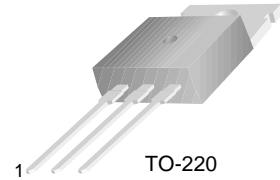


TIP29 Series(TIP29/29A/29B/29C)

Medium Power Linear Switching Applications

- Complementary to TIP30/30A/30B/30C



TO-220
1.Base 2.Collector 3.Emitter

NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units	
V_{CBO}	Collector-Base Voltage	: TIP29	40	V
		: TIP29A	60	V
		: TIP29B	80	V
		: TIP29C	100	V
V_{CEO}	Collector-Emitter Voltage	: TIP29	40	V
		: TIP29A	60	V
		: TIP29B	80	V
		: TIP29C	100	V
V_{EBO}	Emitter-Base Voltage	5	V	
I_C	Collector Current (DC)	1	A	
I_{CP}	Collector Current (Pulse)	3	A	
I_B	Base Current	0.4	A	
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	30	W	
	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	$I_C = 30\text{mA}, I_B = 0$: TIP29	40	V
			: TIP29A	60	V
			: TIP29B	80	V
			: TIP29C	100	V
I_{CEO}	Collector Cut-off Current	$V_{CE} = 30\text{V}, I_B = 0$		0.3	mA
		$V_{CE} = 60\text{V}, I_B = 0$		0.3	mA
I_{CES}	Collector Cut-off Current	$V_{CE} = 40\text{V}, V_{EB} = 0$		200	μA
		$V_{CE} = 60\text{V}, V_{EB} = 0$		200	μA
		$V_{CE} = 80\text{V}, V_{EB} = 0$		200	μA
		$V_{CE} = 100\text{V}, V_{EB} = 0$		200	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$		1.0	mA
h_{FE}	*DC Current Gain	$V_{CE} = 4\text{V}, I_C = 0.2\text{A}$	40		
		$V_{CE} = 4\text{V}, I_C = 1\text{A}$	15	75	
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 1\text{A}, I_B = 125\text{mA}$		0.7	V
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage	$V_{CE} = 4\text{V}, I_C = 1\text{A}$		1.3	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 200\text{mA}$	3.0		MHz

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

Typical Characteristics

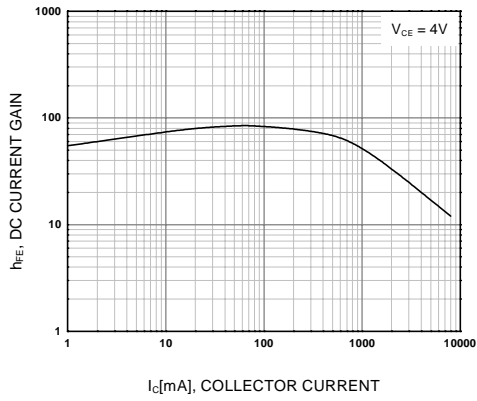


Figure 1. DC current Gain

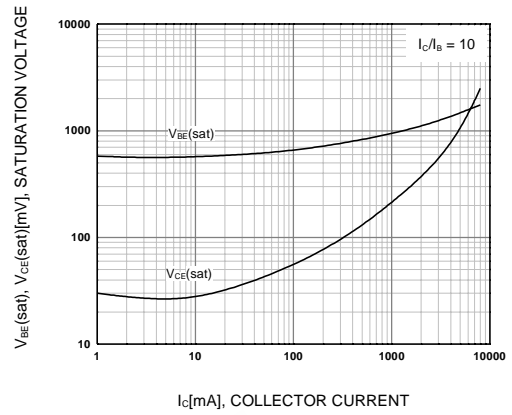


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

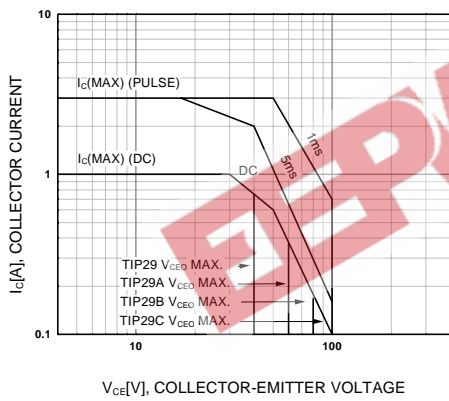


Figure 3. Safe Operating Area

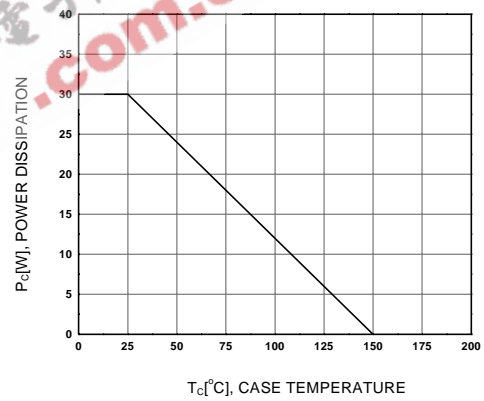
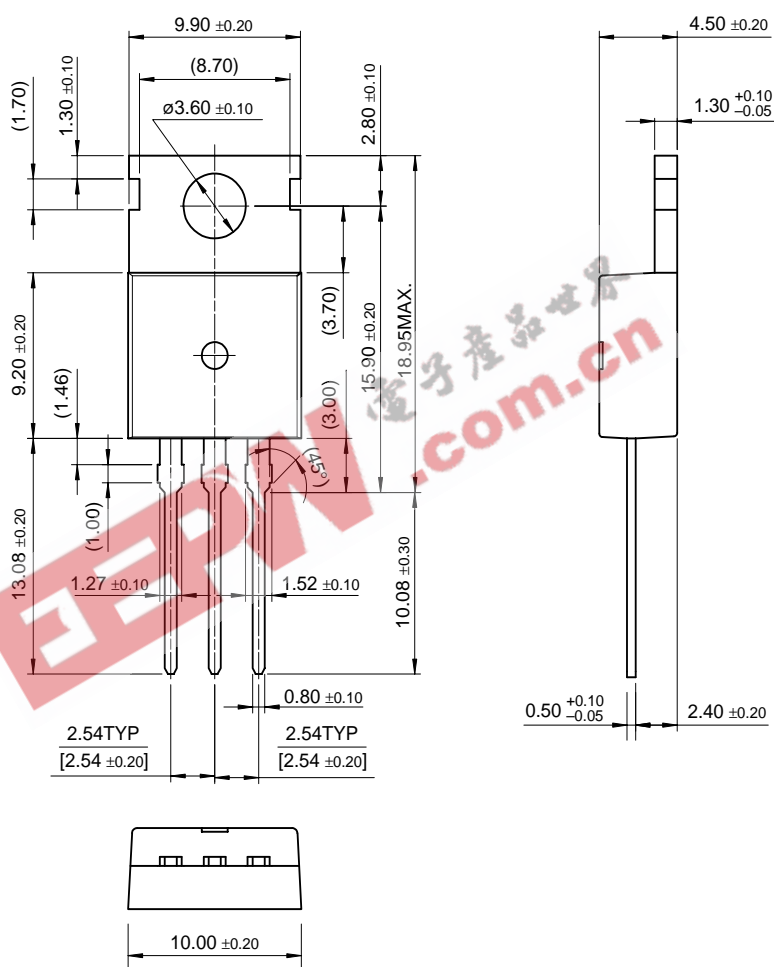


Figure 4. Power Derating

Package Demensions

TO-220



Dimensions in Millimeters

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