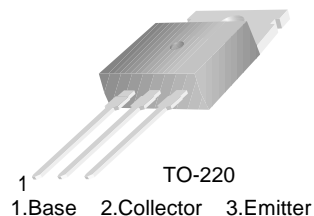


# FJP9100

## High Voltage Power Darlington Transistor

- Built-in Resistor at Base-Emitter :  $R_1(\text{Typ.})=2000\Omega$
- Built-in Resistor at Base :  $R_B(\text{Typ.})=700 \pm 100\Omega$

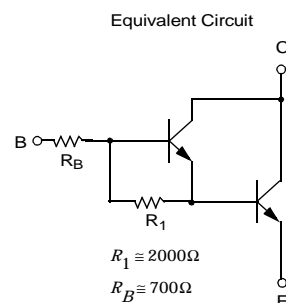


## NPN Silicon Darlington Transistor

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	600	V
$V_{CEO}$	Collector-Emitter Voltage	275	V
$V_{EBO}$	Emitter-Base Voltage	10	V
$I_C$	Collector Current (DC)	4	A
$I_{CP}$	*Collector Current (Pulse)	6	A
$I_B$	Base Current (DC)	0.5	A
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	40	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

\* Pulse Test: PW=300 $\mu\text{s}$ , duty Cycle=2% Pulsed



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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 500\mu\text{A}, I_E = 0$	600			V
$BV_{CER}$	Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}, R_{BE} = 330\Omega$	600			V
$BV_{CEO(\text{sus})}$	Collector-Emitter Sustaining Voltage	$I_C = 1.5\text{A}, I_B = 50\text{mA}, L=25\text{mH}$	275			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 500\mu\text{A}, I_C = 0$	10			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = 600\text{V}, I_E = 0$			0.1	mA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 10\text{V}, I_C = 0$			0.1	mA
$h_{FE}$	DC Current Gain	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}$ $V_{CE} = 5\text{V}, I_C = 3\text{A}$	1000 1000		5000	
$V_{CE(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 5\text{mA}$			1.5	V
$V_{BE(\text{sat})}$	Base-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 5\text{mA}$			6.0	V
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0, f=1\text{MHz}$		110		pF

# Typical Characteristics

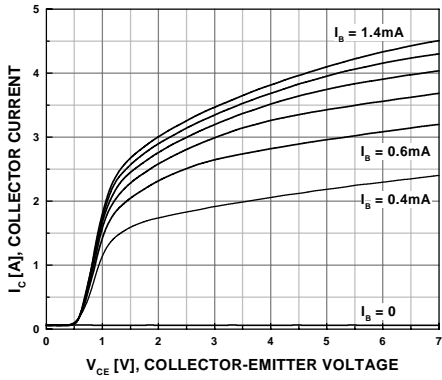


Figure 1. Static Characteristic

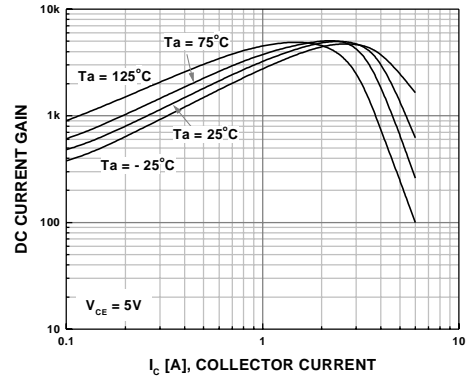


Figure 2. DC current Gain

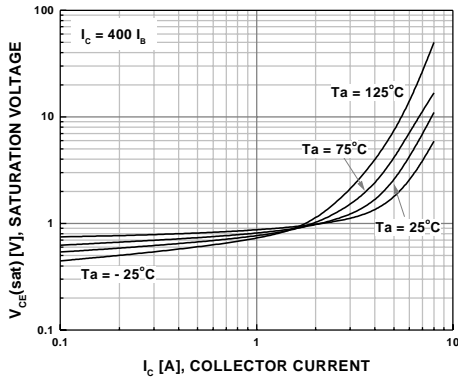


Figure 3. Collector-Emitter Saturation Voltage

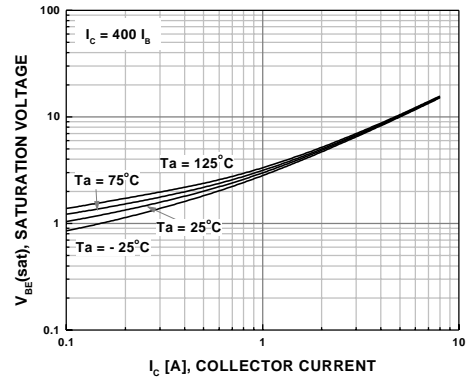


Figure 4. Base-Emitter Saturation Voltage

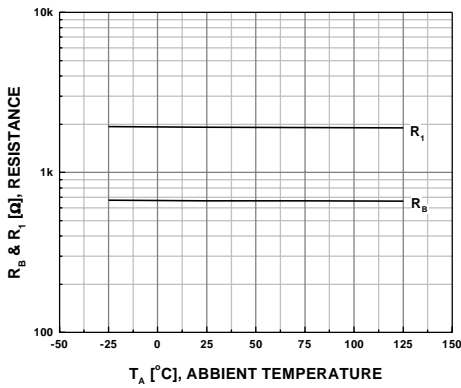


Figure 5.  $R_B$  &  $R_1$  vs. Ambient Temperature

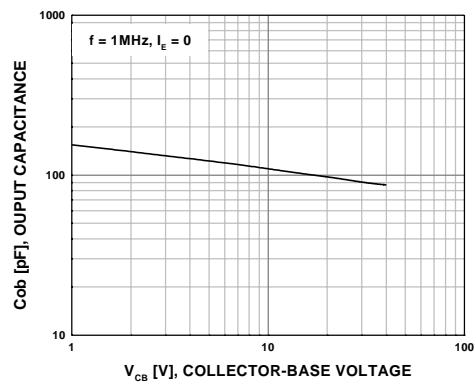


Figure 6. Output Capacitance

### Typical Characteristics (Continued)

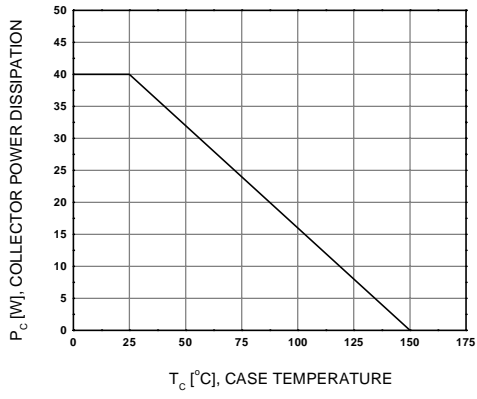
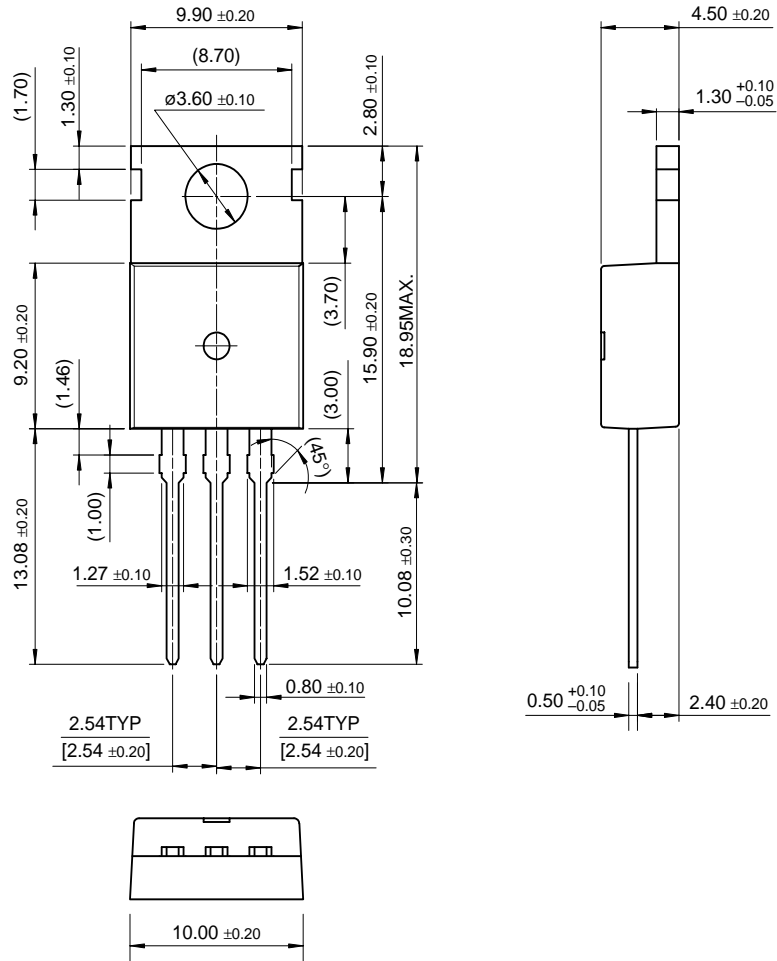


Figure 7. Power Derating

# Package Dimensions

## TO-220



Dimensions in Millimeters

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