



**ELECTRONICS, INC.**  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089

## TIP29A, TIP29B, TIP29C NPN Silicon Epitaxial Transistor Medium Power Amp, Switch TO-220 Type Package

**Description:**

The TIP29A, TIP29B, and TIP29C are General-Purpose Medium-Power silicon NPN transistors in a TO-220 type package designed for switching and amplifier applications. They are especially designed for series and shunt regulators and as a driver and output stage of high-fidelity amplifiers.

**Features:**

- Medium Power Linear Switching Applications
- Complementary to TIP30 Series

**Absolute Maximum Ratings:** ( $T_C = +25^\circ\text{C}$  unless otherwise specified)

Collector-Base Voltage, $V_{CBO}$	
TIP29A .....	60V
TIP29B .....	80V
TIP29C .....	100V
Collector-Emitter Voltage, $V_{CEO}$	
TIP29A .....	60V
TIP29B .....	80V
TIP29C .....	100V
Emitter-Base Voltage, $V_{EBO}$	5V
Collector Current, $I_C$	
DC .....	1A
Pulse .....	3A
Base Current, $I_B$	0.4A
Collector Dissipation, $P_C$	
( $T_A = 25^\circ\text{C}$ ) .....	2W
( $T_C = 25^\circ\text{C}$ ) .....	30W
Operating Junction Temperature, $T_J$	+150°C
Storage Temperature Range, $T_{stg}$	-65° to +150°C

**Electrical Characteristics:** ( $T_C = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Sustaining Voltage TIP29A	$V_{CEO(sus)}$	$I_C = 30\text{mA}, I_B = 0$	60	–	–	V
TIP29B			80	–	–	v
TIP29C			100	–	–	v
Collector Cutoff Current TIP29A	$I_{CEO}$	$V_{CE} = 20\text{V}, I_B = 0$	–	–	0.3	mA
TIP29B, TIP29C		$V_{CE} = 60\text{V}, I_B = 0$	–	–	0.3	mA
TIP29A	$I_{CES}$	$V_{CE} = 60\text{V}, V_{EB} = 0$	–	–	200	$\mu\text{A}$
TIP29B		$V_{CE} = 80\text{V}, V_{EB} = 0$	–	–	200	$\mu\text{A}$
TIP29C		$V_{CE} = 100\text{V}, V_{EB} = 0$	–	–	200	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$	–	–	1	mA
DC Current Gain	$h_{FE}$	$V_{CE} = 4\text{V}, I_C = 0.2\text{A}, \text{Note 1}$	40	–	–	
		$V_{CE} = 4\text{V}, I_C = 1\text{A}, \text{Note 1}$	15	–	75	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 125\text{mA}, \text{Note 1}$	–	–	0.7	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$V_{CE} = 4\text{V}, I_C = 1\text{A}, \text{Note 1}$	–	–	1.3	V
Current Gain Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}, I_C = 200\text{mA}$	3	–	–	MHz

Note 1. Pulse test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

