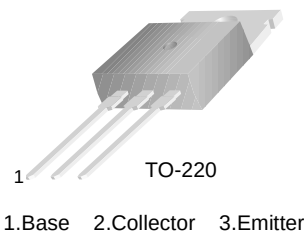


KSC2335

High Speed, High Voltage Switching

- Industrial Use



NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	500	V
V_{CEO}	Collector-Emitter Voltage	400	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 ($T_a=25^\circ\text{C}$)	1.5	W
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	40	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	$I_C = 3A, I_{B1} = 0.6A, L = 1mH$	400		V
$V_{CEX(sus)1}$	Collector-Emitter Sustaining Voltage	$I_C = 3A, I_{B1} = -I_{B2} = 0.6A$ $V_{BE(off)} = -5V, L = 180\mu H, \text{Clamped}$	450		V
$V_{CEX(sus)2}$	Collector-Emitter Sustaining Voltage	$I_C = 6A, I_{B1} = 2A, I_{B2} = -0.6A$ $V_{BE(off)} = -5V, L = 180\mu H, \text{Clamped}$	400		V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 400V, I_E = 0$		10	μA
I_{CER}	Collector Cut-off Current	$V_{CE} = 400V, R_{BE} = 51\Omega @ T_C=125^\circ\text{C}$		1	mA
I_{CEX1}	Collector Cut-off Current	$V_{CE} = 400V, V_{BE(off)} = -1.5V$		10	μA
I_{CEX2}	Collector Cut-off Current	$V_{CE} = 400V, V_{BE(off)} = -1.5V @ T_C=125^\circ\text{C}$		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	$V_{CE} = 5V, I_C = 0.1A$ $V_{CE} = 5V, I_C = 1A$ $V_{CE} = 5V, I_C = 3A$	20 20 10	80 80	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 3A, I_B = 0.6A$		1	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = 3A, I_B = 0.6A$		1.2	V
t_{ON}	Turn ON Time	$V_{CC} = 150V, I_C = 3A$ $I_{B1} = -I_{B2} = 0.6A$ $R_L = 50\Omega$		1	μs
t_{STG}	Storage Time			2.5	μs
t_F	Fall Time			1	μs

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

h_{FE} Classification

Classification	R	O	Y
h_{FE2}	20 ~ 40	30 ~ 60	40 ~ 80

Typical Characteristics

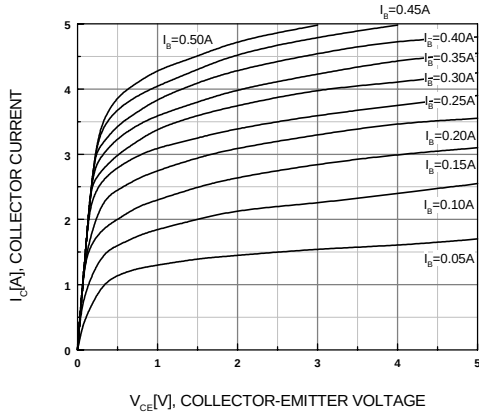


Figure 1. Static Characteristic

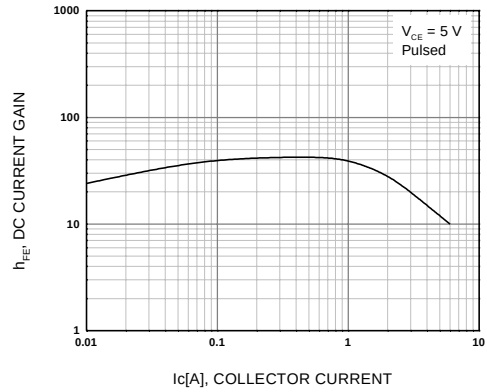


Figure 2. DC current Gain

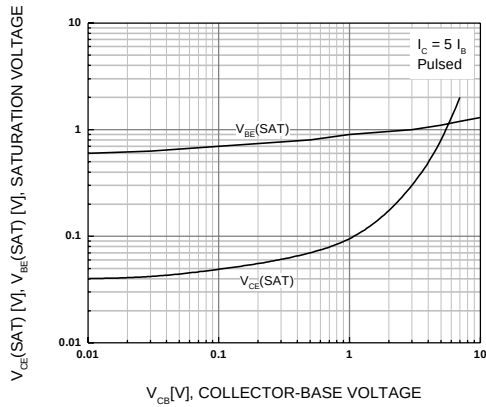


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

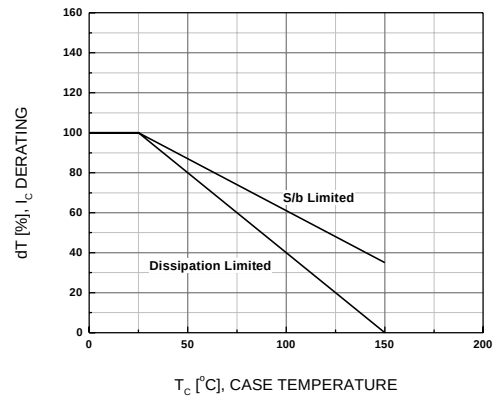


Figure 4. Derating Curve of Safe Operating Areas

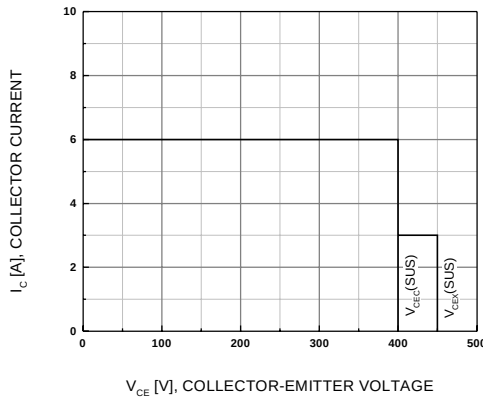


Figure 5. Reverse Bias Safe Operating Area

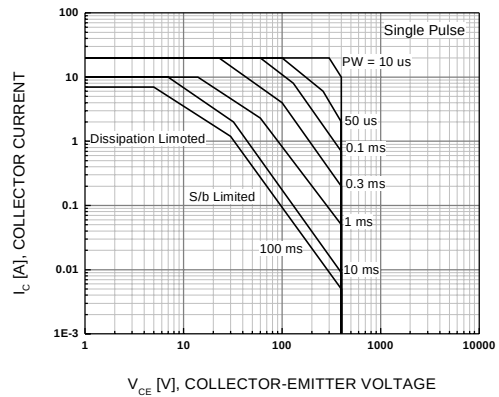
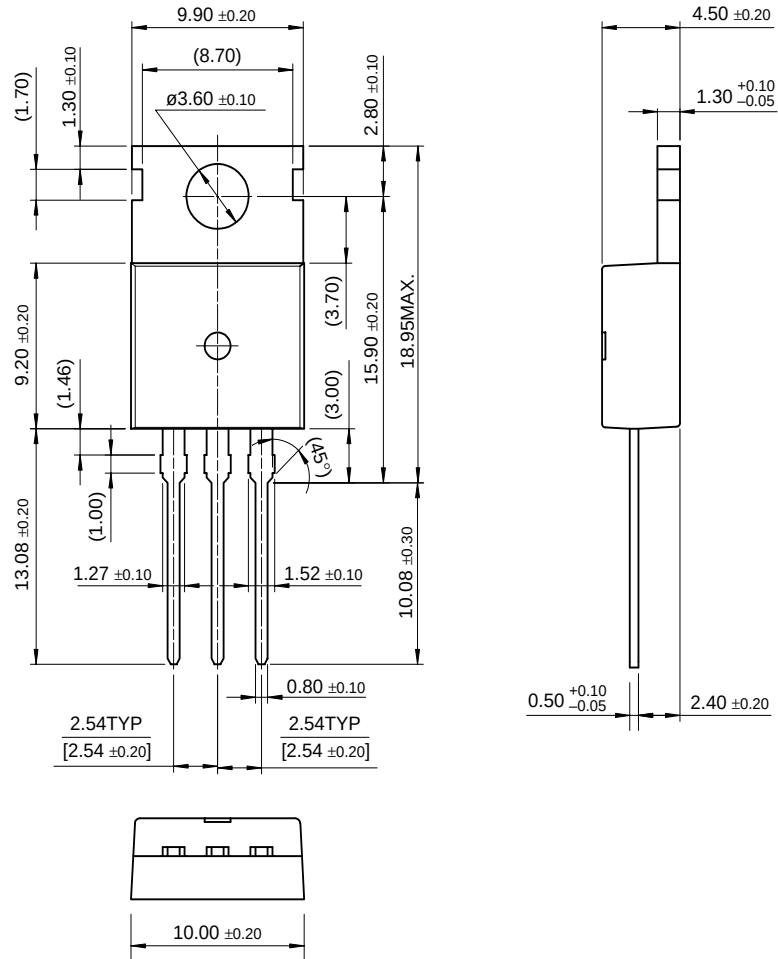


Figure 6. Forward Bias Safe Operating Area

Package Dimensions

TO-220



Dimensions in Millimeters

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