New Jersey Semi-Conductor Products, Inc.

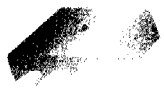
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TIP145T/146T/147T

Monolithic Construction With Built In Base-Emitter Shunt Resistors

- High DC Current Gain : h_{FE} = 1000@ V_{CE} = - 4V, I_C = - 5A (Min.)
- Industrial Use
- Complement to TIP140T/141T/142T



TO-220

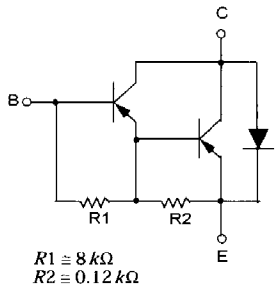
1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Darlington Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	: TIP145T	- 60	V
		: TIP146T	- 80	V
		: TIP147T	- 100	V
V_{CEO}	Collector-Emitter Voltage	: TIP145T	- 60	V
		: TIP146T	- 80	V
		: TIP147T	- 100	V
V_{EBO}	Emitter-Base Voltage		- 5	V
I_C	Collector Current (DC)		- 10	A
I_{CP}	Collector Current (Pulse)		- 15	A
I_B	Base Current (DC)		- 0.5	A
P_C	Collector Dissipation (T_C=25°C)		80	W
T_J	Junction Temperature		150	°C
T_{STG}	Storage Temperature		- 65 ~ 150	°C

Equivalent Circuit



$R1 \cong 8\,k\Omega$
$R2 \cong 0.12\,k\Omega$

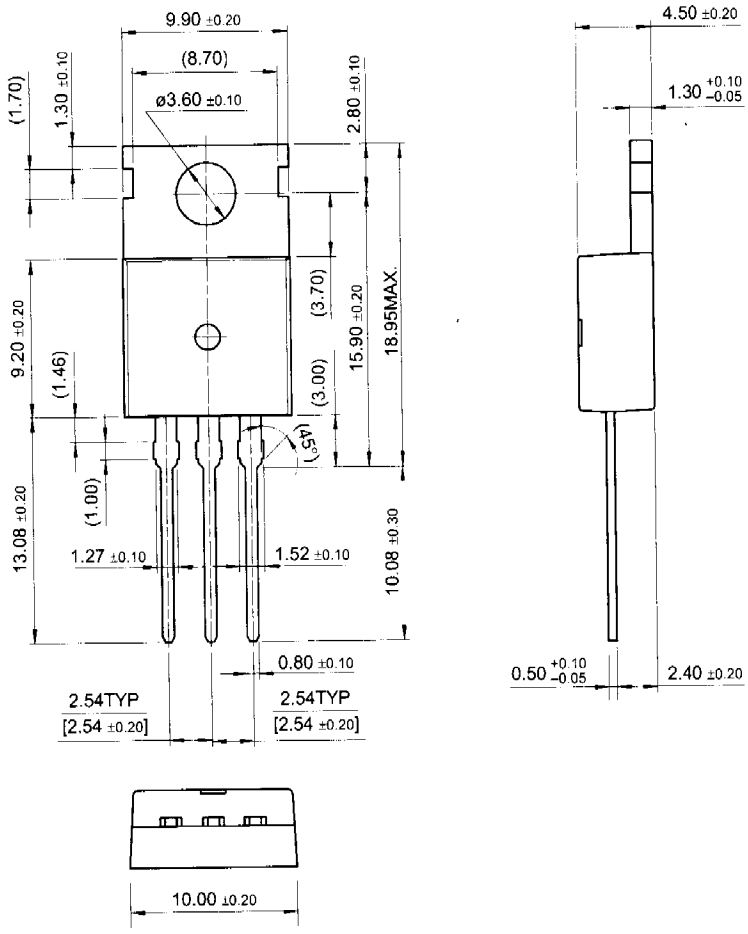
Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{CEO}(sus)$	Collector-Emitter Sustaining Voltage					
	: TIP145T	I_C = - 30mA, I_B = 0	- 60			V
	: TIP146T		- 80			V
	: TIP147T		- 100			V
I_{CEO}	Collector Cut-off Current					
	: TIP145T	V_{CE} = - 30V, I_B = 0			- 2	mA
	: TIP146T	V_{CE} = - 40V, I_B = 0			- 2	mA
	: TIP147T	V_{CE} = - 50V, I_B = 0			- 2	mA
I_{CBO}	Collector Cut-off Current					
	: TIP145T	V_{CB} = - 60V, I_E = 0			- 1	mA
	: TIP146T	V_{CB} = - 80V, I_E = 0			- 1	mA
	: TIP147T	V_{CB} = - 100V, I_E = 0			- 1	mA
I_{EBO}	Emitter Cut-off Current	V_{BE} = - 5V, I_C = 0			- 2	mA
h_{FE}	DC Current Gain	V_{CE} = - 4V, I_C = - 5A	1000			
		V_{CE} = - 4V, I_C = - 10A	500			
$V_{CE}(sat)$	Collector-Emitter Saturation Voltage	I_C = - 5A, I_B = - 10mA			- 2	V
		I_C = - 10A, I_B = - 40mA			- 3	V
$V_{BE}(sat)$	Base-Emitter Saturation Voltage	I_C = - 10A, I_B = - 40mA			- 3.5	V
$V_{BE}(on)$	Base-Emitter On Voltage	V_{CE} = - 4V, I_C = - 10A			- 3	V
t_D	Delay Time	V_{CC} = - 30V, I_C = - 5A		0.15		µs
t_R	Rise Time	I_{B1} = -20mA, I_{B2} = 20mA		0.55		µs
t_{STG}	Storage Time	R_L = 6Ω		2.5		µs
t_F	Fall Time			2.5		µs

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

TO-220


9.90 ±0.20
(8.70)
ø3.60 ±0.10
(1.70)
1.30 ±0.10
2.80 ±0.10
(3.70)
15.90 ±0.20
18.95MAX.
9.20 ±0.20
(1.46)
(3.00)
(45°)
(1.00)
13.08 ±0.20
1.27 ±0.10
1.52 ±0.10
10.08 ±0.30
0.80 ±0.10
2.54TYP
[2.54 ±0.20]
2.54TYP
[2.54 ±0.20]
10.00 ±0.20
4.50 ±0.20
1.30 +0.10 −0.05
0.50 +0.10 −0.05
2.40 ±0.20