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TIP30A, TIP30B, TIP30C Silicon PNP Transistors Medium Power Amp, Switch

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

Collector–Base Voltage, V_{CBO}

TIP30A	60V
TIP30B	80V
TIP30C	100V

Collector–Emitter Voltage, V_{CEO}

TIP30A	60V
TIP30B	80V
TIP30C	100V

Emitter–Base Voltage, V_{EBO} 5V

Continuous Current, I_C

Continuous	1A
Pulse	3A

Continuous Base Current, I_B 0.4A

Power Dissipation, P_D

$T_C = +25^\circ\text{C}$	30W
$T_A = +25^\circ\text{C}$	2W

Operating Junction Temperature, T_J $+150^\circ\text{C}$

Storage Temperature Range, T_{stg} -65° to $+150^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Sustaining Voltage TIP30A	$V_{CEO(sus)}$	$I_C = 30\text{mA}$, $I_B = 0$, Note 1	60	–	–	V
TIP30B			80	–	–	V
TIP30C			100	–	–	V
Collector Cutoff Current TIP30A	I_{CEO}	$V_{CE} = 30\text{V}$, $I_B = 0$	–	–	0.3	mA
TIP30B, TIP30C		$V_{CE} = 60\text{V}$, $I_B = 0$	–	–	0.3	mA
Collector Cutoff Current TIP30A	I_{CES}	$V_{CE} = 60\text{V}$, $V_{EB} = 0$	–	–	200	μA
TIP30B		$V_{CE} = 80\text{V}$, $V_{EB} = 0$	–	–	200	μA
TIP30C		$V_{CE} = 100\text{V}$, $V_{EB} = 0$	–	–	200	μA

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

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 5\text{V}, I_C = 0$	–	–	1.0	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	$V_{CE} = 10\text{V}, I_C = 200\text{mA}, f = 1\text{MHz}$	3	–	–	MHz

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

