

## NPN TIP100-101-102

### SILICON DARLINGTON POWER TRANSISTORS

NPN epitaxial-base transistors in a monolithic Darlington circuit and housed in a TO-220 envelope. They are designed for general purpose amplifier and low-speed switching applications.

PNP complements are TIP105-106-107

Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
$V_{CBO}$	Collector-Base Voltage	TIP100	60	V	
		TIP101	80		
		TIP102	100		
$V_{CEO}$	Collector-Emitter Voltage	TIP100	60	V	
		TIP101	80		
		TIP102	100		
$V_{EBO}$	Emitter-Base Voltage	TIP100	5	V	
		TIP101			
		TIP102			
$I_C$	Collector Current	TIP100	8	A	
		TIP101			
		TIP102			
$I_{CM}$	Collector Peak Current	TIP100	15	A	
		TIP101			
		TIP102			
$I_B$	Base Current	TIP100	1	A	
		TIP101			
		TIP102			
$P_T$	Power Dissipation	@ $T_c < 25^\circ$	TIP100	80	Watts
			TIP101		
			TIP102		
		@ $T_a < 25^\circ$	TIP100	2	
			TIP101		
			TIP102		
$T_J$	Junction Temperature	TIP100	150	$^\circ\text{C}$	
		TIP101			
		TIP102			
$T_s$	Storage Temperature range	TIP100	-65 to +150	$^\circ\text{C}$	
		TIP101			
		TIP102			

## NPN TIP100-101-102

### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJ-case}$	From junction-case	1.56	°C/W
$R_{thJ-amb}$	From junction-ambient	62.5	°C/W

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

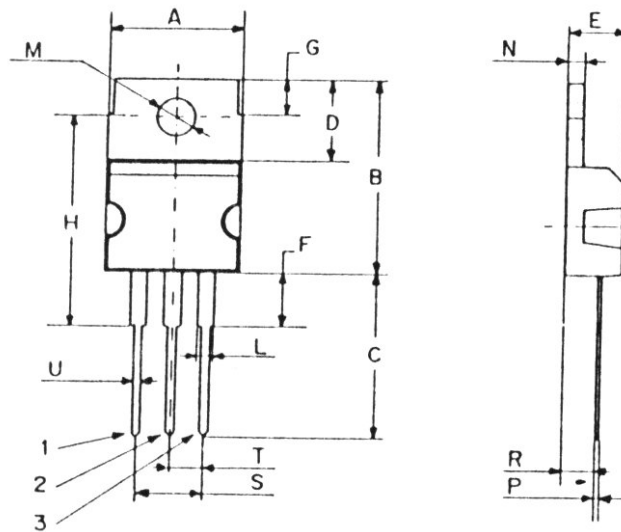
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$I_{CBO}$	Collector Cutoff Current	$I_E = 0, V_{CB} = V_{CB0max}$	TIP100	-	-	50	$\mu A$
			TIP101				
			TIP102				
$I_{CEO}$	Collector Cutoff Current	$I_E = 0, V_{CE} = 1/2 V_{CE0max}$	TIP100	-	-	50	$\mu A$
			TIP101				
			TIP102				
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 5 V, I_C = 0$	TIP100	-	-	8	mA
			TIP101				
			TIP102				
$V_{CEO}$	Collector-Emitter Breakdown Voltage (*)	$I_C = 30 mA, I_B = 0$	TIP100	60	-	-	V
			TIP101	80	-	-	
			TIP102	100	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 3 A, I_B = 6 mA$	TIP100	-	-	2	V
			TIP101				
			TIP102				
		$I_C = 8 A, I_B = 80 mA$	TIP100	-	-	2.5	
			TIP101				
			TIP102				
$V_{BE(on)}$	Base-Emitter Voltage (*)	$I_C = 8 A, V_{CE} = 4 V$	TIP100	-	-	2.8	V
			TIP101				
			TIP102				
$h_{FE}$	DC Current Gain (*)	$V_{CE} = 4 V, I_C = 3 A$	TIP100	1000	-	20k	-
			TIP101				
			TIP102				
		$V_{CE} = 4 V, I_C = 8 A$	TIP100	200	-	-	
			TIP101				
			TIP102				
$C_{OB}$	Output Capacitance	$I_E = 0, V_{CB} = 10 V$ $f = 1MHz$	TIP100	-	-	200	pF
			TIP101				
			TIP102				

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

## NPN TIP100-101-102

### 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

September 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.