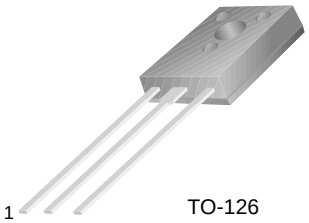
FAIRCHILD SEMICONDUCTOR®

KSE5020

Feature

- High Voltage, High Quality High Speed Switching : t_F=0.1µs
- WIDE SOA



TO-126

1. Emitter 2.Collector 3.Base

NPN Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	800	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	3	A
I_{CP}	Collector Current (Pulse)	6	A
I_B	Base Current (DC)	1	A
P_C	Collector Dissipation (T_C=25°C)	30	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

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 = 1mA, I_E = 0	800			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 5mA, R_{BE} =∞	500			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 1mA, I_C = 0	7			V
V_{CEX}(sus)	Collector-Emitter Sustaining Voltage	I_C = 1.5A, I_B1=-I_B2= 0.6A L = 2mH, Clamped	500			V
I_{CBO}	Collector Cut-off Current	V_{CB} = 500V, I_E = 0			10	µA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0			10	µA
h_{FE1} h_{FE2}	DC Current Gain	V_{CE} = 5V, I_C = 0.3A V_{CE} = 5V, I_C = 1.5A	15 8		50	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 1.5A, I_B = 0.3A			1	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 1.5A, I_B = 0.3A			1.5	V
C_{ob}	Output Capacitance	V_{CB} = 10V, f = 1MHz		50		pF
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 0.3A		18		MHz
t_{ON}	Turn ON Time	V_{CC} = 200V 5I_B1 = -2.5I_B2=I_C=2A RL = 100Ω			0.5	µs
t_S	Storage Time				3	µs
t_F	Fall Time				0.3	µs

h_{FE} Classification

Classification	R	O	Y
h_{FE1}	15 ~ 30	20 ~ 40	30 ~ 50

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Typical Characteristics

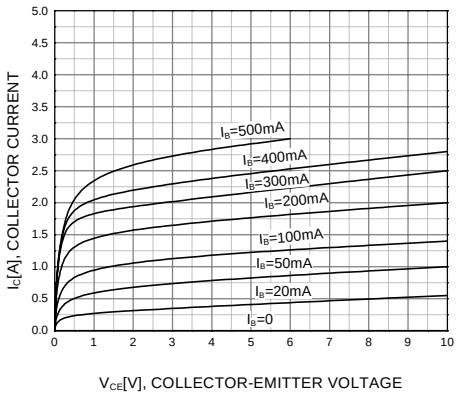

Figure 1. Static Characteristic

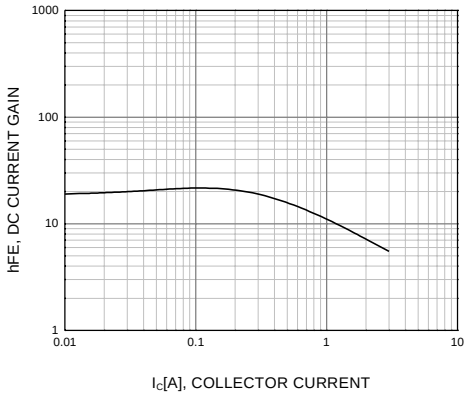

Figure 2. DC current Gain

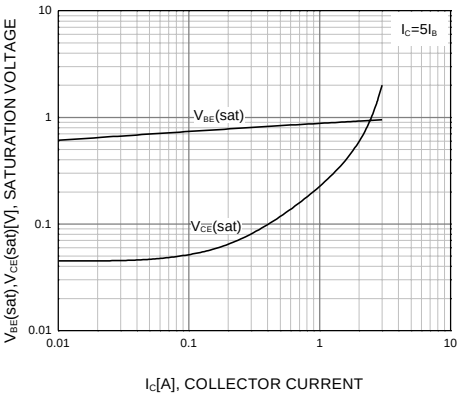

Figure 3. Collector-Emitter Saturation Voltage
Baser-Emitter Saturation Voltage

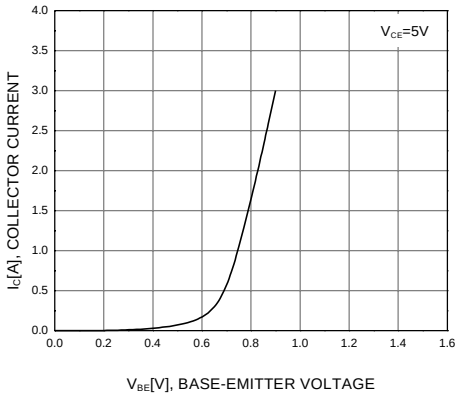

Figure 4. Base-Emitter On Voltage

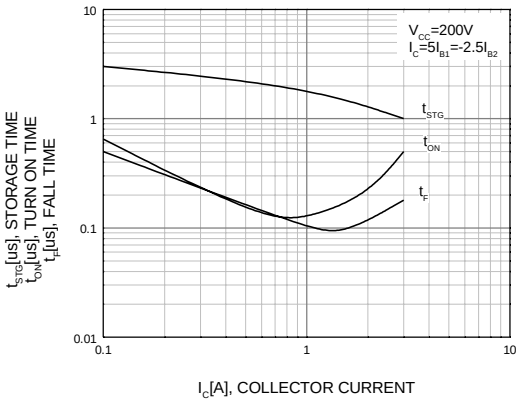

Figure 5. Turn On Time

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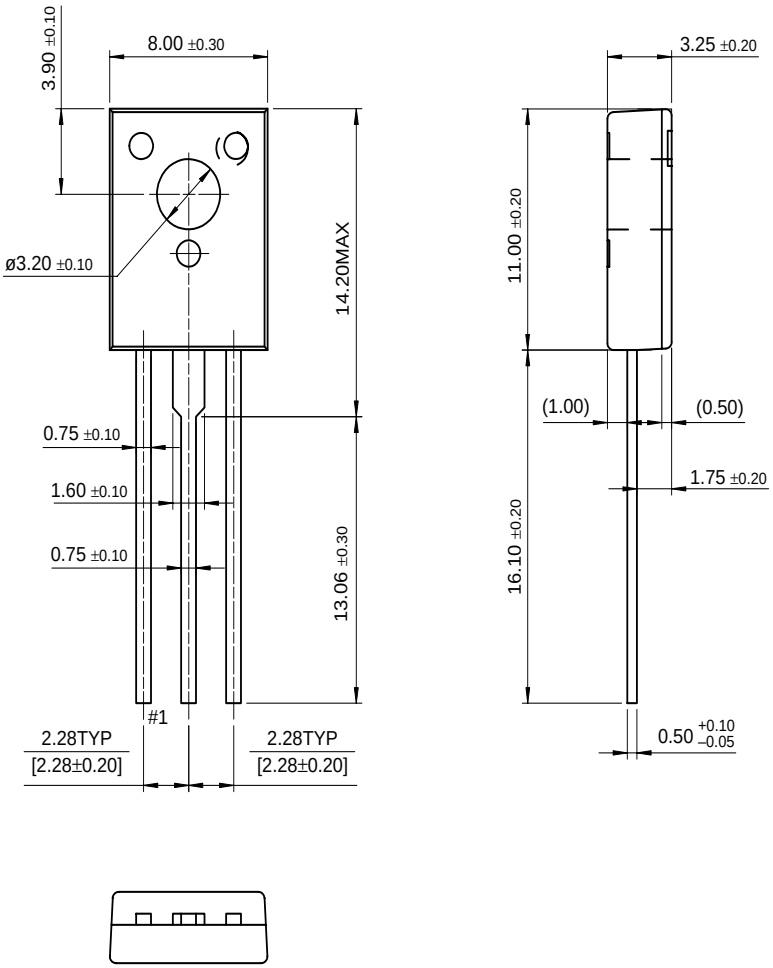
Package Demensions

TO-126



Dimensions in Millimeters

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