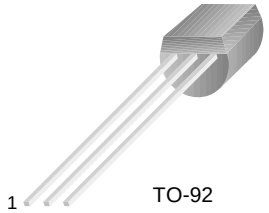
FAIRCHILD
SEMICONDUCTOR®

FJN13003

High Voltage Switch Mode Application

- High Speed Switching
- Suitable for Electronic Ballast up to 21W



TO-92

1. Emitter 2. Collector 3.Base

NPN Silicon Transistor Planar Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current (DC)	1.5	A
I_{CP}	*Collector Current (Pulse)	3	A
I_B	Base Current (DC)	0.75	A
I_{BP}	*Base Current (Pulse)	1.5	A
P_C	Collector Power Dissipation(T_a=25°C)	1.1	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

* Pulse Test: Pulse Width=5ms, Duty Cycle ≤ 10%

Electrical Characteristics T_a=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	700			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C=5mA, I_B=0	400			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=500μA, I_C=0	9			V
I_{EBO}	Emitter Cut-off Current	V_{EB}=9V, I_C=0			10	μA
h_{FE}	DC Current Gain	V_{CE}=2V, I_C=0.5A	9		21	
		V_{CE}=2V, I_C=1.0A	5			
V_{CE} (sat)	Collector-Emitter Saturation Voltage	I_C=0.5A, I_B=0.1A			0.5	V
		I_C=1.0A, I_B=0.25A			1.0	V
		I_C=1.5A, I_B=0.5A			3.0	V
V_{BE} (sat)	Base-Emitter Saturation Voltage	I_C=0.5A, I_B=0.1A			1.0	V
		I_C=1.0A, I_B=0.25A			1.2	V
f_T	Current Gain Bandwidth Product	V_{CE}=10V, I_C=0.1A	4			MHz
t_{ON}	Turn ON Time	V_{CC}=125V, I_C=1A, I_{B1}=0.2A, I_{B2}=-0.2A, R_L = 125Ω			1.1	μs
t_{STG}	Storage Time				4.0	μs
t_F	Fall Time				0.7	μs

Typical Characteristics (Continued)

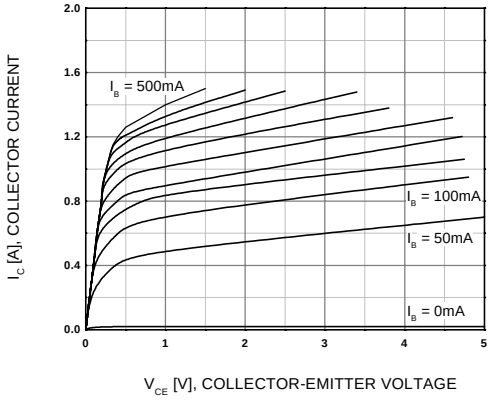


Figure 1. Static Characteristic

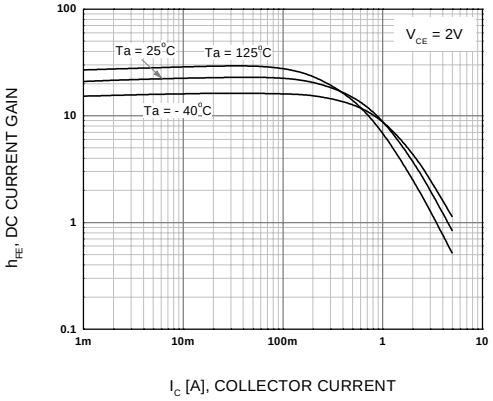


Figure 2. DC current Gain

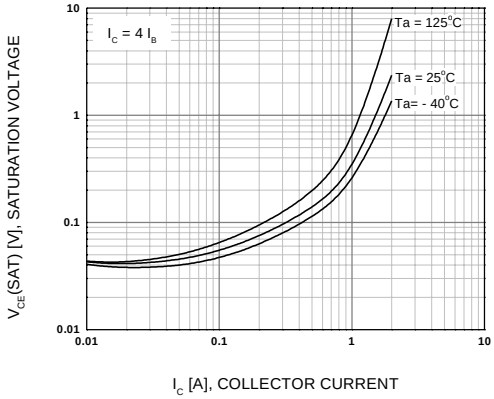


Figure 3. Collector-Emitter Saturation Voltage

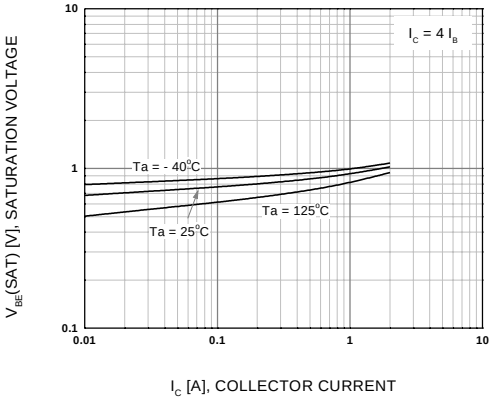


Figure 4. Base-Emitter Saturation Voltage

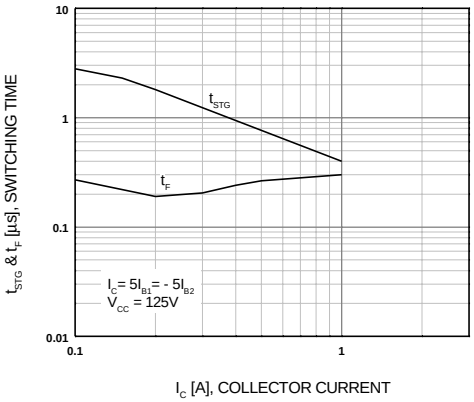


Figure 5. Resistive Load Switching Time

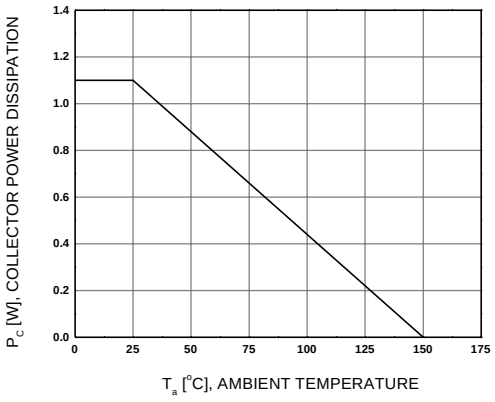


Figure 6. Power Derating

Typical Characteristics

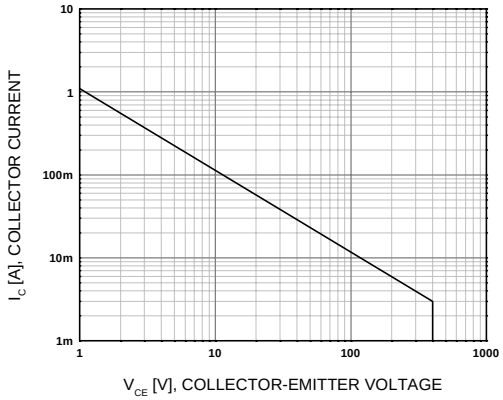


Figure 7. Forward Bias Safe Operating Area

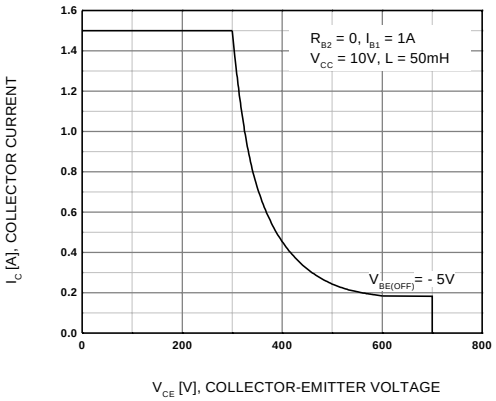
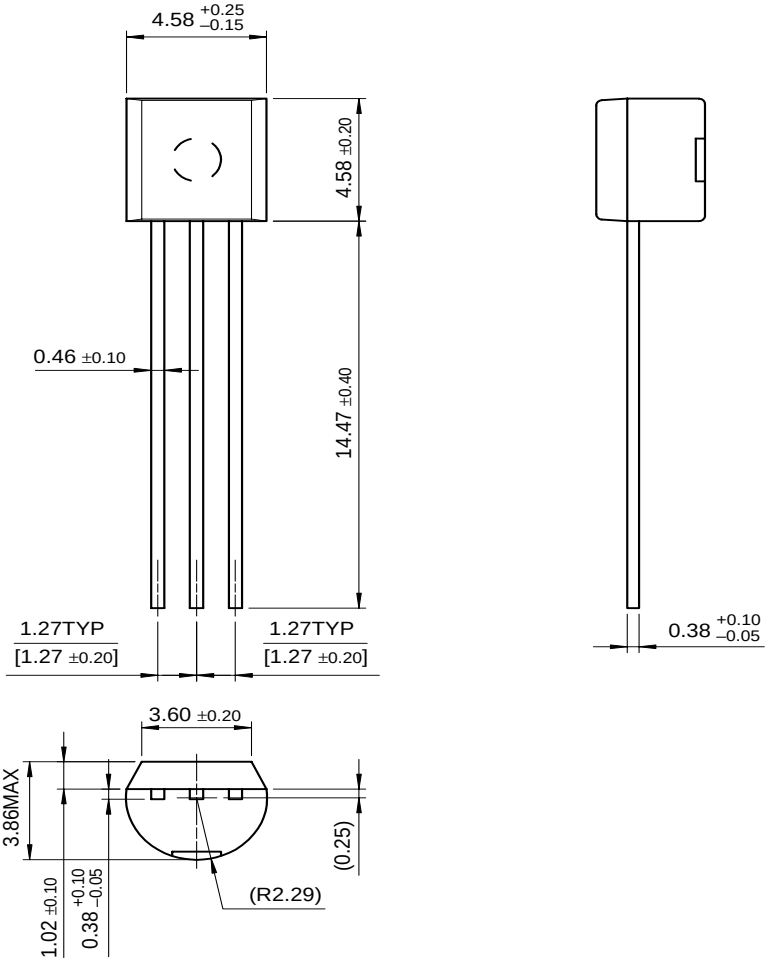


Figure 8. Reverse Bias Safe Operating Area

Package Demensions

TO-92



Dimensions in Millimeters

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EcoSPARK™	ISOPLANAR™	QS™	TruTranslation™
E^2CMOS™	LittleFET™	QT Optoelectronics™	TinyLogic™
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