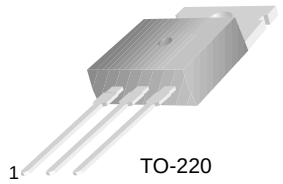
KSC2334

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

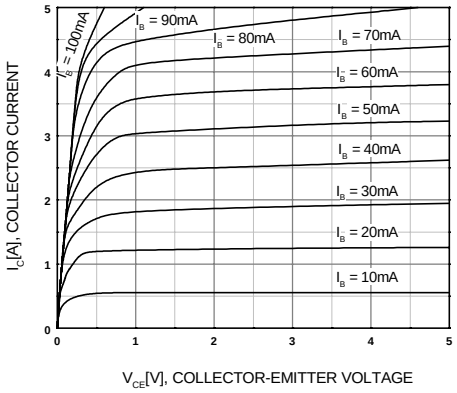


Figure 1. Static Characteristic

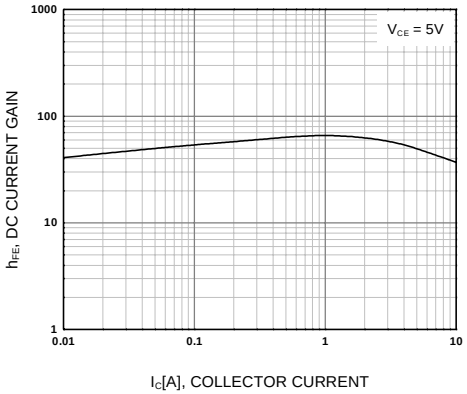


Figure 2. DC current Gain

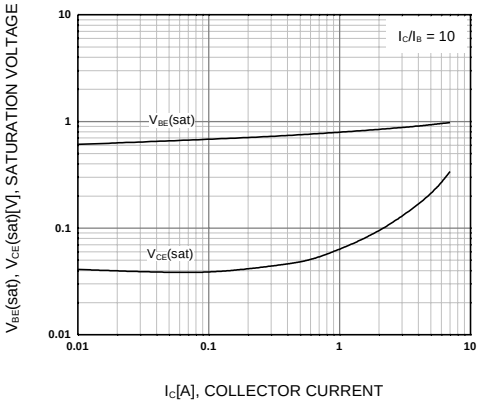


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

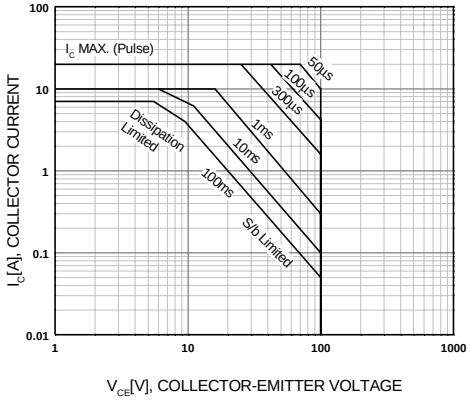


Figure 4. Safe Operating Area

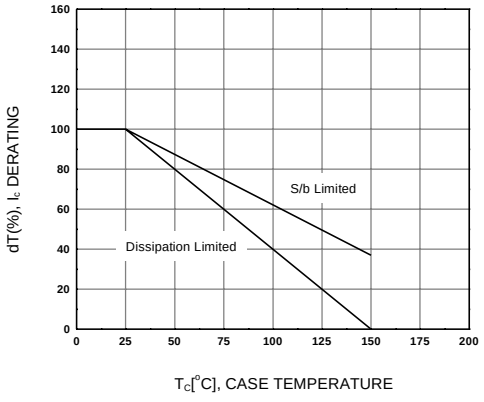


Figure 5. Derating Curve of Safe Operating Areas

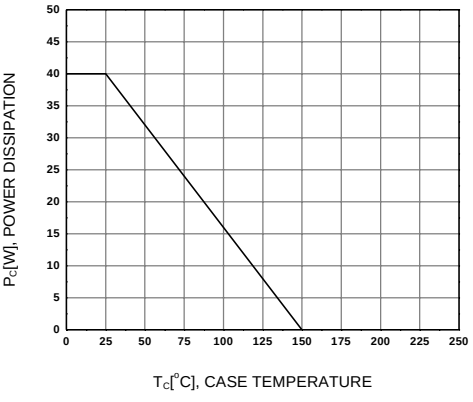
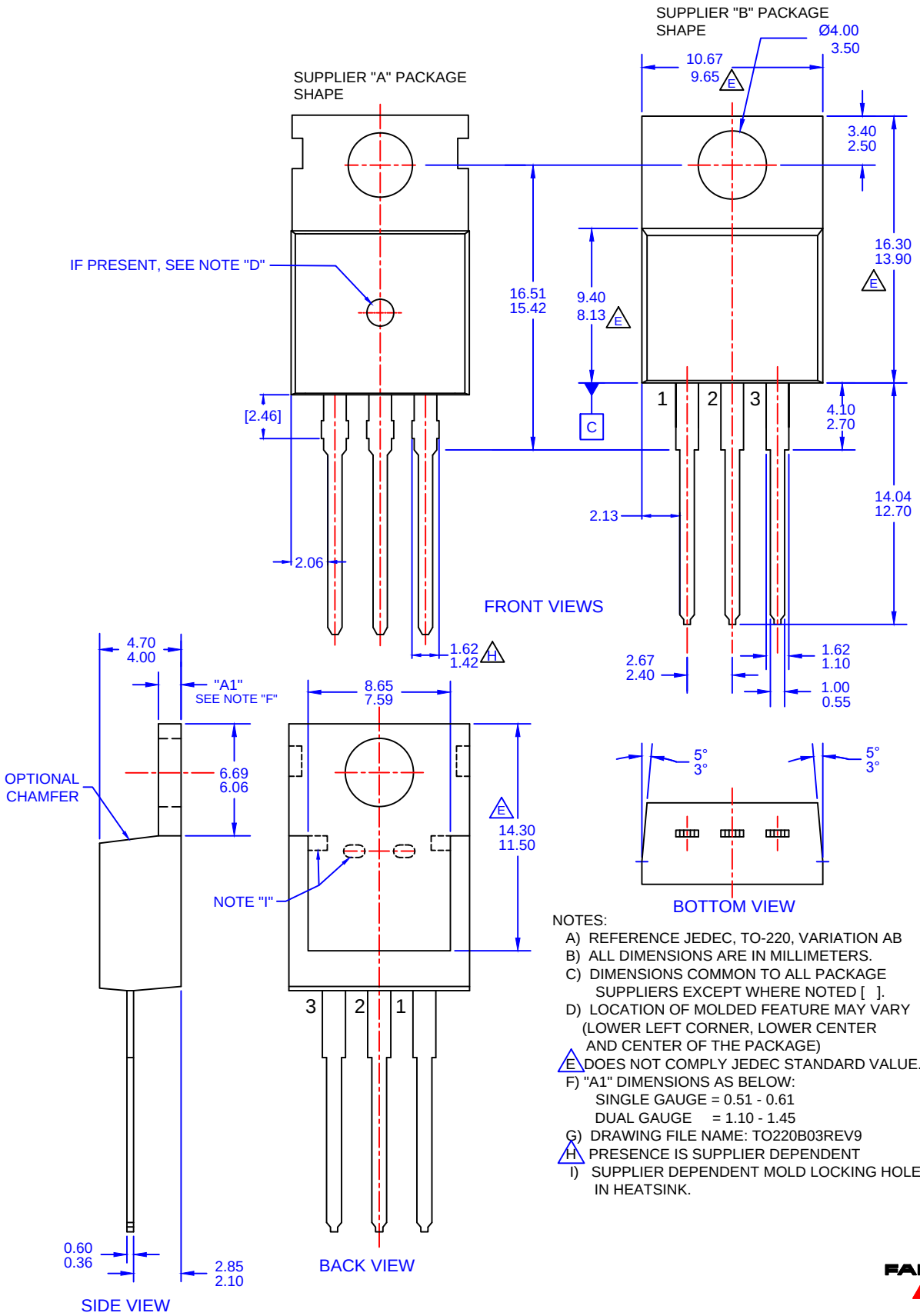


Figure 6. Power Derating



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.

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