



PNP TIP42-A-B-C

SILICON POWER TRANSISTORS

They are epitaxial-base PNP power transistors mounted in jedec TO-220 plastic package.
 They are intended for use in medium power linear and switching applications.
 NPN complements are TIP41-A-B-C
 Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit	
V_{CBO}	Collector-Base Voltage	TIP42	-40	V
		TIP42A	-60	
		TIP42B	-80	
		TIP42C	-100	
V_{CEO}	Collector-Emitter Voltage	TIP42	-40	V
		TIP42A	-60	
		TIP42B	-80	
		TIP42C	-100	
V_{EBO}	Emitter-Base Voltage	TIP42	-5	V
		TIP42A		
		TIP42B		
		TIP42C		
I_C	Collector Current	TIP42	-6	A
		TIP42A		
		TIP42B		
		TIP42C		
I_{CM}	Collector Peak Current	TIP42	-10	A
		TIP42A		
		TIP42B		
		TIP42C		

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ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
I_B	Base Current	TIP42	-2	A
		TIP42A		
		TIP42B		
		TIP42C		
P_c	Power Dissipation	@ $T_c < 25^\circ$	65	Watts
		TIP42		
		TIP42A		
		TIP42B		
		TIP42C		
		@ $T_a < 25^\circ$	2	
		TIP42		
		TIP42A		
TIP42B				
TIP42C				
T_J	Junction Temperature	—	150	°C
		TIP42		
		TIP42A		
		TIP42B		
TIP42C				
T_s	Storage Temperature range	TIP42	-65 to +150	°C
		TIP42A		
		TIP42B		
		TIP42C		

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJ-MB}	From junction to mounting base	TIP42	1.92	°C/W
		TIP42A		
		TIP42B		
		TIP42C		
R_{thJ-A}	From junction to ambient in free air	TIP42	62.5	°C/W
		TIP42A		
		TIP42B		
		TIP42C		

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

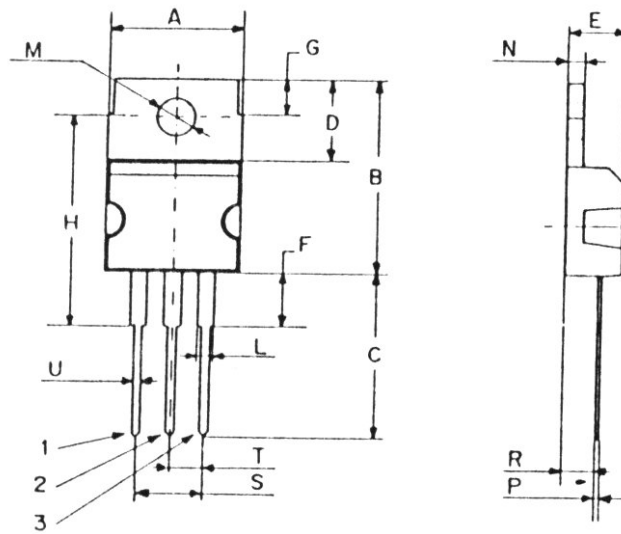
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
I_{CES}	Collector Cutoff Current	$I_E = 0, V_{CE} = -V_{CEO}$	TIP42	-	-	-0.4	Ma
			TIP42A				
			TIP42B				
			TIP42C				
I_{CEO}	Collector Cutoff Current	$I_B = 0, V_{CE} = -30V$	TIP42	-	-	-0.7	mA
			TIP42A				
		$I_B = 0, V_{CE} = -60V$	TIP42B	-	-	-0.7	
			TIP42C				
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5 V, I_C = 0$	TIP42	-	-	-1	mA
			TIP42A				
			TIP42B				
			TIP42C				
V_{CEO}	Collector-Emitter Breakdown Voltage (*)	$I_C = -30 mA, I_B = 0$	TIP42	-40	-	-	V
			TIP42A	-60	-	-	
			TIP42B	-80	-	-	
			TIP42C	-100	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = -6 A, I_B = -600 mA$	TIP42	-	-	-1.5	V
			TIP42A				
			TIP42B				
			TIP42C				
$V_{BE(on)}$	Base-Emitter Voltage (*)	$I_C = -6 A, V_{CE} = -4 V$	TIP42	-	-	-2	V
			TIP42A				
			TIP42B				
			TIP42C				
h_{FE}	DC Current Gain (*)	$V_{CE} = -4 V, I_C = -0.3 A$	TIP42	30	-	-	-
			TIP42A				
			TIP42B				
			TIP42C				
		$V_{CE} = -4 V, I_C = -3 A$	TIP42	15	-	75	
			TIP42A				
			TIP42B				
			TIP42C				
h_{fe}	Small Signal Current Gain	$V_{CE} = -10 V, I_C = -0.5 A, f = 1kHz$	TIP42	20	-	-	-
			TIP42A				
			TIP42B				
			TIP42C				
f_T	Current Gain-Bandwidth Product	$V_{CE} = -10 V, I_C = -0.5 A$	TIP42	3	-	-	MHz
			TIP42A				
			TIP42B				
			TIP42C				

(*) Pulse Width $\approx 300 \mu s$, 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
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



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

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