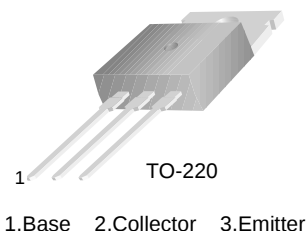


KSE44H Series

General Purpose Power Switching Applications

- Low Collector-Emitter Saturation Voltage : $V_{CE(sat)} = 1V$ (Max.) @ 8A
- Fast Switching Speeds
- Complement to KSE45H



NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage : KSE44H 1,2	30	V
	: KSE44H 4,5	45	V
	: KSE44H 7,8	60	V
	: KSE44H 10,11	80	V
V_{EBO}	Emitter- Base Voltage	5	V
I_C	Collector Current (DC)	10	A
I_{CP}	*Collector Current (Pulse)	20	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	50	W
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	1.67	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CES}	Collector Cut-off Current	$V_{CE} = \text{Rated } V_{CEO}, V_{EB} = 0$			10	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5V, I_C = 0$			100	μA
h_{FE}	*DC Current Gain : KSE44H 1,4,7,10 : KSE44H 2,5,8,11	$V_{CE} = 1V, I_C = 2A$	35			
			60			
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage : KSE44H 1, 4, 7 10 : KSE44H 2, 5, 8,11	$I_C = 8A, I_B = 0.8A$			1	V
		$I_C = 8A, I_B = 0.4A$			1	V
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage	$I_C = 8A, I_B = 0.8A$			1.5	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10V, I_C = 0.5A$		50		MHz
C_{ob}	Output Capacitance	$V_{CB} = 10V, f = 1\text{MHz}$		130		pF
t_{ON}	Turn ON Time	$V_{CC} = 20V, I_C = 5A$ $I_{B1} = - I_{B2} = 0.5A$		300		ns
t_{STG}	Storage Time			500		ns
t_F	Fall Time			140		ns

* Pulse test: $PW \leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

Typical Characteristics

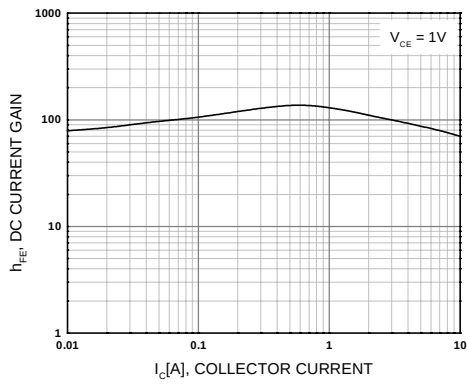


Figure 1. DC current Gain

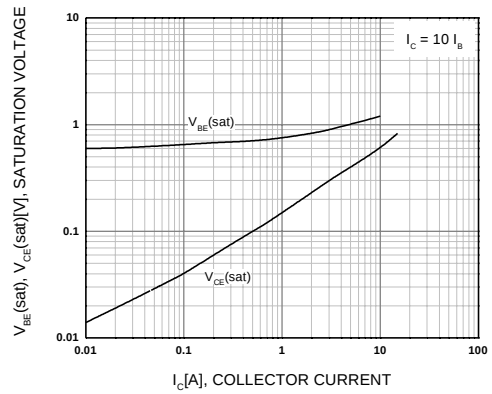


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

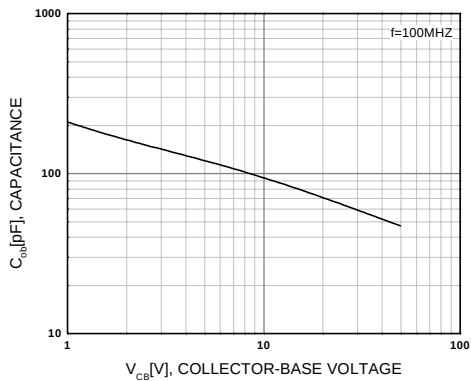


Figure 3. Collector Output Capacitance

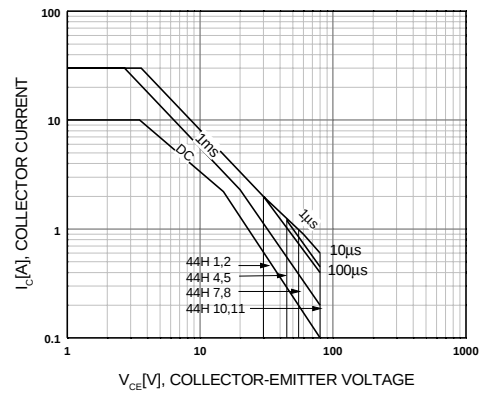


Figure 4. Safe Operating Area

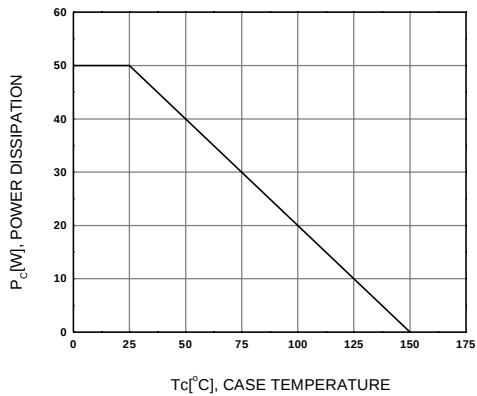
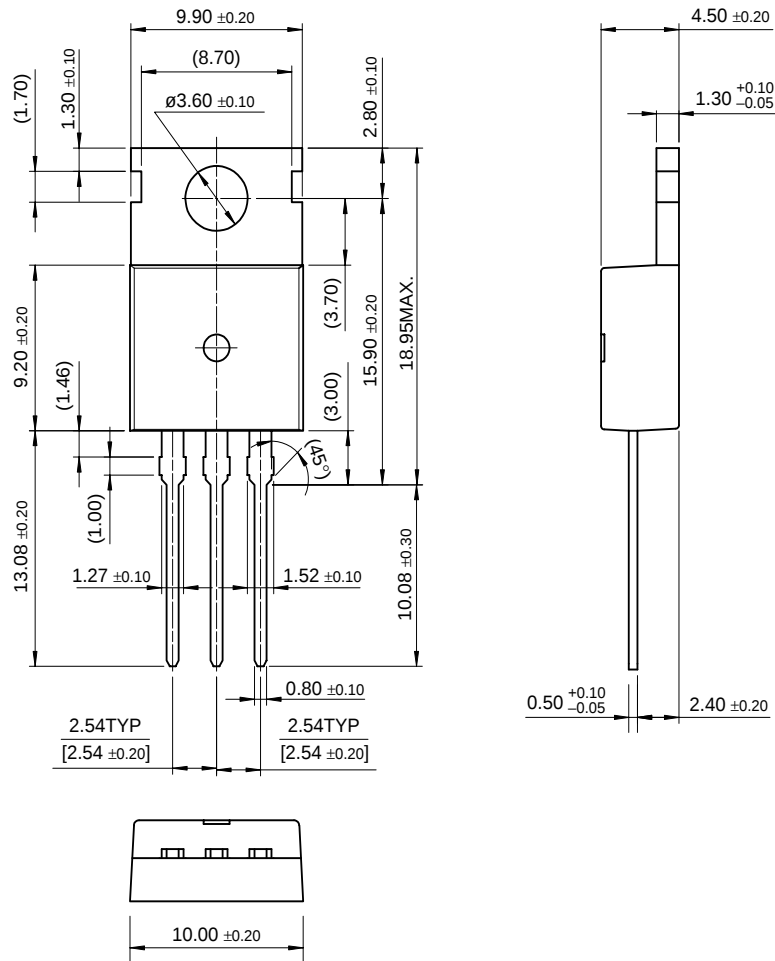


Figure 5. Power Derating

Package Dimensions

TO-220



Dimensions in Millimeters

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