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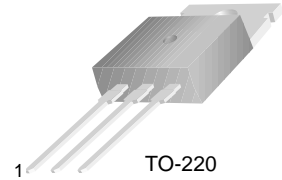


KSA1010

KSA1010

High Speed High Voltage Switching

- Industrial Use
- Complement to KSC2334



1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	- 100	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	- 3.5	A
P_C	Collector Dissipation ($T_C=25^{\circ}\text{C}$)	40	W
	Collector Dissipation ($T_a=25^{\circ}\text{C}$)	1.5	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^{\circ}\text{C}$

* $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 10\%$

Electrical Characteristics $T_C=25^\circ\text{C}$ 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	$I_C = -5A, I_{B1} = -I_{B2} = -0.5A$ $V_{BE(off)} = 5V, L = 180\mu H$ Clamped	- 100		V
$V_{CEX(sus)2}$	Collector-Emitter Sustaining Voltage	$I_C = -10A, I_{B1} = -1A$ $I_{B2} = 0.5A, V_{BE(off)} = 5V$ $L = 180\mu H, \text{Clamped}$	- 100		V
I_{CBO}	Collector Cut-off Current	$V_{CB} = -100V, I_E = 0$		- 10	μA
I_{CER}	Collector Cut-off Current	$V_{CE} = -100V, R_{BE} = 51\Omega$ $T_C = 125^\circ C$		- 1	mA
I_{CEX1}	Collector Cut-off Current	$V_{CE} = -100V, V_{BE(off)} = 1.5V$		- 10	μA
I_{CEX2}	Collector Cut-off Current	$V_{CE} = -100V, V_{BE(off)} = 1.5V$ $T_C = 125^\circ C$		- 1	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	200	
$V_{CE(sat)}$	* 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	$V_{CC} = -50V, I_C = -5A,$		0.5	μs
t_{STG}	Storage Time	$I_{B1} = -I_{B2} = -0.5A$		1.5	μs
t_F	Fall Time	$R_L = 10\Omega$		0.5	μs

Pulse Test: $PW \leq 350\mu s, \text{Duty Cycle} \leq 2\%$ **h_{FE} Classification**

Classification	R	O	Y
h_{FE2}	40 ~ 80	60 ~ 120	100 ~ 200

Typical Characteristics

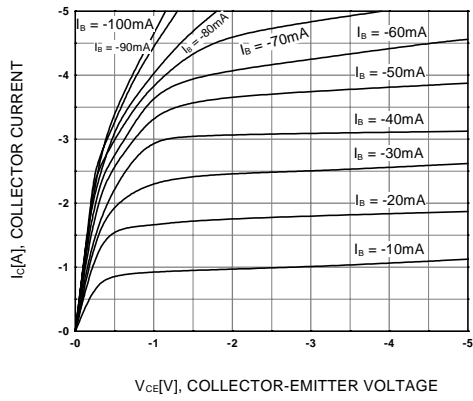


Figure 1. Static Characteristic

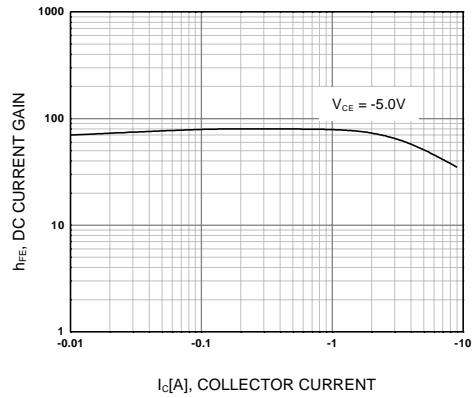


Figure 2. DC current Gain

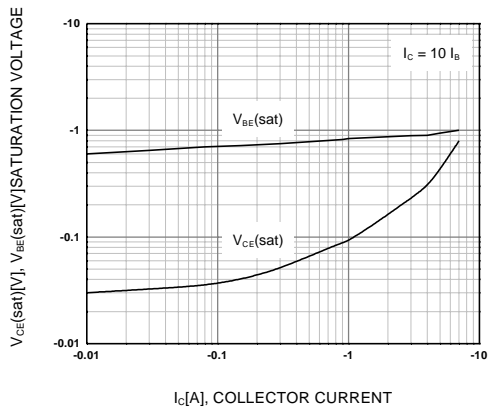


Figure 3. Base-Emitter Saturation Voltage
Collector-Emmitter Saturation Voltage

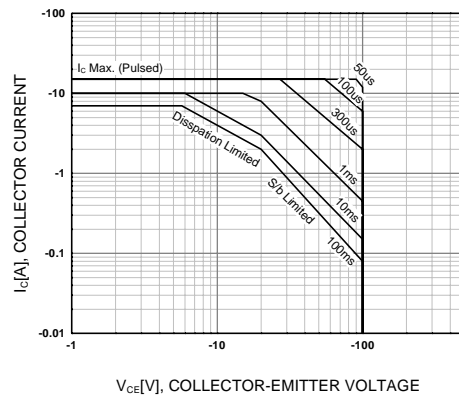


Figure 4. Safe Operating Area

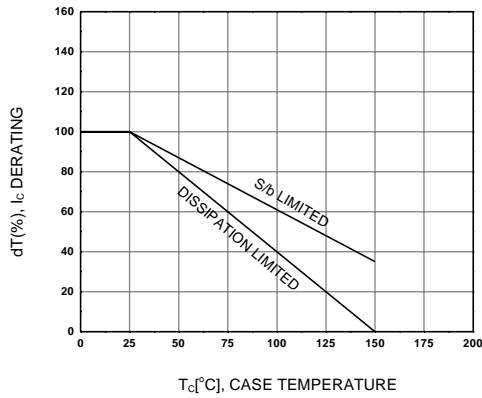


Figure 5. Derating Curve of Safe Operating Areas

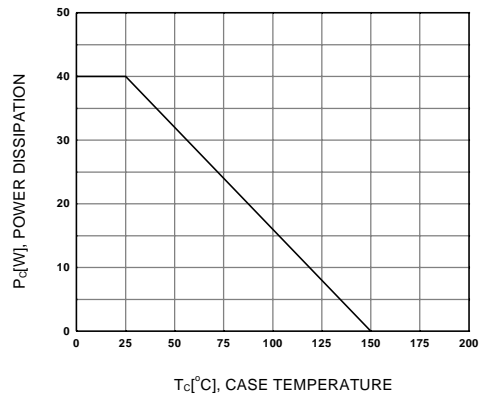
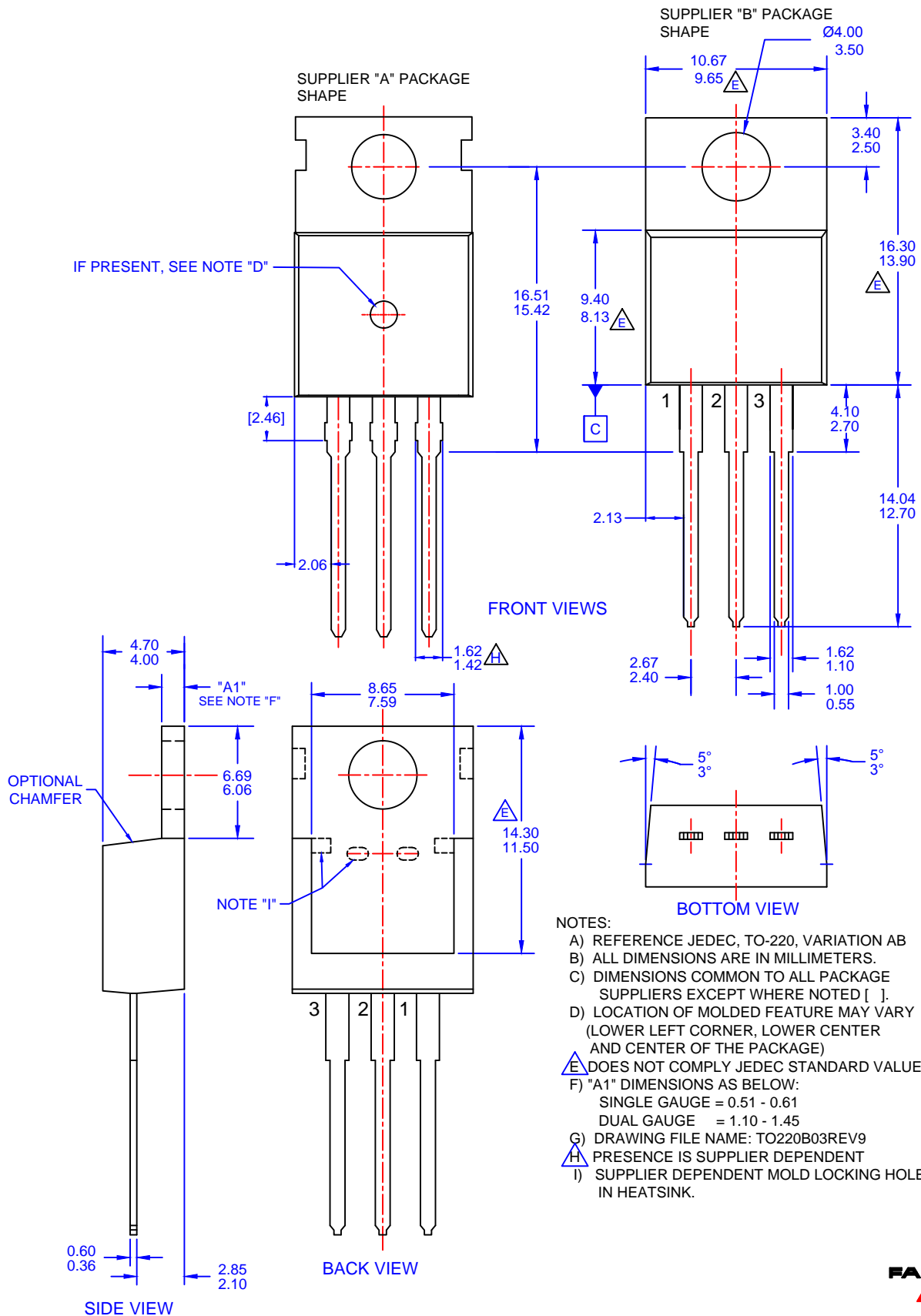


Figure 6. Power Derating



- 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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