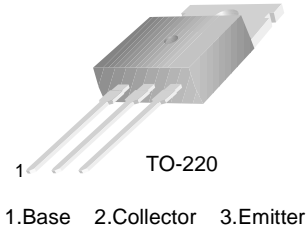




## TIP41 Series(TIP41/41A/41B/41C)

### Medium Power Linear Switching Applications

- Complement to TIP42/42A/42B/42C



### NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
$V_{CBO}$	: TIP41A	40	V
	: TIP41B	60	V
	: TIP41C	80	V
		100	V
$V_{CEO}$	Collector-Emitter Voltage: TIP41	40	V
	: TIP41A	60	V
	: TIP41B	80	V
	: TIP41C	100	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current (DC)	6	A
$I_{CP}$	Collector Current (Pulse)	10	A
$I_B$	Base Current	2	A
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	65	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	$I_C = 30\text{mA}, I_B = 0$	40		V
	: TIP41				
	: TIP41A				
	: TIP41B				
$I_{CEO}$	Collector Cut-off Current	$V_{CE} = 30\text{V}, I_B = 0$		0.7	mA
		$V_{CE} = 60\text{V}, I_B = 0$		0.7	mA
$I_{CES}$	Collector Cut-off Current	$V_{CE} = 40\text{V}, V_{EB} = 0$		400	$\mu\text{A}$
		$V_{CE} = 60\text{V}, V_{EB} = 0$		400	$\mu\text{A}$
		$V_{CE} = 80\text{V}, V_{EB} = 0$		400	$\mu\text{A}$
		$V_{CE} = 100\text{V}, V_{EB} = 0$		400	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$		1	mA
$h_{FE}$	* DC Current Gain	$V_{CE} = 4\text{V}, I_C = 0.3\text{A}$	30		
		$V_{CE} = 4\text{V}, I_C = 3\text{A}$	15	75	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 6\text{A}, I_B = 600\text{mA}$		1.5	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$V_{CE} = 4\text{V}, I_C = 6\text{A}$		2.0	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

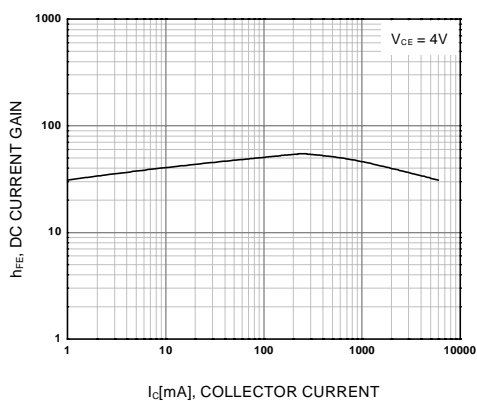


Figure 1. DC current Gain

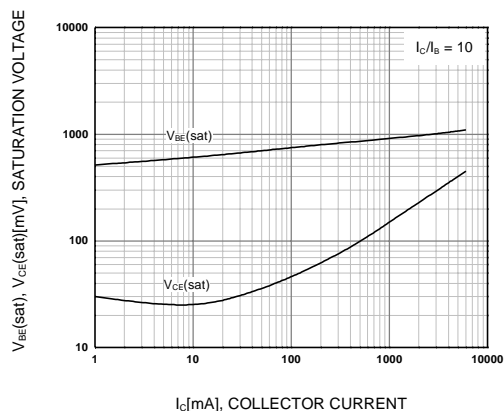


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

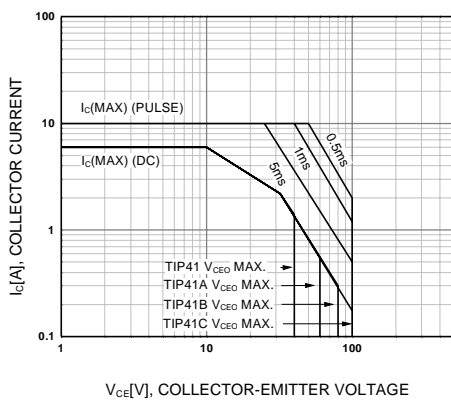


Figure 3. Safe Operating Area

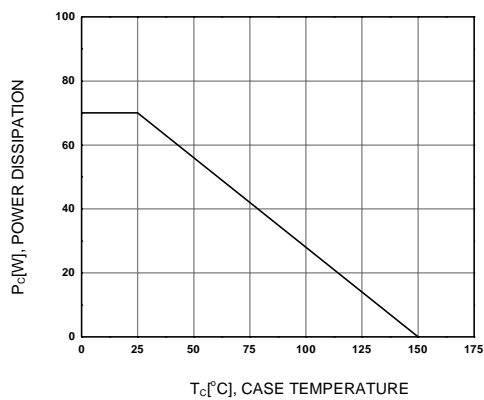
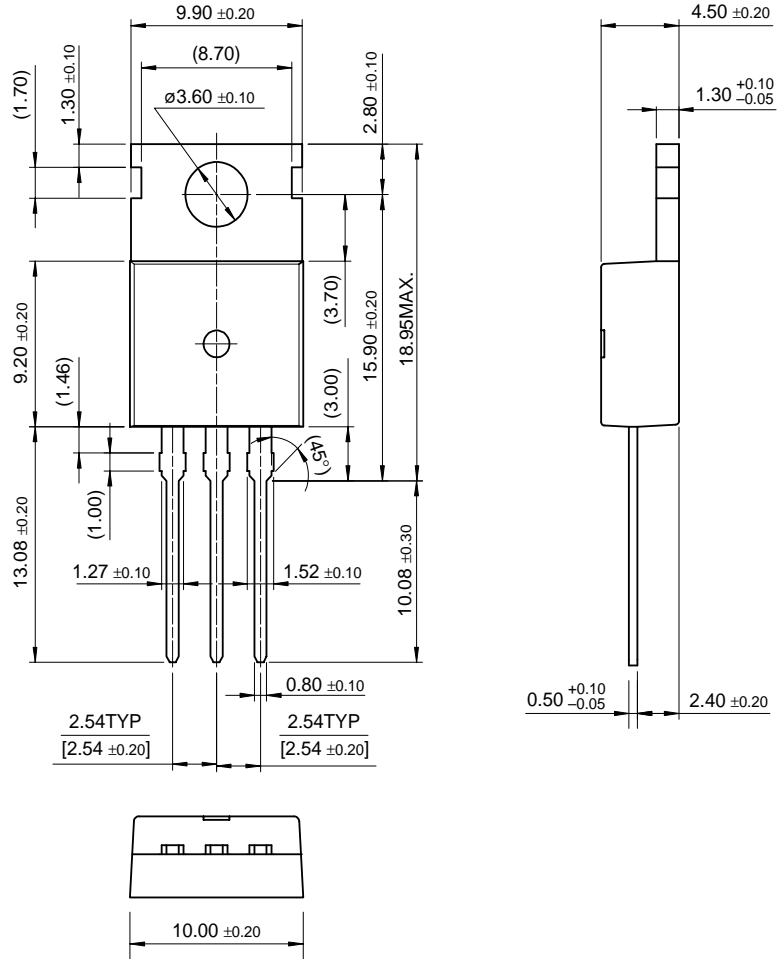


Figure 4. Power Derating

# Package Dimensions

## TO-220



TIP41 Series(TIP41/A/41B/41C)

Dimensions in Millimeters

Rev. A, February 2000

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