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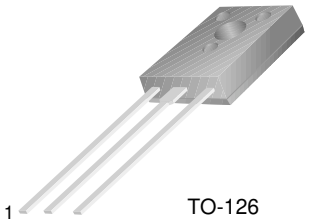
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD
SEMICONDUCTOR TM

KSD1692

Feature

- High Dc Durrent Gain
- Low Collector Saturation Voltage
- Built-in a Damper Diode at E-C
- High Power Dissipation : P_C = 1.3W (Ta=25°C)



TO-126

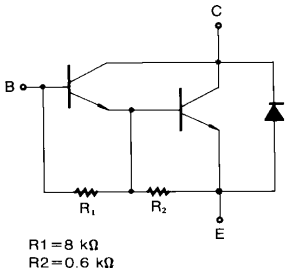
1. Emitter 2.Collector 3.Base

NPN Silicon Darlington Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Sym-bol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current (DC)	3	A
I_{CP}	*Collector Current (Pulse)	5	A
P_C	Collector Dissipation (T_a=25°C)	1.3	A
P_C	Collector Dissipation (T_C=25°C)	15	W
T_J	Junction Temperature	150	W
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} = 100V, I_E = 0			10	μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0			2	mA
h_{FE1} h_{FE2}	*DC Current Gain	V_{CE} = 2V, I_C = 1.5A V_{CE} = 2V, I_C = 3A	2K 1K		20K	
V_{CE}(sat)	*Collector-Emitter Saturation Voltage	I_C = 1.5A, I_B = 1.5mA		0.9	1.2	V
V_{BE}(sat)	*Base-Emitter Saturation Voltage	I_C = 1.5A, I_B = 1.5mA		1.5	2	V
t_{ON}	Turn ON Time	V_{CC} = 40V, I_C = 1.5A I_{B1} = - I_{B2} = 1.5mA R_L = 27Ω		0.5		μs
t_{STG}	Storage Time			2		μs
t_F	Fall Time			1		μs

* Pulse test: PW≤350μs, duty Cycle≤2% Pulsed

h_{FE} Classificntion

Classification	O	Y	G
h_{FE1}	2000 ~ 5000	4000 ~ 12000	6000 ~ 20000

Typical Characteristics

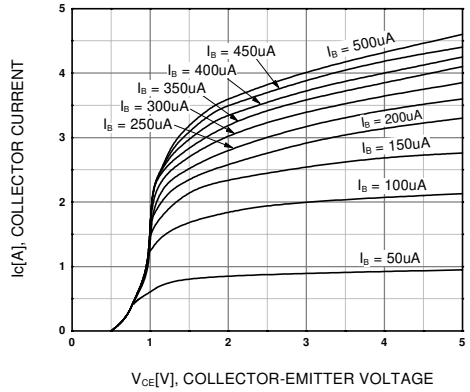


Figure 1. Static Characteristic

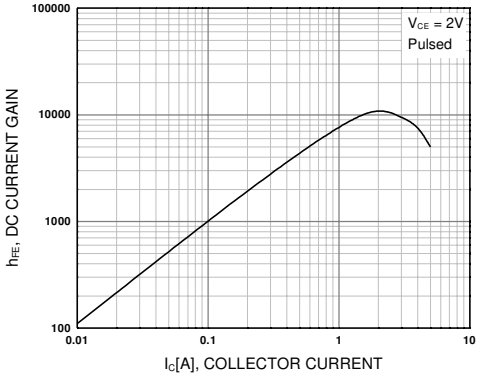


Figure 2. DC current Gain

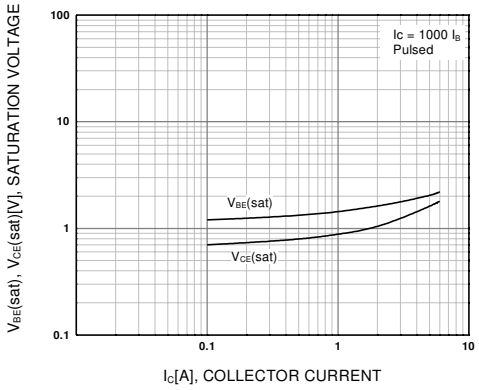


Figure 3. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

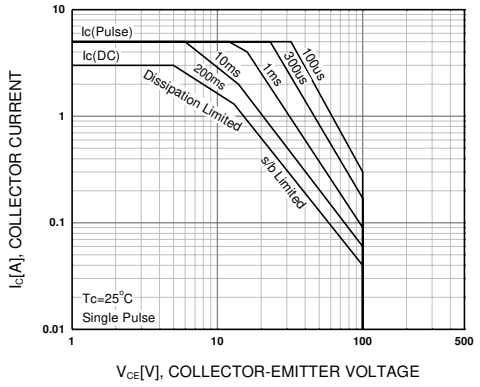


Figure 4. Forward Bias Safe Operating Areas

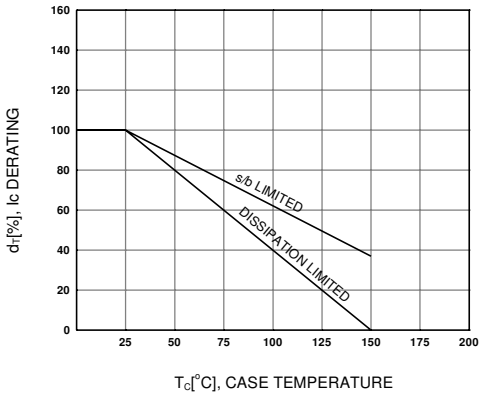


Figure 5. Derating Curve of Safe Operating Areas

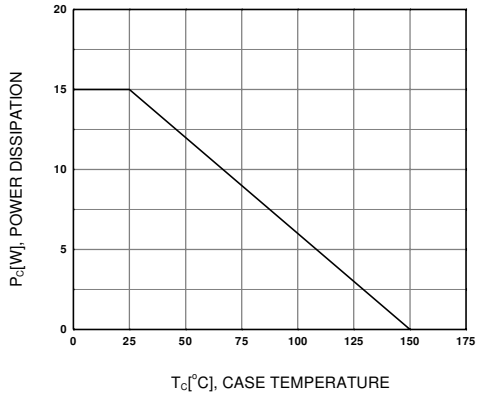


Figure 6. Power Derating

Package Demensions

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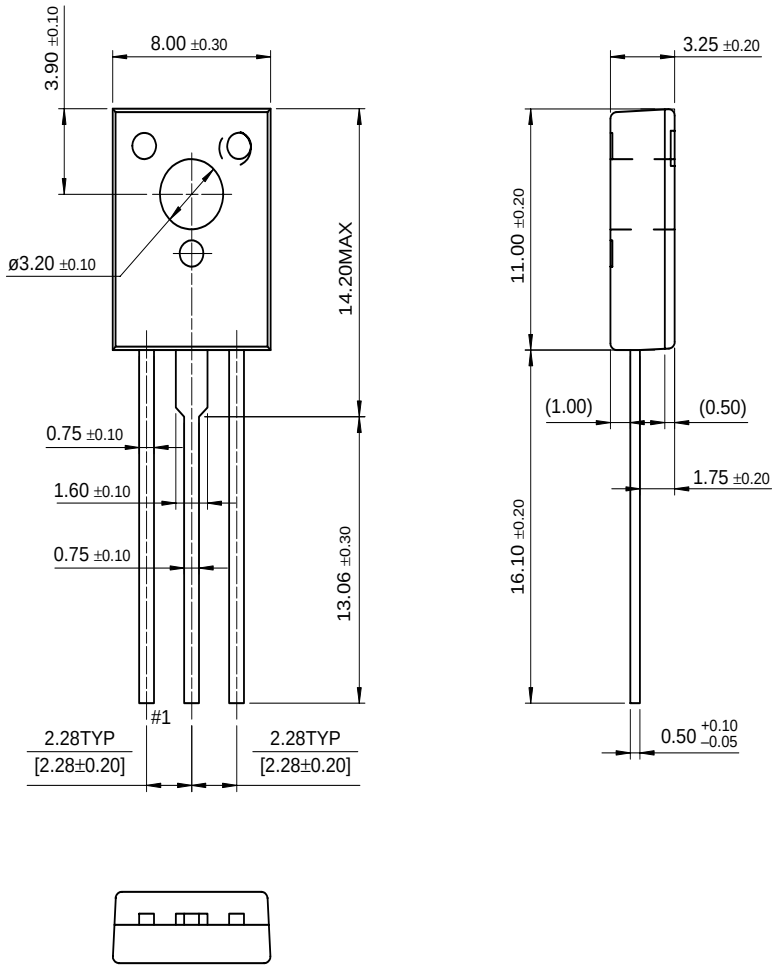

Dimensions in Millimeters

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