

NPN TIP41-A-B-C

SILICON POWER TRANSISTORS

They are epitaxial-base NPN power transistors mounted in jedec TO-220 plastic package.
They are intended for use in medium power linear and switching applications.
PNP complements are TIP42-A-B-C
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit	
V_{CBO}	Collector-Base Voltage	TIP41	40	V
		TIP41A	60	
		TIP41B	80	
		TIP41C	100	
V_{CEO}	Collector-Emitter Voltage	TIP41	40	V
		TIP41A	60	
		TIP41B	80	
		TIP41C	100	
V_{EBO}	Emitter-Base Voltage	TIP41	5	V
		TIP41A		
		TIP41B		
		TIP41C		
I_C	Collector Current	TIP41	6	A
		TIP41A		
		TIP41B		
		TIP41C		
I_{CM}	Collector Peak Current	TIP41	10	A
		TIP41A		
		TIP41B		
		TIP41C		

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ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
I_B	Base Current	TIP41	2	A
		TIP41A		
		TIP41B		
		TIP41C		
P_C	Power Dissipation	@ $T_c < 25^\circ$	65	Watts
		TIP41		
		TIP41A		
		TIP41B		
		TIP41C		
		@ $T_a < 25^\circ$	2	
		TIP41		
		TIP41A		
TIP41B				
TIP41C				
T_J	Junction Temperature	TIP41	150	$^\circ\text{C}$
		TIP41A		
		TIP41B		
		TIP41C		
T_s	Storage Temperature range	TIP41	-65 to +150	$^\circ\text{C}$
		TIP41A		
		TIP41B		
		TIP41C		

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJ-MB}	From junction to mounting base	TIP41	1.92	$^\circ\text{C/W}$
		TIP41A		
		TIP41B		
		TIP41C		
R_{thJ-A}	From junction to ambient in free air	TIP41	62.5	$^\circ\text{C/W}$
		TIP41A		
		TIP41B		
		TIP41C		

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

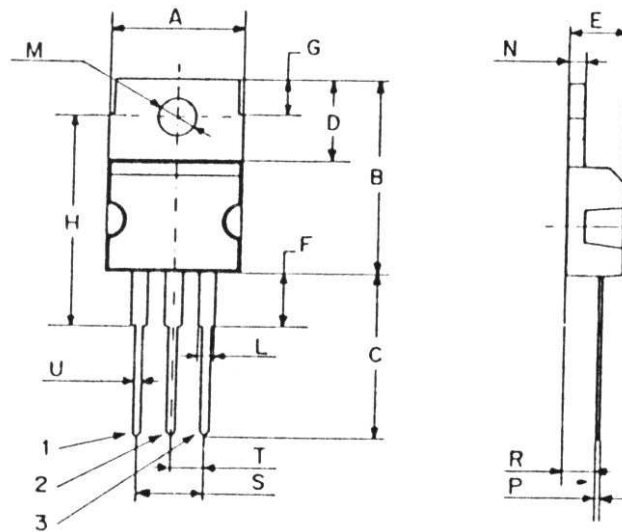
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
I_{CES}	Collector Cutoff Current	$I_E = 0, V_{CE} = V_{CEO}$	TIP41	-	-	0.4	Ma
			TIP41A				
			TIP41B				
			TIP41C				
I_{CEO}	Collector Cutoff Current	$I_B = 0, V_{CE} = 30V$	TIP41	-	-	0.7	mA
			TIP41A				
		$I_B = 0, V_{CE} = 60V$	TIP41B	-	-	0.7	
			TIP41C				
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5 V, I_C = 0$	TIP41	-	-	1	mA
			TIP41A				
			TIP41B				
			TIP41C				
V_{CEO}	Collector-Emitter Breakdown Voltage (*)	$I_C = 30 \text{ mA}, I_B = 0$	TIP41	40	-	-	V
			TIP41A	60	-	-	
			TIP41B	80	-	-	
			TIP41C	100	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 6 \text{ A}, I_B = 600 \text{ mA}$	TIP41	-	-	1.5	V
			TIP41A				
			TIP41B				
			TIP41C				
$V_{BE(on)}$	Base-Emitter Voltage (*)	$I_C = 6 \text{ A}, V_{CE} = 4 \text{ V}$	TIP41	-	-	2	V
			TIP41A				
			TIP41B				
			TIP41C				
h_{FE}	DC Current Gain (*)	$V_{CE} = 4 \text{ V}, I_C = 0.3 \text{ A}$	TIP41	30	-	-	-
			TIP41A				
			TIP41B				
			TIP41C				
		$V_{CE} = 4 \text{ V}, I_C = 3 \text{ A}$	TIP41	15	-	75	
			TIP41A				
			TIP41B				
			TIP41C				
h_{fe}	Small Signal Current Gain	$V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ A}, f = 1 \text{ kHz}$	TIP41	20	-	-	-
			TIP41A				
			TIP41B				
			TIP41C				
f_T	Current Gain-Bandwidth Product	$V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ A}$	TIP41	3	-	-	MHz
			TIP41A				
			TIP41B				
			TIP41C				

(*) Pulse Width $\approx 300 \mu\text{s}$, Duty Cycle $\angle 2.0\%$

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MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
T	4,98	5,08
U	0,70	0,90



Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Case :	Collector

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