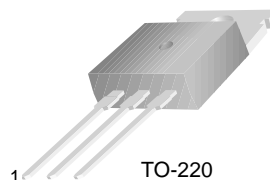


KSC2517

High Speed Switching Industrial Use



1.Base 2.Collector 3.Emitter

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	150	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	12	V
I_C	Collector Current (DC)	5	A
I_{CP}	Collector Current (Pulse)	10	A
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	1.5	W
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	30	W
I_B	Base Current	2.5	A
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

* $P_w \leq 300\mu\text{s}$, 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	$I_C = 3A, I_{B1} = 0.3A, L = 1mH$	100		V
$V_{CEX(sus)1}$	Collector-Emitter Sustaining Voltage	$I_C = 3A, I_{B1} = -I_{B2} = 0.3A$ $V_{BE(off)} = -5V, L = 180\mu H, \text{Clamped}$	150		V
$V_{CEX(sus)2}$	Collector-Emitter Sustaining Voltage	$I_C = 6A, I_{B1} = 1.2A, I_{B2} = -0.3A,$ $V_{BE(off)} = -5V, L = 180\mu H, \text{Clamped}$	100		V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 100V, I_E = 0$		10	μA
I_{CER}	Collector Cut-off Current	$V_{CE} = 100V, R_{BE} = 51\Omega @ T_C = 125^\circ\text{C}$		1	mA
I_{CEX1} I_{CEX2}	Collector Cut-off Current	$V_{CE} = 100V, V_{BE(off)} = -1.5V$ $V_{CE} = 100V, V_{BE(off)} = -1.5V @ T_C = 125^\circ\text{C}$		10 1	μA mA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 10V, I_C = 0$		10	μA
h_{FE1} h_{FE2}	* DC Current Gain	$V_{CE} = 5V, I_C = 0.2A$ $V_{CE} = 5V, I_C = 2A$	40 40	200	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 3A, I_B = 0.3A$		0.6	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = 3A, I_B = 0.3A$		1.5	V
t_{ON}	Turn ON Time	$V_{CC} = 50V, I_C = 3A$ $I_{B1} = -I_{B2} = 0.3A$ $R_L = 17\Omega$		0.5	μs
t_{STG}	Storage Time			2.5	μs
t_F	Fall Time			0.5	μs

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

h_{FE} Classification

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

Typical Characteristics

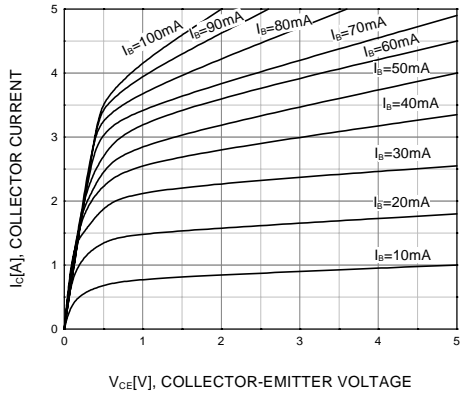


Figure 1. Static Characteristic

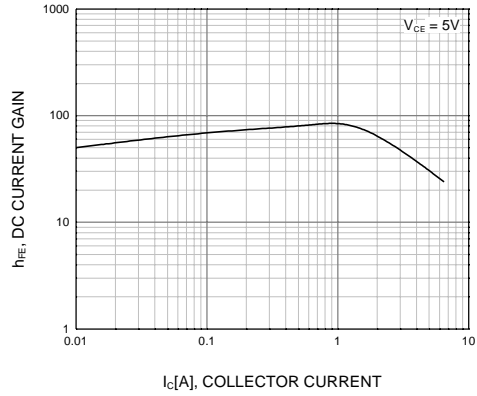


Figure 2. DC current Gain

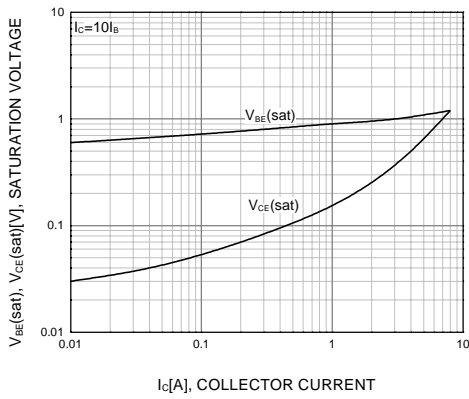


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

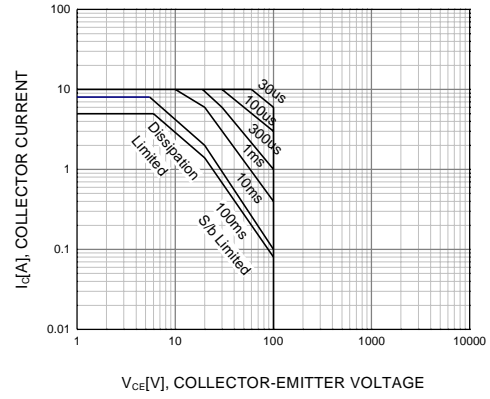


Figure 4. Safe Operating Area

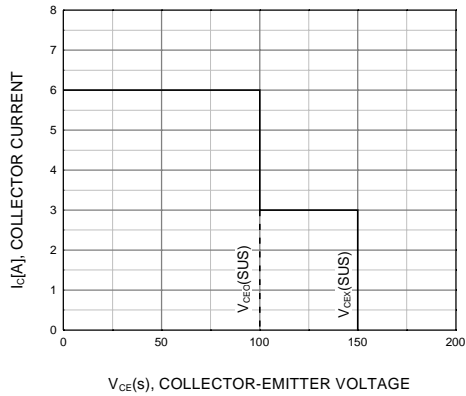


Figure 5. Reverse Bias Safe Operating Area

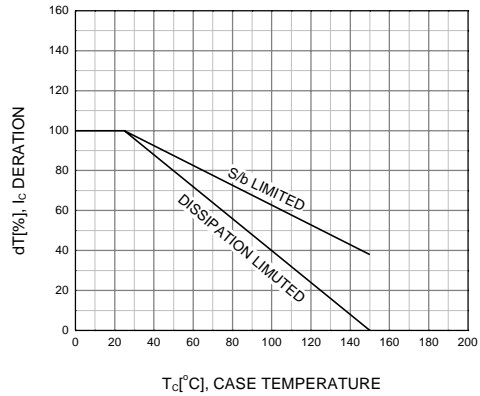


Figure 6. Derating Curve of Safe Operating Areas

Typical Characteristics (Continued)

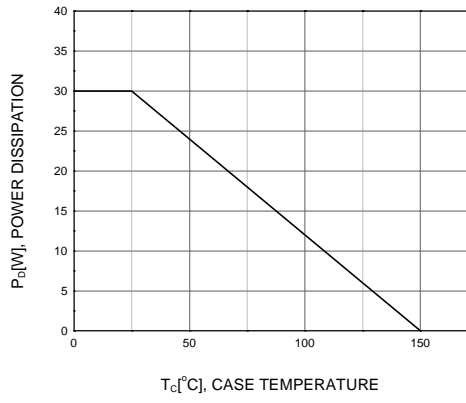
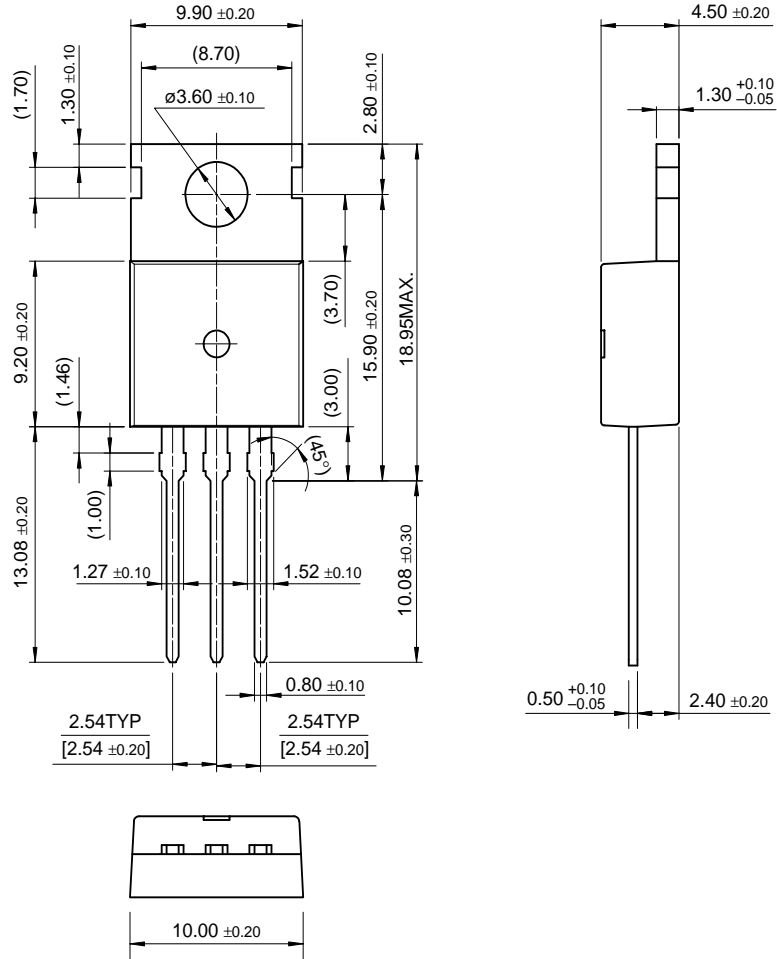


Figure 7. Power Derating

Package Dimensions

TO-220



Dimensions in Millimeters

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