

**Pin Configuration:**

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

**Feature:**

- PNP Plastic Power Darlington Transistors for Linear and Switching Applications

**Absolute Maximum Ratings:**

Parameters	Symbol	-	TIP107	Unit		
Collector-Base Voltage (Open Emitter)	$V_{CBO}$	Max.	100	V		
Collector Emitter Voltage (Open Base)	$V_{CEO}$					
Collector Current	$I_C$				8	A
Total Power Dissipation upto $T_C = 25^\circ\text{C}$	$P_{tot}$				80	W
Junction Temperature	$T_j$				150	$^\circ\text{C}$
Collector-Emitter Saturation Voltage $I_C = 3\text{A}, I_B = 6\text{mA}$	$V_{CE(sat)}$				2	V
DC Current Gain $I_C = 3\text{A}; V_{CE} = 4\text{V}$	$h_{FE}$	Min. Max.	1 20	-		

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

Collector-Base Voltage (Open Emitter)	$V_{CBO}$	Max.	100	V		
Collector Emitter Voltage (Open Base)	$V_{CEO}$					
Emitter-Base Voltage (Open Collector)	$V_{EBO}$				5	
Collector Current	$I_C$				8	A
Collector Peak Current	$I_{CM}$				15	

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

Parameters	Symbol	-	TIP107	Unit
Base Current	$I_B$	Max.	1	A
Total Power Dissipation upto $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_{tot}$		80	W
Total Power Dissipation upto $T = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$			0.64	
Junction Temperature	$T_j$		2	$W/^\circ\text{C}$
Storage Temperature	$T_{stg}$		0.016	
			150	$^\circ\text{C}$
			-65 to +150	

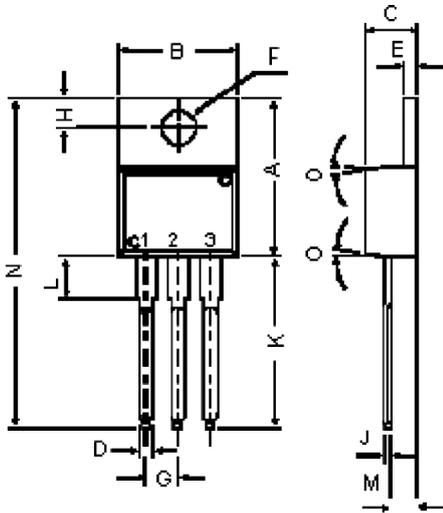
## Thermal Resistance

From Junction to Ambient	$R_{th(j-a)}$	-	62.5	$^\circ\text{C/W}$
From Junction to Case	$R_{th(j-c)}$	-	1.56	

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

Collector Cut off Current $I_B = 0; V_{CE} = 50\text{V}$ $I_E = 0; V_{CB} = 100\text{V}$	$I_{CEO}$ $I_{CBO}$	Max.	50 50	$\mu\text{A}$
Emitter Cut off Current $I_C = 0; V_{EB} = 5\text{V}$	$I_{EBO}$		8	mA
Breakdown Voltages $I_C = 30\text{mA}; I_B = 0$ $I_C = 1\text{mA}; I_E = 0$ $I_E = 1\text{mA}; I_C = 0$	$V_{CEO(sus)}^*$ $V_{CBO}$ $V_{EBO}$	Min.	100 100 5	V
Saturation Voltages $I_C = 3\text{A}; I_B = 6\text{mA}$ $I_C = 8\text{A}; I_B = 80\text{mA}$	$V_{CE(sat)}^*$	Max.	2 2.5	
Base-Emitter on Voltage $I_C = 8\text{A}; V_{CE} = 4\text{V}$	$V_{BE(on)}^*$		2.8	
DC Current Gain $I_C = 3\text{A}; V_{CE} = 4\text{V}$ $I_C = 8\text{A}; V_{CE} = 4\text{V}$	$h_{FE}^*$	Min. Max. Min.	1 20 200	-
Small Signal Current Gain $I_C = 3\text{A}; V_{CE} = 4\text{V}; f = 1\text{MHz}$	$ h_{fe} $	Min.	4	-
Output Capacitance $I_E = 0; V_{CB} = 10\text{V}; f = 0.1\text{MHz}$	$C_O$	Max.	300	pF
Forward Voltage of Commutation Diode $I_F = -I_C = 10\text{A}; I_B = 0$	$V_F^*$	Min.	2.8	V

\* Pulsed : Pulse Duration = 300 $\mu\text{s}$ ; Duty Cycle  $\leq 2\%$ .



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Dimensions	Minimum	Maximum
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D	-	0.9
E	1.15	1.4
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J	-	0.56
K	12.7	14.73
L	2.8	4.07
M	2.03	2.92
N	-	31.24
O	7°	

Dimensions : Millimetres

**Part Number Table**

Description	Part Number
Darlington Transistor, TO-220	TIP107

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