

ON Semiconductor® TIP41A / TIP41B / TIP41C

# NPN Epitaxial Silicon Transistor

#### Features

- Medium Power Linear Switching Applications
- Complement to TIP42 Series



1.Base 2.Collector 3.Emitter

#### **Ordering Information**

Part Number	Top Mark	Package	Packing Method
TIP41A	TIP41A	TO-220 3L (Single Gauge)	Bulk
TIP41B	TIP41B	TO-220 3L (Single Gauge)	Bulk
TIP41C	TIP41C	TO-220 3L (Single Gauge)	Bulk
TIP41CTU	TIP41C	TO-220 3L (Single Gauge)	Rail

## **Absolute Maximum Ratings**

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_c = 25^{\circ}C$  unless otherwise noted.

Symbol	Parameter		Value	Unit	
		TIP41A	60		
V <sub>CBO</sub>	Collector-Base Voltage	TIP41B	80	V	
		TIP41C	100	1	
		TIP41A	60		
V <sub>CEO</sub>	Collector-Emitter Voltage	TIP41B	80	V	
		TIP41C	100		
V <sub>EBO</sub>	Emitter-Base Voltage		5	V	
۱ <sub>C</sub>	Collector Current (DC)		6	A	
I <sub>CP</sub>	Collector Current (Pulse)		10	A	
Ι <sub>Β</sub>	Base Current		2	A	
TJ	Junction Temperature		150	°C	
T <sub>STG</sub>	Storage Temperature Range		-65 to 150	°C	

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## **Thermal Characteristics**

Values are at  $T_C = 25^{\circ}C$  unless otherwise noted.

Symbol	Parameter	Value	Unit	
P <sub>C</sub>	Collector Dissipation ( $T_C = 25^{\circ}C$ )	65	W	
	Collector Dissipation ( $T_A = 25^{\circ}C$ )	2		

## **Electrical Characteristics**

Values are at  $T_C = 25^{\circ}C$  unless otherwise noted.

Symbol	Parameter		Conditions	Min.	Max.	Unit
V <sub>CEO</sub> (sus)	Collector-Emitter Sustaining Voltage <sup>(1)</sup>	TIP41A	I <sub>C</sub> = 30 mA, I <sub>B</sub> = 0	60		V
		TIP41B		80		
		TIP41C		100		
I <sub>CEO</sub>	Collector Cut-Off Current	TIP41A	$V_{CE} = 30 \text{ V}, \text{ I}_{B} = 0$		0.7	mA
		TIP41B / TIP41C	$V_{CE} = 60 \text{ V}, \text{ I}_{B} = 0$		0.7	
I <sub>CES</sub>	Collector Cut-Off Current	TIP41A	$V_{CE} = 60 \text{ V}, \text{ V}_{EB} = 0$		400	μΑ
		TIP41B	$V_{CE} = 80 \text{ V}, \text{ V}_{EB} = 0$		400	
		TIP41C	V <sub>CE</sub> = 100 V, V <sub>EB</sub> = 0		400	
I <sub>EBO</sub>	Emitter Cut-Off Current		$V_{EB} = 5 V, I_{C} = 0$		1	mA
h <sub>FE</sub>	DC Current Gain <sup>(1)</sup>		$V_{CE} = 4 \text{ V}, I_{C} = 0.3 \text{ A}$	30		
			$V_{CE} = 4 \text{ V}, I_{C} = 3 \text{ A}$	15	75	
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage <sup>(1)</sup>		I <sub>C</sub> = 6 A, I <sub>B</sub> = 600 mA		1.5	V
V <sub>BE</sub> (on)	Base-Emitter On Voltage <sup>(1)</sup>		$V_{CE} = 4 \text{ V}, I_{C} = 6 \text{ A}$		2.0	V
f <sub>T</sub>	Current Gain Bandwidth Product		$V_{CE} = 10 \text{ V}, \text{ I}_{C} = 500 \text{ mA},$ f = 1 MHz	3.0		MHz

#### Note:

1. Pulse test:  $pw \le 300 \ \mu s$ , duty cycle  $\le 2\%$ .



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