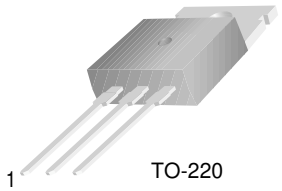
FAIRCHILD
SEMICONDUCTOR®

FJP9100

High Voltage Power Darlington Transistor

- Built-in Resistor at Base-Emitter : R_1(Typ.)=2000Ω
- Built-in Resistor at Base : R_B(Typ.)=700 ± 100Ω



TO-220
1.Base 2.Collector 3.Emitter

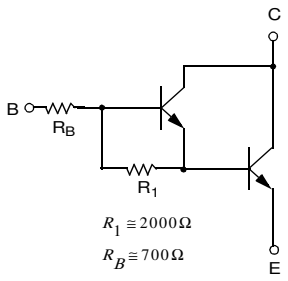
NPN Silicon Darlington Transistor

Absolute Maximum Ratings T_C=25°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°C)	40	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

* Pulse Test: PW=300μs, duty Cycle=2% Pulsed

Equivalent Circuit



Electrical Characteristics T_C=25°C unless otherwise noted

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

Typical Characteristics

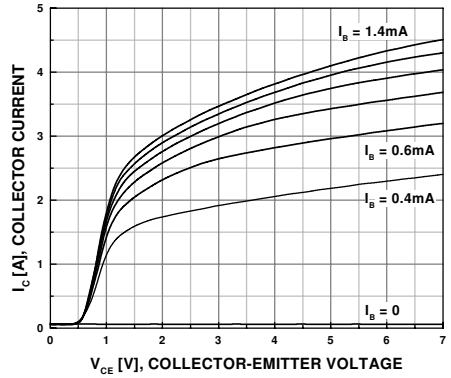


Figure 1. Static Characterstic

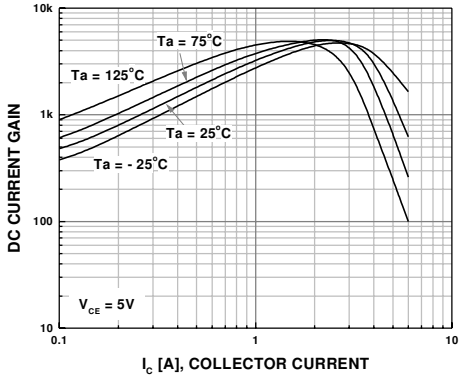


Figure 2. DC current Gain

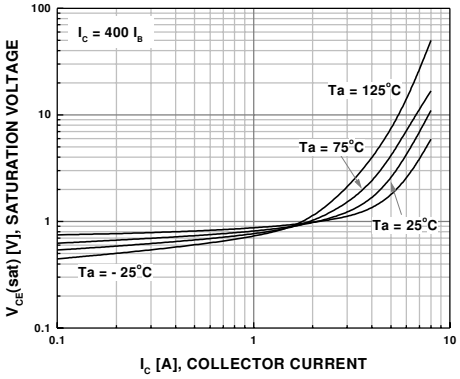


Figure 3. Collector-Emitter Saturation Voltage

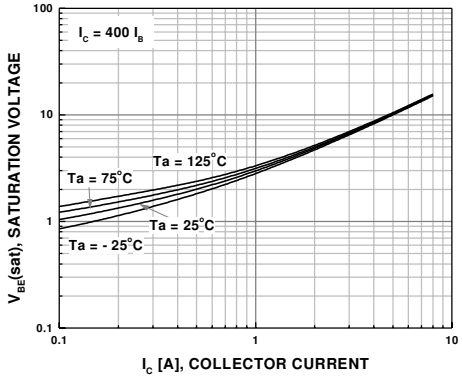


Figure 4. Base-Emitter Saturation Voltage

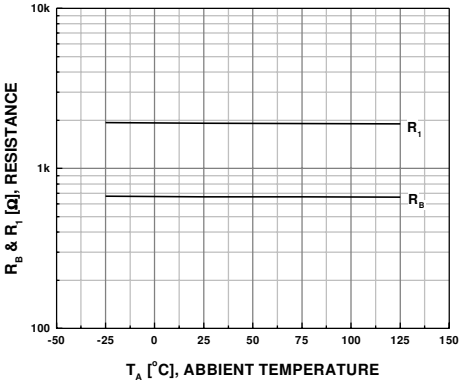


Figure 5. R_B & R_1 vs. Ambient Temperature

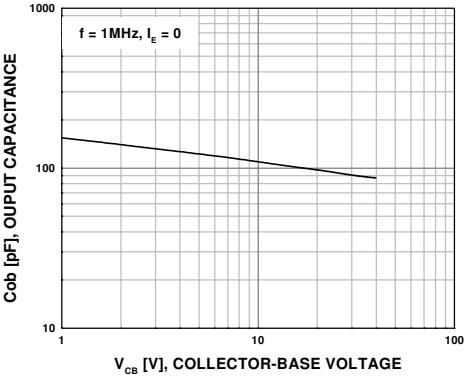


Figure 6. Output Capacitance

Typical Characteristics (Continued)

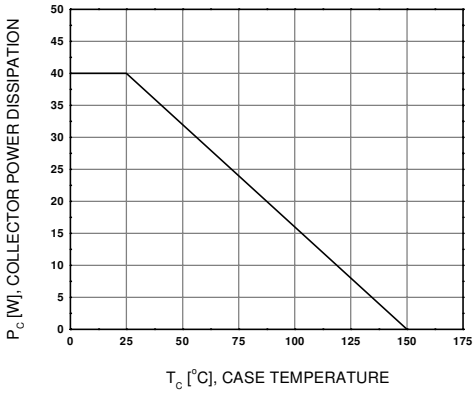
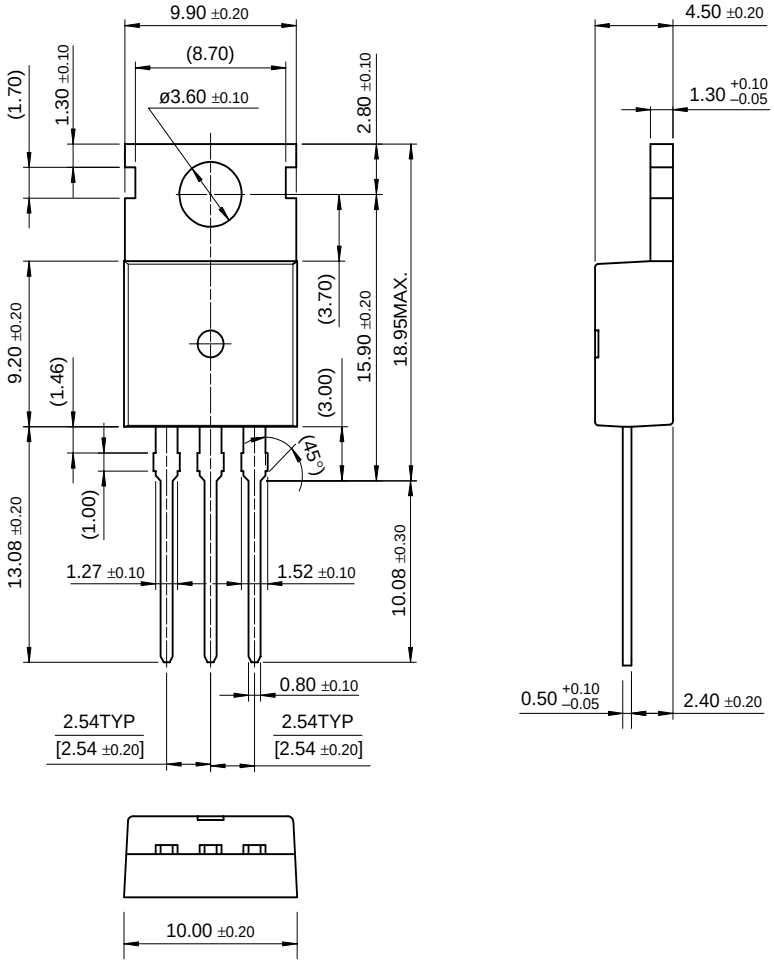


Figure 7. Power Derating

Package Dimensions

TO-220



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic®
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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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