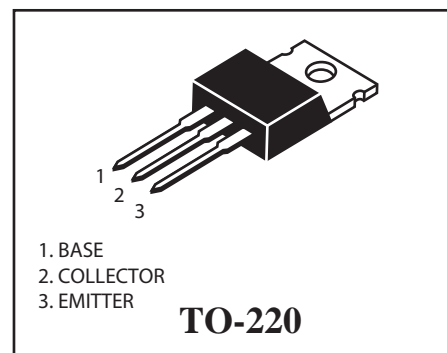
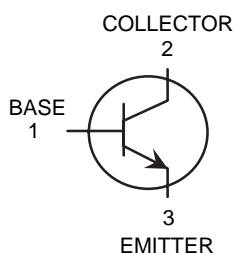


### NPN Silicon Power Transistor

**(Pb)** Lead(Pb)-Free

#### FEATURES:

\* Medium Power Linear Switching Applications



#### MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	TIP41	TIP41A	TIP41B	TIP41C	Units
$V_{CB0}$	Collector-Base Voltage	40	60	80	100	V
$V_{CEO}$	Collector-Emitter Voltage	40	60	80	100	V
$V_{EBO}$	Emitter-Base Voltage	5				V
$I_C$	Collector Current -Continuous	6				A
$P_C$	Collector Power Dissipation	2				W
$T_J$	Junction Temperature	150				$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature	-55-150				$^{\circ}\text{C}$

#### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	TIP41	$I_C=1\text{mA}, I_E=0$	40		V
	TIP41A		60		
	TIP41B		80		
	TIP41C		100		
Collector-emitter breakdown voltage	TIP41	$I_C=30\text{mA}, I_B=0$	40		V
	TIP41A		60		
	TIP41B		80		
	TIP41C		100		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}, I_C=0$	5		V
Collector cut-off current	TIP41	$V_{CB}=40\text{V}, I_E=0$ $V_{CB}=60\text{V}, I_E=0$ $V_{CB}=80\text{V}, I_E=0$ $V_{CB}=100\text{V}, I_E=0$		0.4	mA
	TIP41A				
	TIP41B				
	TIP41C				
Collector cut-off current	TIP41/41A TIP41B/41C	$V_{CE}=30\text{V}, I_B=0$ $V_{CE}=60\text{V}, I_B=0$		0.7	mA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$		1	mA
DC current gain	$h_{FE(1)}$	$V_{CE}=4\text{V}, I_C=0.3\text{A}$	30		
	$h_{FE(2)}$	$V_{CE}=4\text{V}, I_C=3\text{A}$	15	75	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=6\text{A}, I_B=0.6\text{A}$		1.5	V
Base-emitter voltage	$V_{BE(on)}$	$V_{CE}=4\text{V}, I_C=6\text{A}$		2	V
Transition Frequency	$f_T$	$V_{CE}=10\text{V}, I_C=0.5\text{A}$ $f = 1\text{MHz}$	3		MHz

## Typical Characteristics

## TIP41/41A/41B/41C

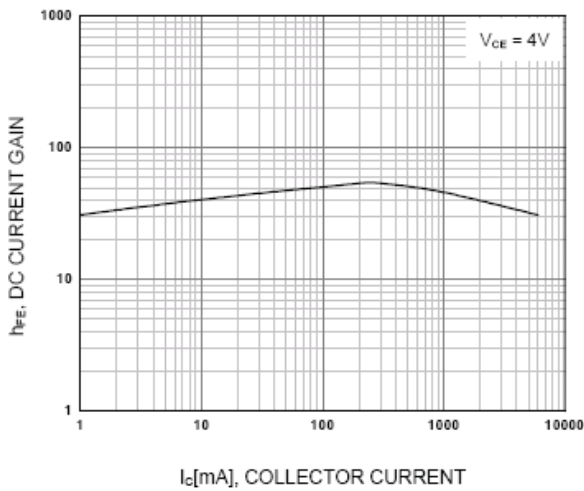


Figure 1. DC current Gain

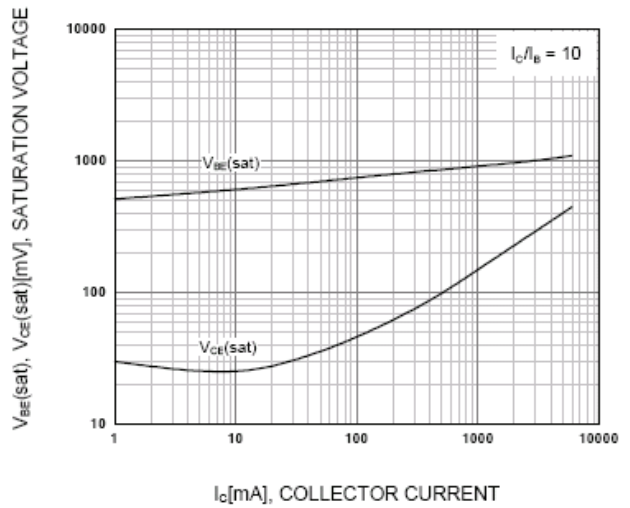


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

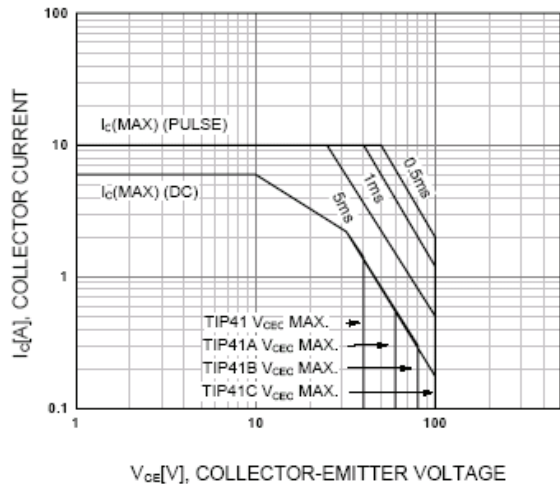


Figure 3. Safe Operating Area

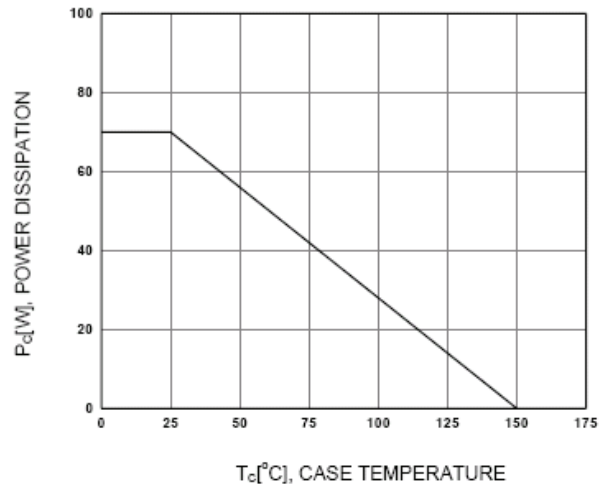
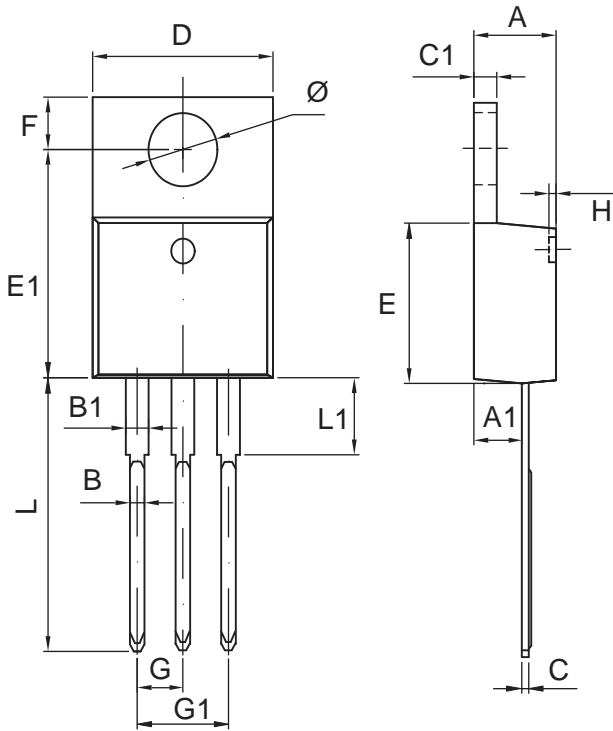


Figure 4. Power Derating

## TO-220 Outline Dimensions

unit:mm



TO-220		
Dim	Min	Max
A	4.47	4.67
A1	2.52	2.82
B	0.71	0.91
B1	1.17	1.37
C	0.31	0.53
C1	1.17	1.37
D	10.01	10.31
E	8.50	8.90
E1	12.06	12.446
G	2.54 TYP	
G1	4.98	5.18
F	2.59	2.89
H	0.00	0.30
L	13.4	13.8
L1	3.56	3.96
Φ	3.73	3.93