

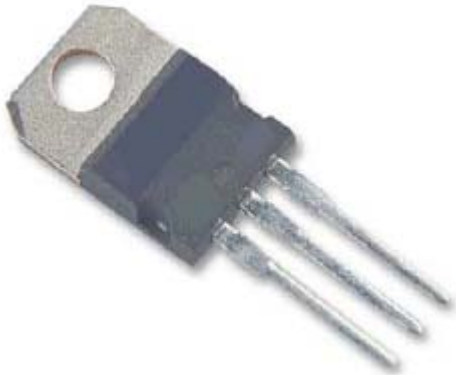
TIP117

Darlington Transistors

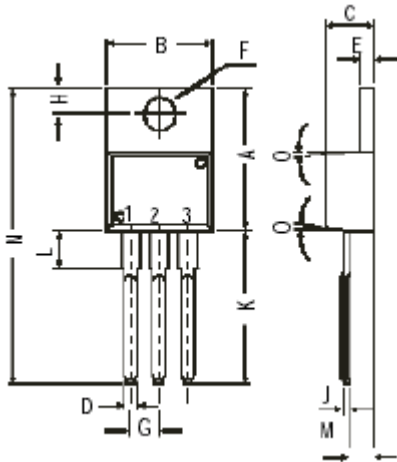


Features:

- PNP Plastic Power Transistors.
- General Purpose Darlington Amplifier and Low Speed Switching Applications.

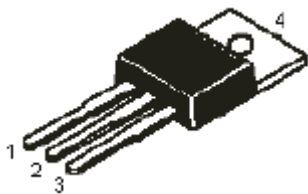


TO-220 Plastic Package



Dimensions	Minimum	Maximum
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D	-	0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J	-	0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N	-	31.24
O	7°	

Dimensions : Millimetres



Pin Configuration:

1. Base
2. Collector
3. Emitter
4. Collector

Absolute Maximum Ratings

Limiting Values	Symbol		TIP117	Unit		
Collector-Base Voltage (Open Emitter)	V_{CBO}	Maximum	100	V		
Collector-Emitter Voltage (Open Base)	V_{CEO}					
Collector Current	I_C				2.0	A
Total Power Dissipation upto $T_C = 25^\circ\text{C}$	P_{tot}				50	W
Junction Temperature	T_j				150	$^\circ\text{C}$
Collector-Emitter Saturation Voltage $I_C = 2\text{A}$, $I_B = 8\text{mA}$	$V_{CE}(\text{Sat})$				2.5	V
DC Current Gain $I_C = 1\text{A}$; $V_{CE} = 4\text{V}$	h_{FE}	Minimum	1000	-		

Ratings (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Limiting Values	Symbol		TIP117	Unit		
Collector-Base Voltage (Open Emitter)	V_{CBO}	Maximum	100	V		
Collector-Emitter Voltage (Open Base)	V_{CEO}					
Emitter-Base Voltage (Open Collector)	V_{EBO}				5.0	
Collector Current	I_C				2.0	A
Collector Current (Peak)	I_{CM}				4.0	
Base Current	I_B				50	mA
Total Power Dissipation upto $T_C = 25^\circ\text{C}$ Total Power Dissipation upto $T_A = 25^\circ\text{C}$	P_{tot}				50 2.0	W
Junction Temperature	T_j				150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-65 to +150			
Thermal Resistance						
From Junction to Case	$R_{th(j-c)}$	-	25	$^\circ\text{C/W}$		
From Junction to Ambient	$R_{th(j-a)}$	-	62.5			

TIP117

Darlington Transistors



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

Limiting Values	Symbol		TIP117	Unit
Collector Cut off Current $I_B = 0$; $V_{CE} = \text{half rated } V_{CEO}$ $I_E = 0$; $V_{CB} = \text{rated } V_{CBO}$	I_{CEO} I_{CBO}	Maximum	2.0 1.0	mA
Emitter Cut off Current $I_C = 0$; $V_{EB} = 5\text{V}$	I_{EBO}		2.0	
Breakdown Voltages $I_C = 30\text{mA}$; $I_B = 0$ $I_C = 1\text{mA}$; $I_E = 0$ $I_E = 1\text{mA}$; $I_C = 0$	$V_{CEO(\text{Sus})}^*$ V_{CBO} V_{EBO}	Minimum	100 100 5.0	V
Saturation Voltage $I_C = 2\text{A}$; $I_B = 8\text{mA}$	$V_{CE(\text{sat})}^*$	Maximum	2.5	
Base Emitter On Voltage $I_C = 2\text{A}$; $V_{CE} = 4\text{V}$	$V_{BE(\text{on})}^*$		2.8	
DC Current Gain $I_C = 1\text{A}$; $V_{CE} = 4\text{V}$ $I_C = 2\text{A}$; $V_{CE} = 4\text{V}$	h_{FE}^*	Minimum	1000 500	-

* Pulse Test: Pulse Duration = 300 μs , Duty Cycle $\leq 2\%$.

Part Number Table

Package	Part Number
TO-220	TIP117



Notes:

International Sales Offices:

	AUSTRALIA - Farnell Tel No: ++61 1300 361 005 Fax No: ++61 1300 361 225		FINLAND - Farnell Tel No: ++ 358 9 560 7780 Fax No: ++ 358 9 345 5411		ITALY - Farnell Tel No: ++ 39 02 93 995 200 Fax No: ++ 39 02 93 995 300		SPAIN - Farnell Tel No: 901 20 20 80 Fax No: 901 20 20 90
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