

TIP41/41A/41B/41C

SemiHow
Know-How for Semiconductor

TIP41/41A/41B/41C

Medium Power Linear Switching Applications

- Complement to TIP42/42A/42B/42C

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

CHARACTERISTICS	SYMBOL	RATING	UNIT
Collector-Base Voltage : TIP41	V_{CBO}	40	V
: TIP41A		60	V
: TIP41B		80	V
: TIP41C		100	V
Collector-Emitter Voltage : TIP41	V_{CEO}	40	V
: TIP41A		60	V
: TIP41B		80	V
: TIP41C		100	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current(DC)	I_C	6	A
Collector Current(Pulse)	I_{CP}	10	A
Base Current	I_B	2	A
Collector Dissipation($T_a=25^\circ\text{C}$)	P_C	2	W
Collector Dissipation($T_c=25^\circ\text{C}$)	P_C	65	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65~150	$^\circ\text{C}$

NPN Epitaxial Silicon Darlington Transistor

TO-220

1. Base
2. Collector
3. Emitter

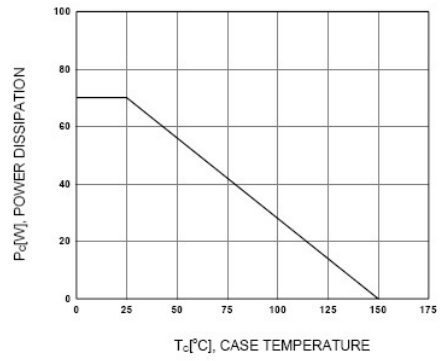
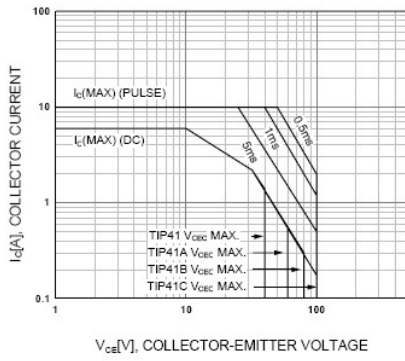
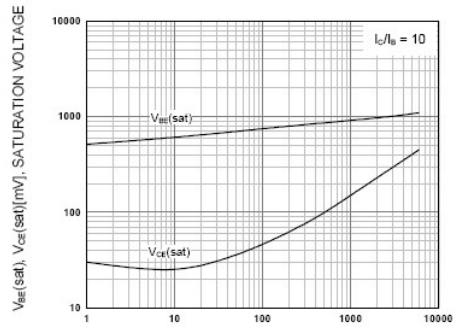
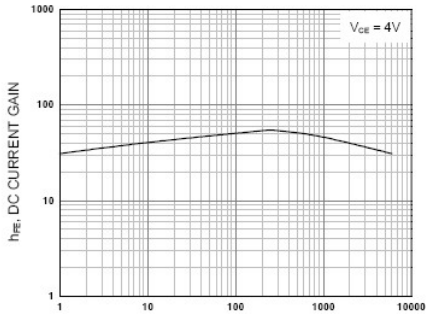


Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

CHARACTERISTICS	SYMBOL	Test Condition	Min	Max	Unit
Collector-Emitter Sustaining Voltage : TIP41 : TIP41A : TIP41B : TIP41C	$V_{CEO(SUS)}$	$I_C=30\text{mA}, I_B=0$	40		V
			60		V
			80		V
			100		V
Collector Cut-off Current : TIP41/41A : TIP41B/41C	I_{CEO}	$V_{CE}=30\text{V}, I_B=0$		0.7	mA
		$V_{CE}=60\text{V}, I_B=0$		0.7	mA
Collector Cut-off Current : TIP41 : TIP41A : TIP41B : TIP41C	I_{CES}	$V_{CE}=40\text{V}, V_{EB}=0$		400	μA
		$V_{CE}=60\text{V}, V_{EB}=0$		400	μA
		$V_{CE}=80\text{V}, V_{EB}=0$		400	μA
		$V_{CE}=100\text{V}, V_{EB}=0$		400	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$		1	mA
*DC Current Gain	h_{FE}	$V_{CE}=4\text{V}, I_C=0.3\text{A}$	30		
		$V_{CE}=4\text{V}, I_C=3\text{A}$	15	75	
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=6\text{A}, I_B=600\text{mA}$		1.5	V
*Base-Emitter ON Voltage	$V_{BE(on)}$	$V_{CE}=4\text{V}, I_C=6\text{A}$		2.0	V
Output Capacitance	f_T	$V_{CE}=10\text{V}, I_C=500\text{mA}, f=1\text{MHz}$	3.0		MHz

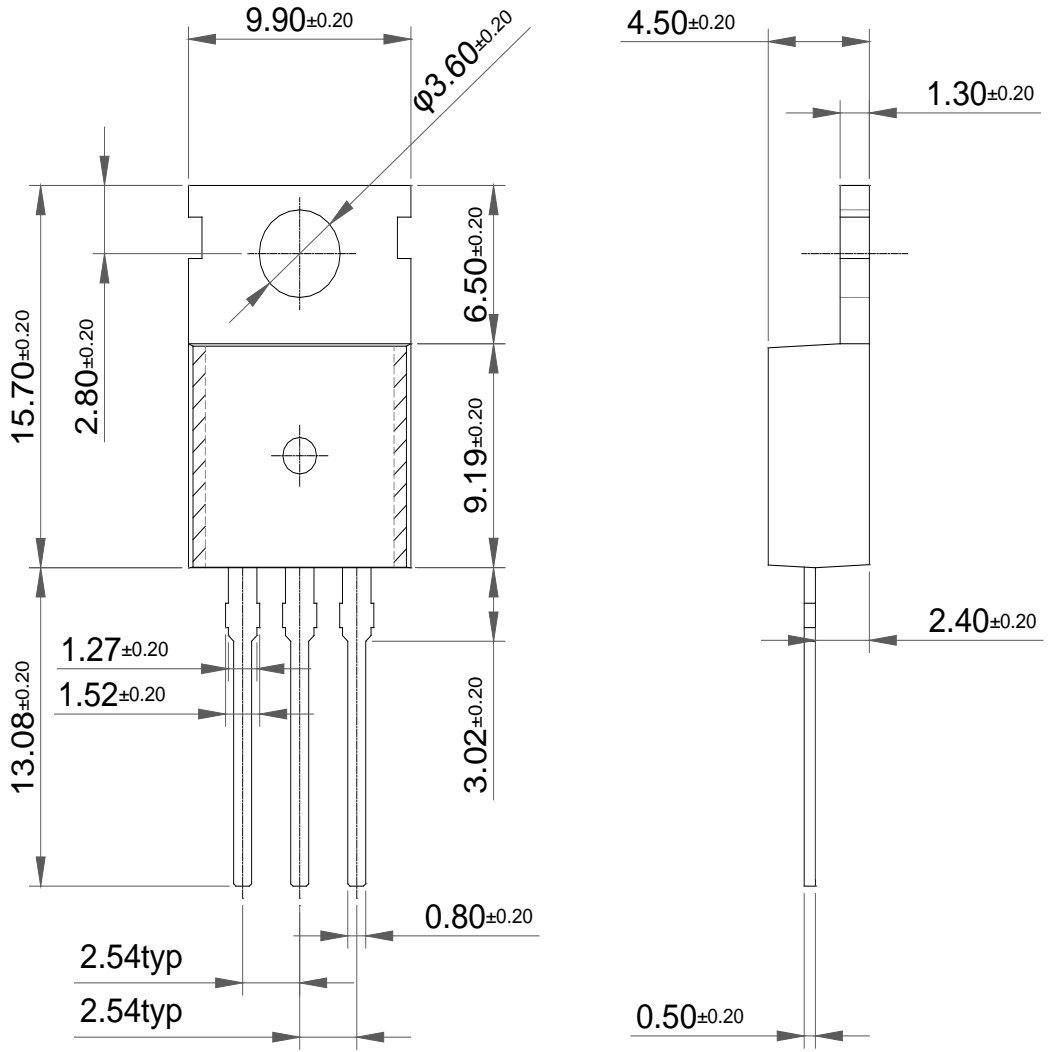
* Pulse Test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Typical Characteristics



Package Dimension

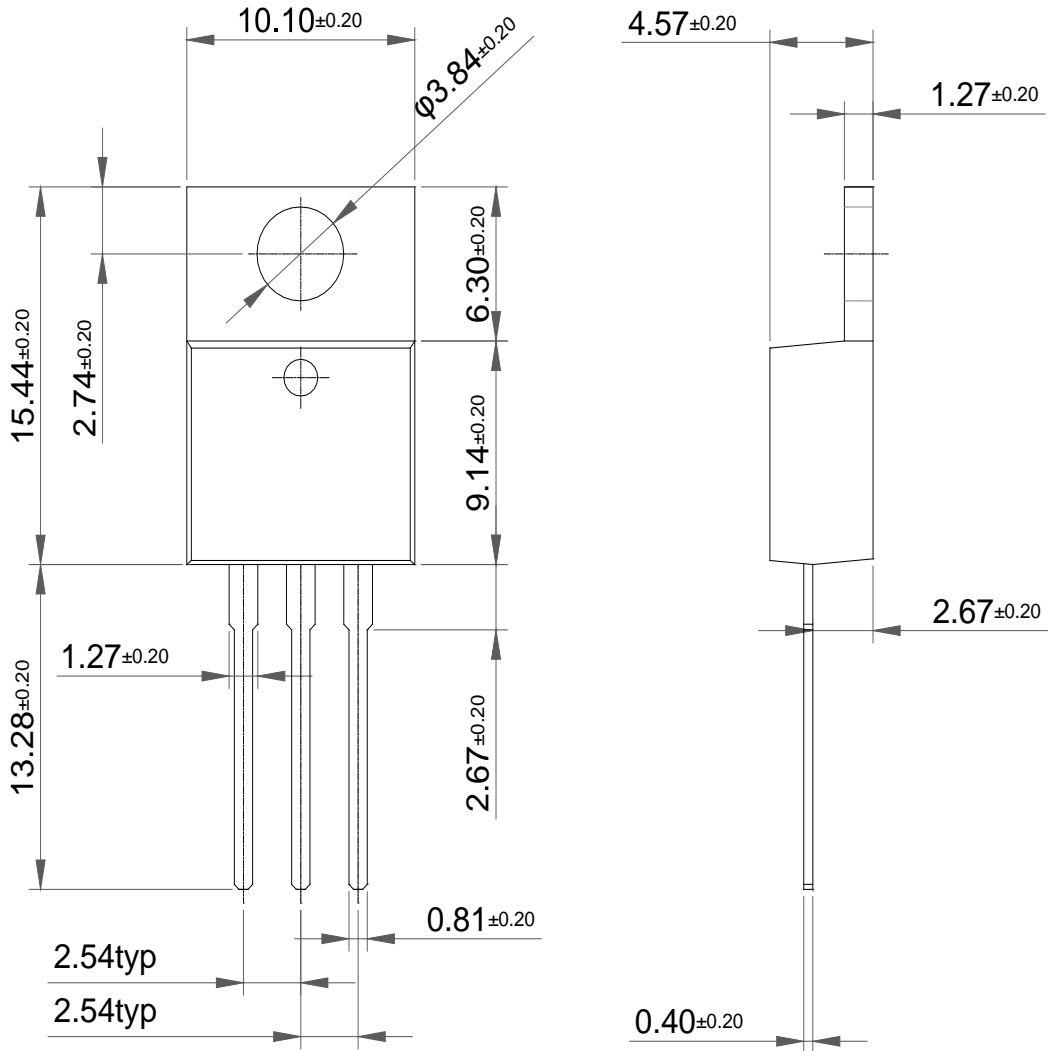
TO-220 (A)



Dimensions in Millimeters

Package Dimension

TO-220 (B)



Dimensions in Millimeters