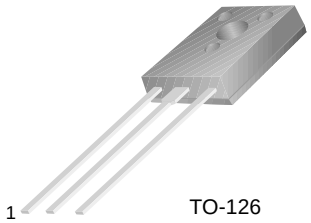
FAIRCHILD SEMICONDUCTOR™

KSD1691

Feature

- Low Collector-Emtter Saturation Voltage & Large Collector Current
- High Power Dissipation: P_C = 1.3W (T_a=25°C)
- Complementary to KSB1151



TO-126

1. Emitter 2.Collector 3.Base

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	5	A
I_{CP}	*Collector Current (Pulse)	8	A
I_B	Base Current (DC)	1	A
P_C	Collector Dissipation (T_a=25°C)	1.3	W
P_C	Collector Dissipation (T_C=25°C)	20	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

* PW≤10ms, duty Cycle≤50%

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	V_{CB} = 50V, I_E = 0			10	µA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 7V, I_C = 0			10	µA
h_{FE1} h_{FE2} h_{FE3}	*DC Current Gain	V_{CE} = 1V, I_C = 0.1A V_{CE} = 1V, I_C = 2A V_{CE} = 1V, I_C = 5A	60 100 50		400	
V_{CE}(sat)	*Collector-Emitter Saturation Voltage	I_C = 2A, I_B = 0.2A		0.1	0.3	V
V_{BE}(sat)	*Base-Emitter Saturation Voltage	I_C = 2A, I_B = 0.2A		0.9	1.2	V
t_{ON}	Turn ON Time	V_{CC} = 10V, I_C = 2A I_{B1} = - I_{B2} = 0.2A R_L = 5Ω		0.2	1	µs
t_{STG}	Storage Time			1.1	2.5	µs
t_F	Fall Time			0.2	1	µs

* Pulse test: PW≤50µs, duty Cycle≤2% Pulsed

h_{FE} Classificntion

Classification	O	Y	G
$h_{FE\,2}$	100 ~ 200	160 ~ 320	200 ~ 400

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Typical Characteristics

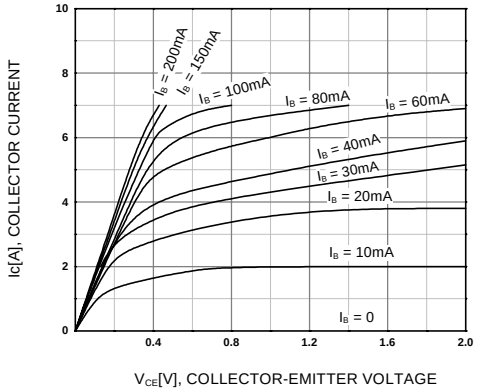


Figure 1. Static Characteristic

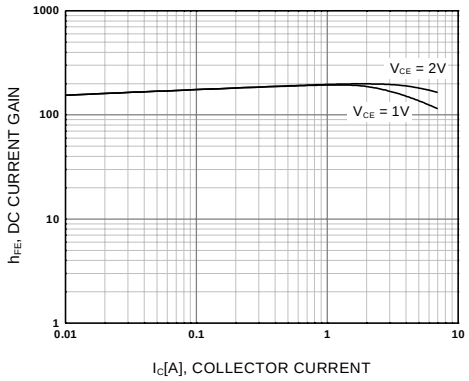


Figure 2. DC current Gain

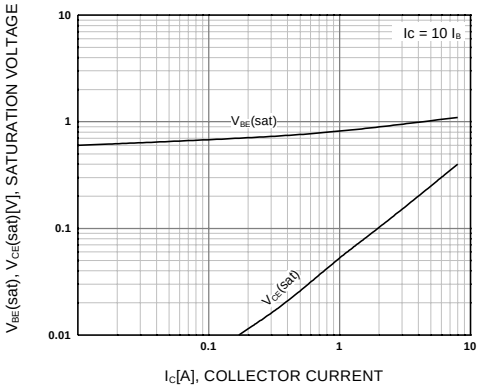


Figure 3. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

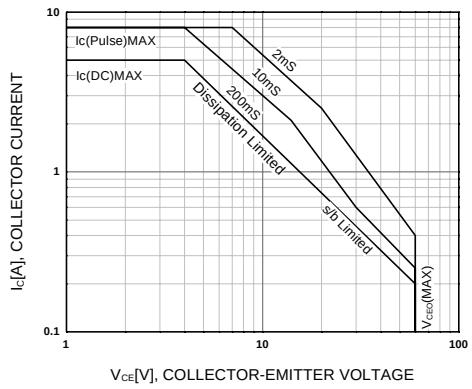


Figure 4. Forward Bias Safe Operating Area

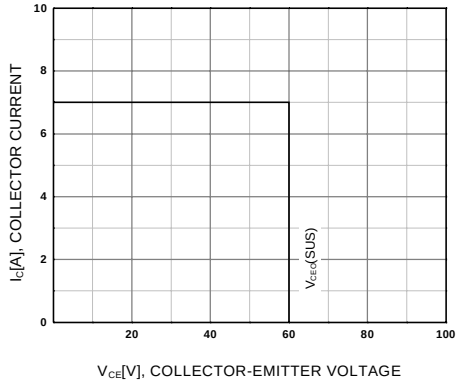


Figure 5. Reverse Bias Safe Operating Area

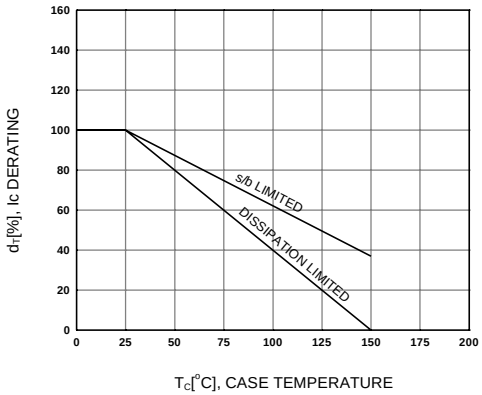


Figure 6. Derating Curve of Safe Operating Areas

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Typical Characteristics (Continued)

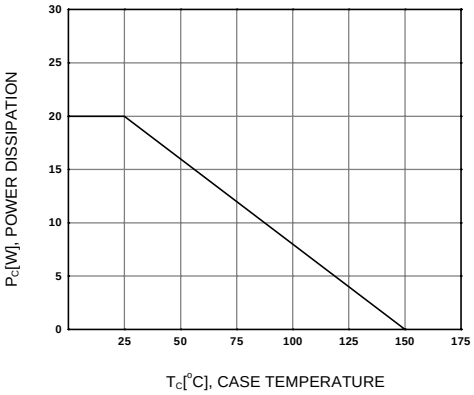
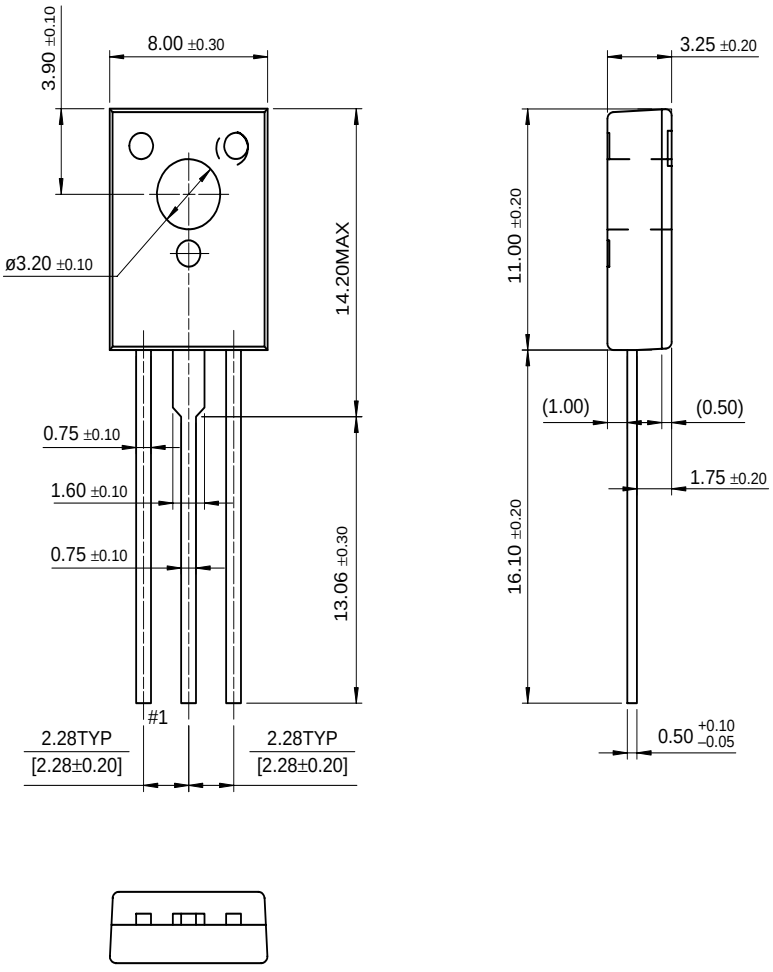


Figure 7. Power Derating

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Package Demensions

TO-126



Dimensions in Millimeters

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

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