

TIP42 SERIES(TIP42/42A/42B/42C)

Medium Power Linear Switching Applications

• Complement to TIP41/41A/41B/41C



1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : TIP42	- 40	V
	: TIP42A	- 60	V
	: TIP42B	- 80	V
	: TIP42C	- 100	V
V _{CEO}	Collector-Emitter Voltage : TIP42	- 40	V
	: TIP42A	- 60	V
	: TIP42B	- 80	V
	: TIP42C	- 100	V
V _{EBO}	Emitter-Base Voltage	- 5	V
I _C	Collector Current (DC)	- 6	Α
I _{CP}	Collector Current (Pulse)	-10	А
I _B	Base Current	-2	А
P _C	Collector Dissipation (T _C =25°C)	65	W
P _C	Collector Dissipation (T _a =25°C)	2	W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics $T_C=25$ °C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V _{CEO} (sus)	* Collector-Emitter Sustaining Voltage				
	: TIP42	$I_{C} = -30 \text{mA}, I_{B} = 0$	-40		V
	: TIP42A		-60		V
	: TIP42B		-80		V
	: TIP42C		-100		V
I _{CEO}	Collector Cut-off Current				
	: TIP42/42A	$V_{CE} = -30V, I_{B} = 0$		-0.7	mA
	: TIP42B/42C	$V_{CE} = -60V, I_{B} = 0$		-0.7	mA
I _{CES}	Collector Cut-off Current				
020	: TIP42	$V_{CE} = -40V, V_{EB} = 0$		-400	μΑ
	: TIP42A	$V_{CE} = -60V, V_{EB} = 0$		-400	μΑ
	: TIP42B	$V_{CE} = -80V, V_{EB} = 0$		-400	μΑ
	: TIP42C	$V_{CE} = -100V, V_{EB} = 0$		-400	μΑ
I _{EBO}	Emitter Cut-off Current	$V_{EB} = -5V, I_{C} = 0$		-1	mA
h _{FE}	* DC Current Gain	$V_{CE} = -4V, I_{C} = -0.3A$	30		
		$V_{CE} = -4V, I_{C} = -3A$	15	75	
V _{CE} (sat)	* Collector-Emitter Saturation Voltage	I _C = -6A, I _B = -600mA		-1.5	V
V _{BE} (sat)	* Base-Emitter Saturation Voltage	$V_{CE} = -4V, I_{C} = -6A$		-2.0	V
f _T	Current Gain Bandwidth Product	$V_{CE} = -10V, I_{C} = -500mA$	3.0		MHz
* Pulse Test: PW≤	300μs, Duty Cycle≤2%	·	•	•	•

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Typical Characteristics

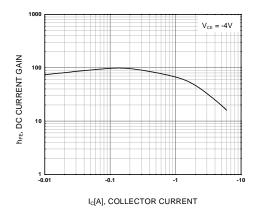


Figure 1. DC current Gain

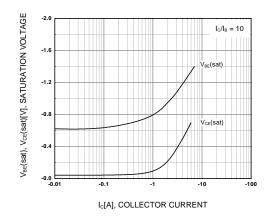


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

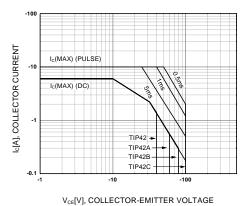


Figure 3. Safe Operating Area

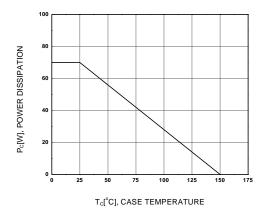
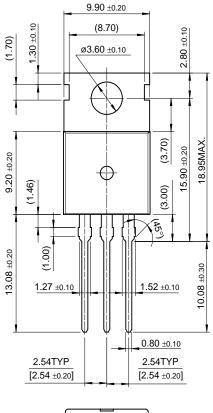


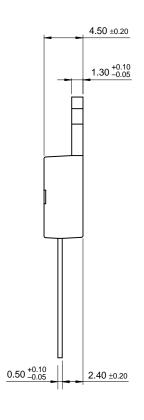
Figure 4. Power derating

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Package Demensions

TO-220





10.00 ±0.20

Dimensions in Millimeters

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