

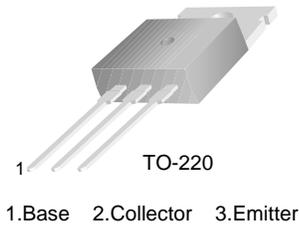


ON Semiconductor®

TIP41A / TIP41B / TIP41C NPN Epitaxial Silicon Transistor

Features

- Medium Power Linear Switching Applications
- Complement to TIP42 Series



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 $T_C = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	TIP41A	60
		TIP41B	80
		TIP41C	100
V_{CEO}	Collector-Emitter Voltage	TIP41A	60
		TIP41B	80
		TIP41C	100
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
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-65 to 150	$^\circ\text{C}$

Thermal Characteristics

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

Symbol	Parameter	Value	Unit
P_C	Collector Dissipation ($T_C = 25^\circ\text{C}$)	65	W
	Collector Dissipation ($T_A = 25^\circ\text{C}$)	2	

Electrical Characteristics

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

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

Note:

1. Pulse test: $p_w \leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

Typical Performance Characteristics

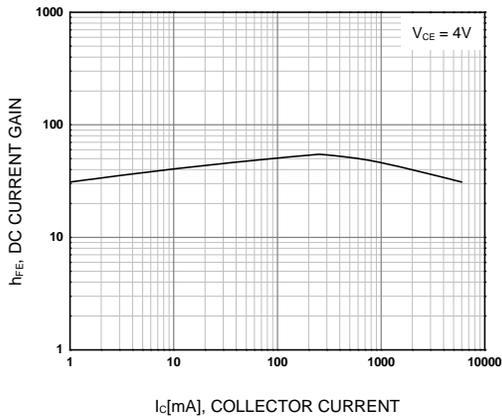


Figure 1. DC Current Gain

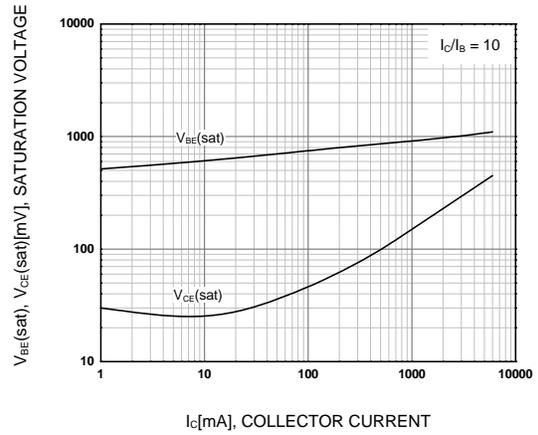


Figure 2. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

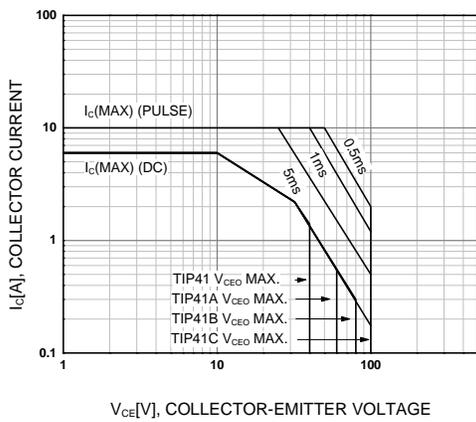


Figure 3. Safe Operating Area

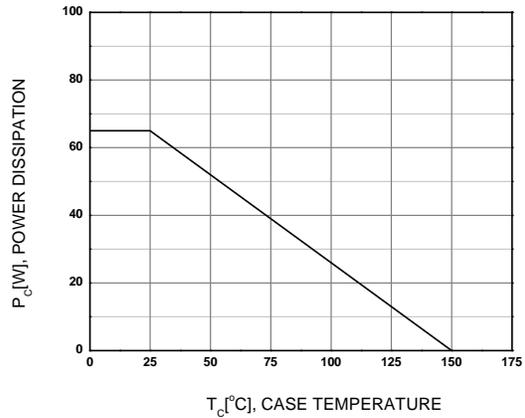


Figure 4. Power Derating

Physical Dimensions

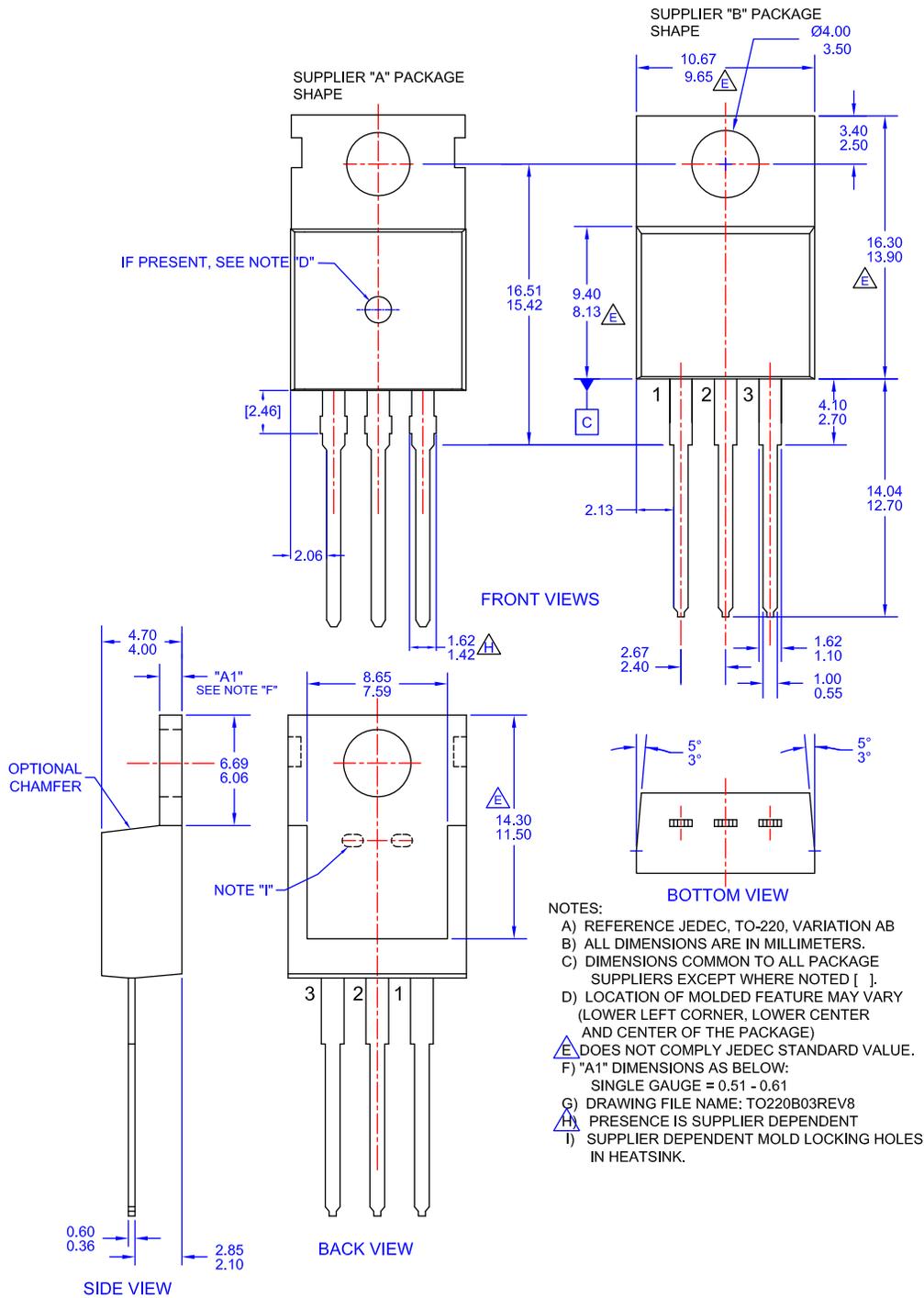


Figure 5. TO-220, MOLDED, 3LEAD, JEDEC VARIATION AB

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