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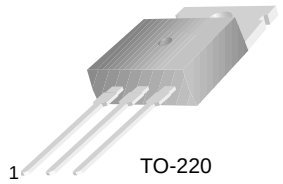
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes 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.

KSC2334

High Speed Switching Industrial Use

- Complement to KSA1010



TO-220

1.Base 2.Collector 3.Emitter

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	7	A
I_{CP}	*Collector Current (Pulse)	15	A
I_B	Base Current (DC)	3.5	A
P_C	Collector Dissipation (T_C=25°C)	40	W
	Collector Dissipation (T_A=25°C)	1.5	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

* PW≤300μs, Duty Cycle≤10%

Electrical Characteristics TC=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V_{CEO}(sus)	Collector-Emitter Sustaining Voltage	I_C = 5A, I_{B1}= 0.5A, L = 1mH	100		V
V_{CEX}(sus)1	Collector-Emitter Sustaining Voltage	I_C = 5A, I_{B1} = -I_{B2} = 0.5A V_{BE}(off) = -5V, L = 180μH, Clamped	100		V
V_{CEX}(sus)2	Collector-Emitter Sustaining Voltage	I_C = 10A, I_{B1} =1A, I_{B2} = -0.5A, V_{BE}(off) = -5V, L = 180μH, Clamped	100		V
I_{CBO}	Collector Cut-off Current	V_{CB} = 100, I_E = 0		10	μA
I_{CER}	Collector Cut-off Current	V_{CE} = 100V, R_{BE} = 51Ω@T_C =125°C		1	mA
I_{CEX1} I_{CEX2}	Collector Cut-off Current	V_{CE} = 100V, V_{BE}(off) = -1.5V V_{CE} = 100V, V_{BE}(off) = -1.5V @ T_C= 125°C		10 1	μA mA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0		10	μA
h_{FE1} h_{FE2} h_{FE3}	* DC Current Gain	V_{CE} = 5V, I_C = 0.5A V_{CE} = 5V, I_C = 3A V_{CE} = 5V, I_C = 5A	40 40 20	240	
V_{CE}(sat)	* Collector-Emitter Saturation Voltage	I_C = 5A, I_B = 0.5A		0.6	V
V_{BE}(sat)	* Base-Emitter Saturation Voltage	I_C = 5A, I_B = 0.5A		1.5	V
t_{ON}	Turn On Time	V_{CC} = 50V, I_C = 5A I_{B1} = -I_{B2} = 0.5A R_L = 10Ω		0.5	μs
t_{STG}	Storage Time			0.5	μs
t_F	Fall Time			1.5	μs

* Pulse Test: PW≤350μs, Duty Cycle≤2%Pulsed

h_{FE} Classification

Classification	R	O	Y
h_{FE2}	40 ~ 80	70 ~ 140	120 ~ 240

Typical Characteristics

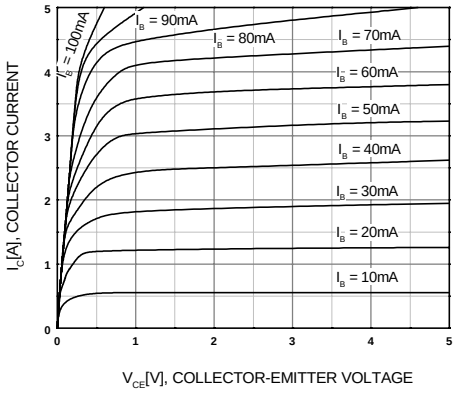


Figure 1. Static Characteristic

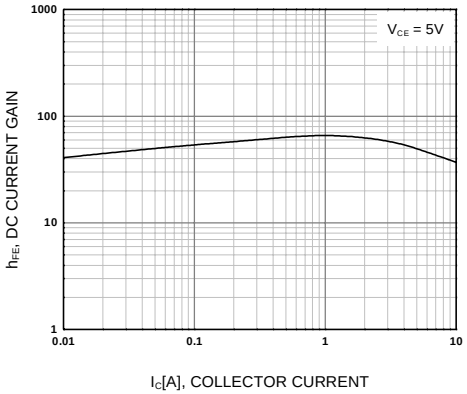


Figure 2. DC current Gain

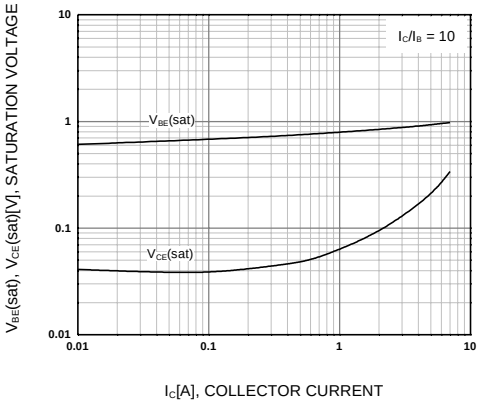


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

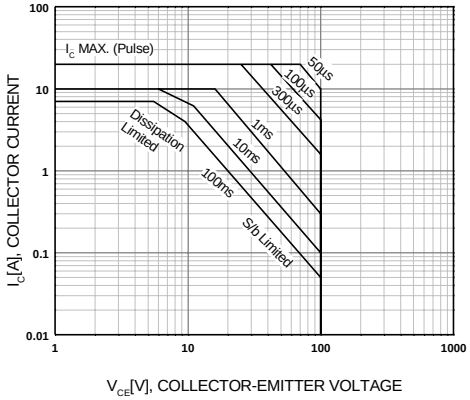


Figure 4. Safe Operating Area

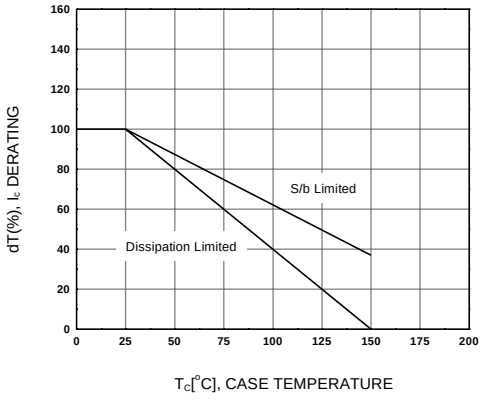


Figure 5. Derating Curve of Safe Operating Areas

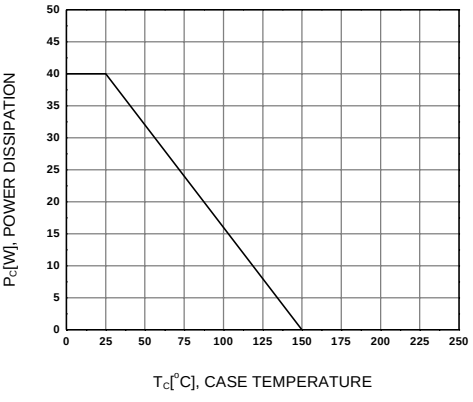
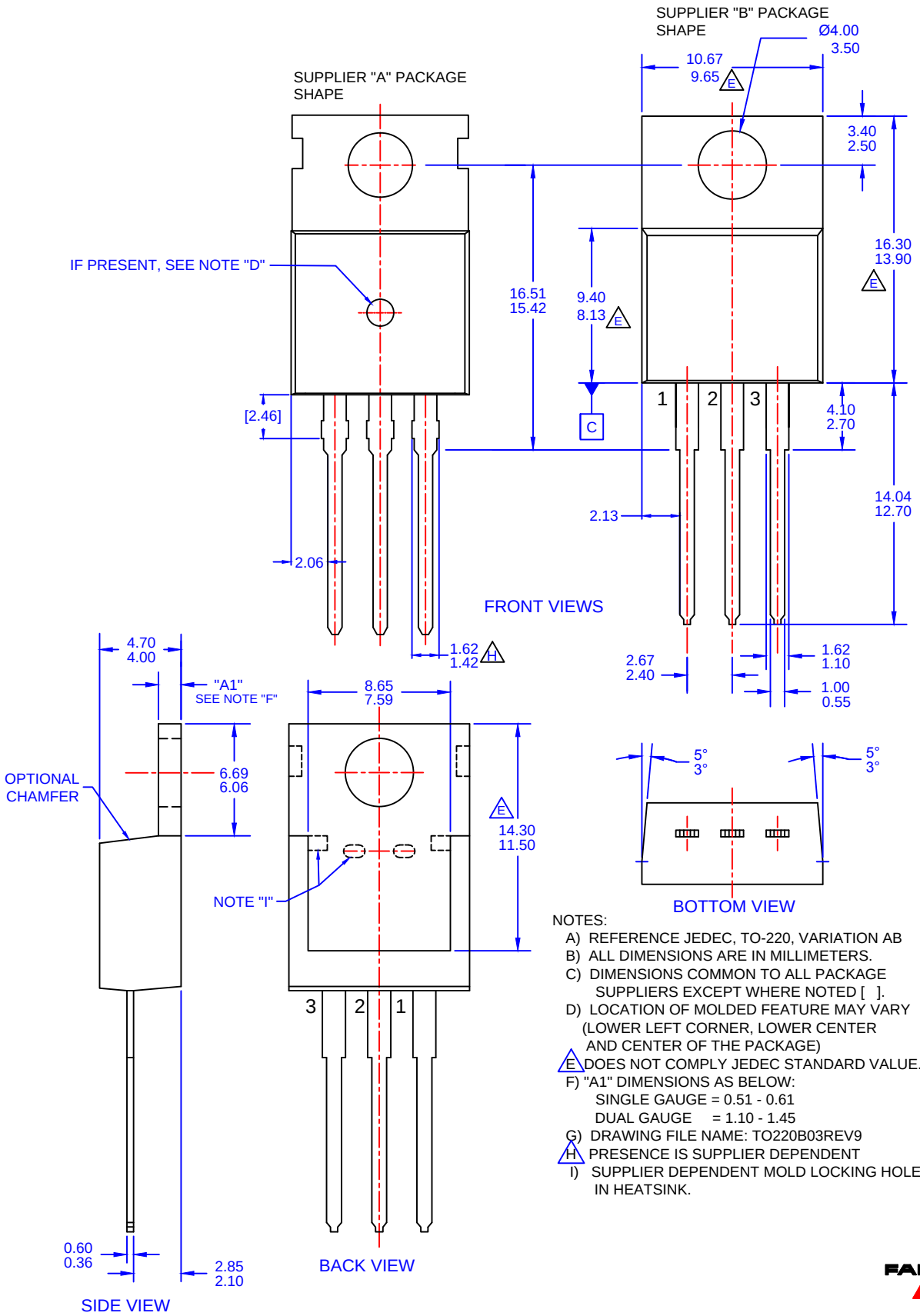


Figure 6. Power Derating



NOTES:

A) REFERENCE JEDEC, TO-220, VARIATION AB
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DIMENSIONS COMMON TO ALL PACKAGE SUPPLIERS EXCEPT WHERE NOTED [ ].
D) LOCATION OF MOLDED FEATURE MAY VARY (LOWER LEFT CORNER, LOWER CENTER AND CENTER OF THE PACKAGE)
E DOES NOT COMPLY JEDEC STANDARD VALUE.
F) "A1" DIMENSIONS AS BELOW:
SINGLE GAUGE = 0.51 - 0.61
DUAL GAUGE = 1.10 - 1.45
G) DRAWING FILE NAME: TO220B03REV9
H PRESENCE IS SUPPLIER DEPENDENT
I) SUPPLIER DEPENDENT MOLD LOCKING HOLES IN HEATSINK.

FAIRCHILD

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