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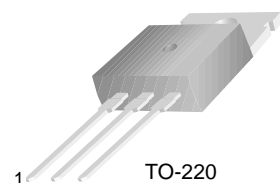


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Monolithic Construction With Built In Base-Emitter Shunt Resistors

- High DC Current Gain : $h_{FE}=1000$ @ $V_{CE}=4V$, $I_C=3A$ (Min.)
- Collector-Emitter Sustaining Voltage
- Low Collector-Emitter Saturation Voltage
- Industrial Use
- Complementary to TIP105/106/107

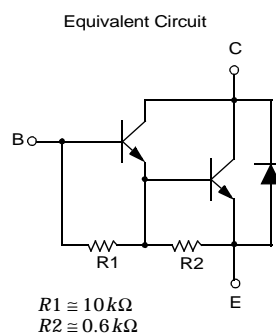


1.Base 2.Collector 3.Emitter

NPN Epitaxial Silicon Darlington Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : TIP100	60	V
	: TIP101	80	V
	: TIP102	100	V
V_{CEO}	Collector-Emitter Voltage : TIP100	60	V
	: TIP101	80	V
	: TIP102	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	8	A
I_{CP}	Collector Current (Pulse)	15	A
I_B	Base Current (DC)	1	A
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	2	W
	Collector Dissipation ($T_C=25^\circ\text{C}$)	80	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$



Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage	$I_C = 30\text{mA}$, $I_B = 0$	60 80 100		V
	: TIP100				V
	: TIP101				V
	: TIP102				V
I_{CEO}	Collector Cut-off Current	$V_{CE} = 30V$, $I_B = 0$ $V_{CE} = 40V$, $I_B = 0$ $V_{CE} = 50V$, $I_B = 0$		50 50 50	μA
	: TIP100				μA
	: TIP101				μA
	: TIP102				μA
I_{CBO}	Collector Cut-off Current	$V_{CE} = 60V$, $I_E = 0$ $V_{CE} = 80V$, $I_E = 0$ $V_{CE} = 100V$, $I_E = 0$		50 50 50	μA
	: TIP100				μA
	: TIP101				μA
	: TIP102				μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5V$, $I_C = 0$		2	mA
h_{FE}	DC Current Gain	$V_{CE} = 4V$, $I_C = 3A$	1000	20000	
		$V_{CE} = 4V$, $I_C = 8A$	200		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 3A$, $I_B = 6\text{mA}$		2	V
		$I_C = 8A$, $I_B = 80\text{mA}$		2.5	V
$V_{BE(on)}$	Base-Emitter ON Voltage	$V_{CE} = 4V$, $I_C = 8A$		2.8	V
C_{ob}	Output Capacitance	$V_{CB} = 10V$, $I_E = 0$, $f = 0.1\text{MHz}$		200	pF

Typical Characteristics

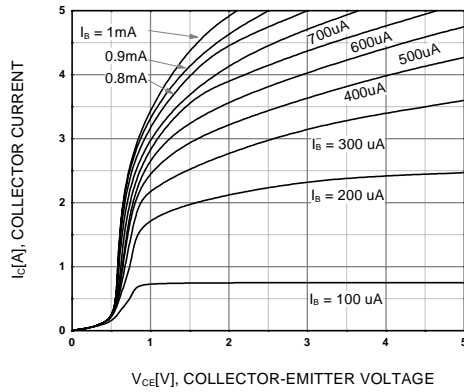


Figure 1. Static Characteristic

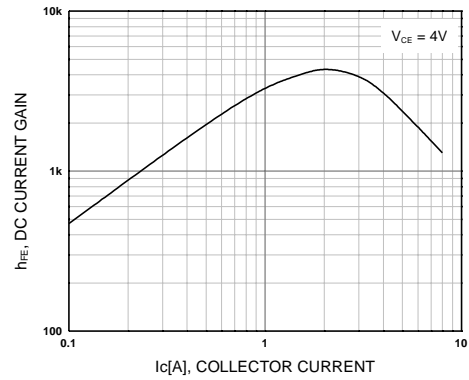


Figure 2. DC current Gain

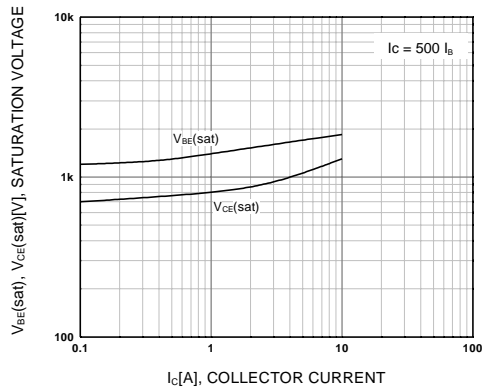


Figure 3. Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

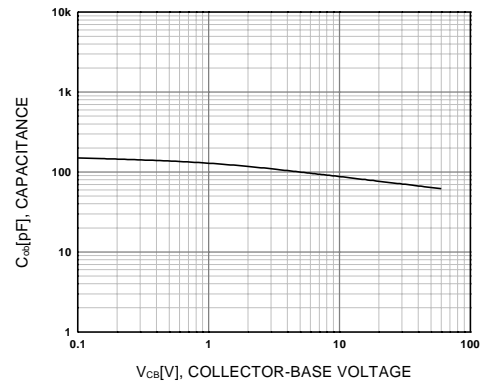


Figure 4. Collector Output Capacitance

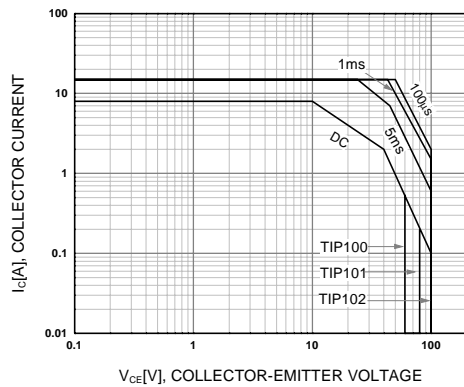


Figure 5. Safe Operating Area

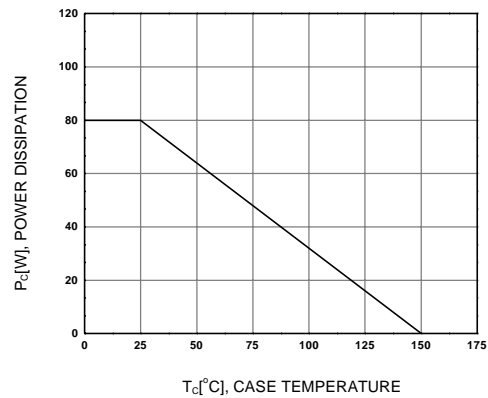
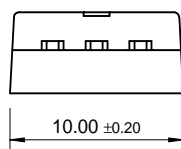
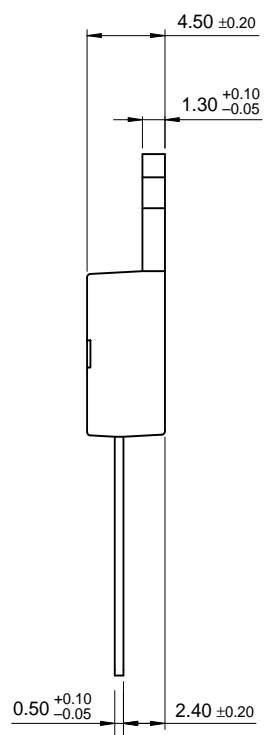


Figure 6. Power Derating

Technical drawing of a 2.54TYP connector. The drawing shows a side view of the component with various dimensions in millimeters. The overall width is 9.90 ±0.20, with a central hole diameter of Ø3.60 ±0.10. The total height is 18.95 MAX. The drawing includes dimensions for the top section (1.70, 1.30 ±0.10, 2.80 ±0.10), the main body (9.20 ±0.20, 1.46, 3.00, 3.70, 15.90 ±0.20), and the bottom section (13.08 ±0.20, 1.00, 1.27 ±0.10, 1.52 ±0.10, 10.08 ±0.30). The bottom section features three pins with a 45° chamfer and a width of 0.80 ±0.10. The drawing is labeled 2.54TYP at the bottom.



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