = - 4\text{A}$ , $I_B = - 0.4\text{A}$ $I_C = - 10\text{A}$ , $I_B = - 3.3\text{A}$		-1.1 -8	V
$V_{BE}(\text{on})$	* Base-Emitter On Voltage	$V_{CE} = - 4\text{V}$ , $I_C = - 4\text{A}$		-1.8	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = - 10\text{V}$ , $I_C = - 500\text{mA}$	2		MHz

\* Pulse test:  $PW \leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$  Pulse

## Typical Characteristic

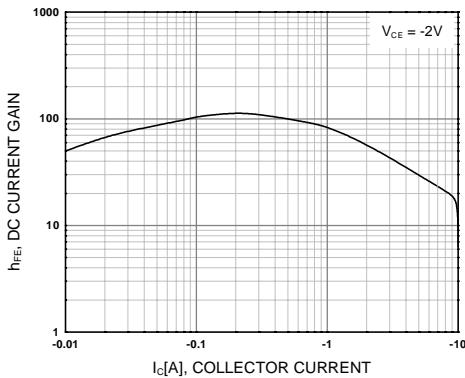


Figure 1. DC current Gain

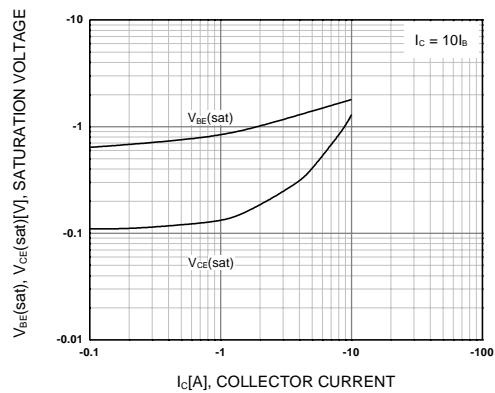


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

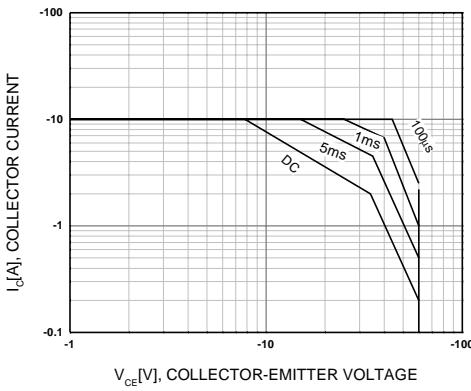


Figure 3. Safe Operating Area

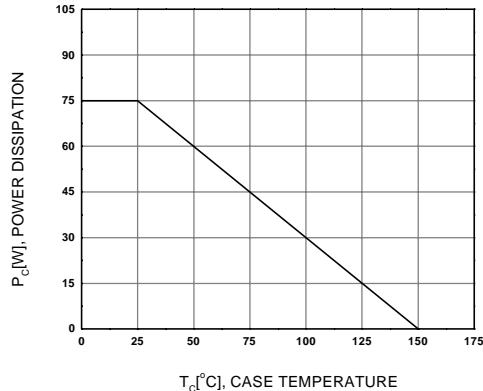
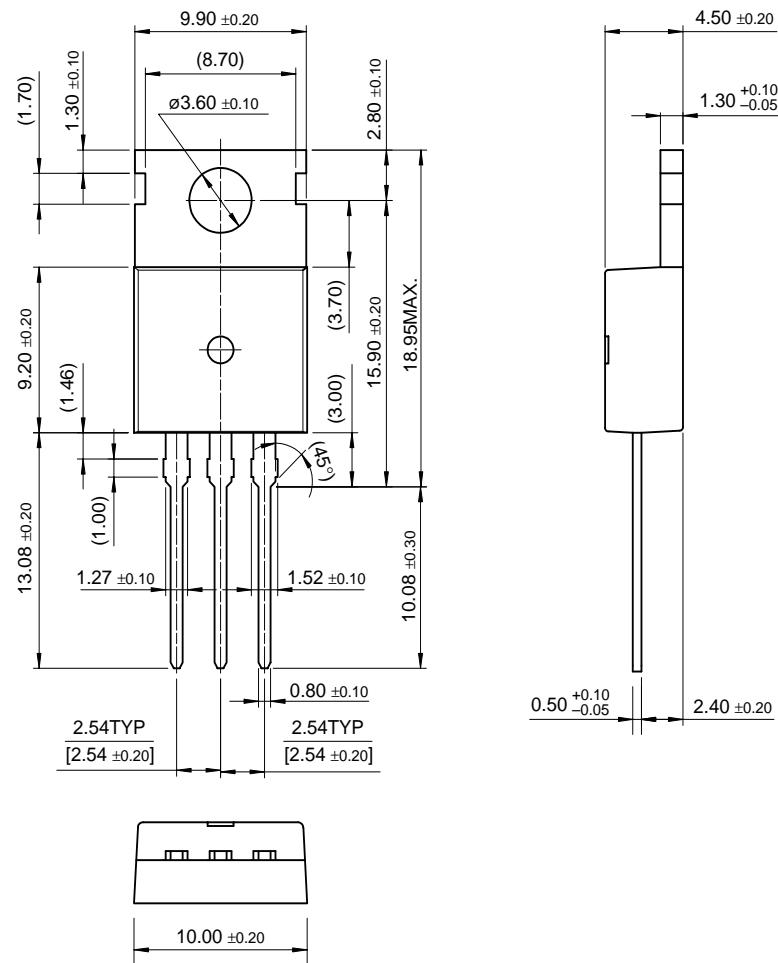


Figure 4. Power Derating

## Package Demensions

## TO-220



Dimensions in Millimeters

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