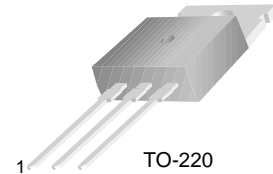


## KSE44H Series

### General Purpose Power Switching Applications

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



TO-220  
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	
$V_{CEO}$	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	$\mu\text{A}$	
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 5V, I_C = 0$			100	$\mu\text{A}$	
$h_{FE}$	*DC Current Gain	$V_{CE} = 1V, I_C = 2A$					
			: KSE44H 1,4,7,10 : KSE44H 2,5,8,11	35 60			
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 8A, I_B = 0.8A$ $I_C = 8A, I_B = 0.4A$			1	V	
			: KSE44H 1, 4, 7 10			1	V
			: KSE44H 2, 5, 8,11				
$V_{BE(sat)}$	*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

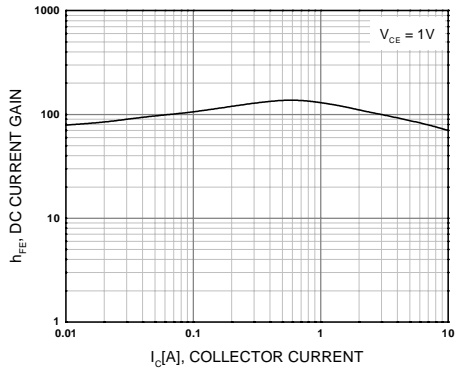


Figure 1. DC current Gain

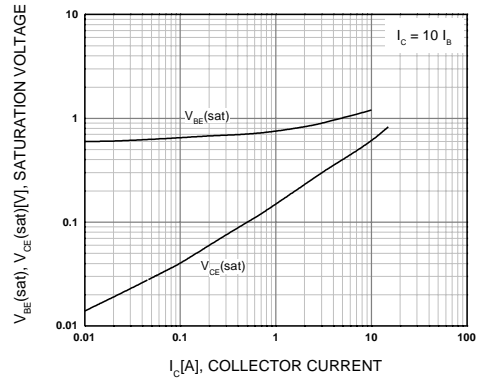


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

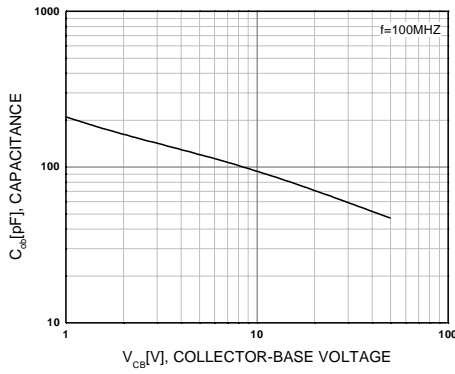


Figure 3. Collector Output Capacitance

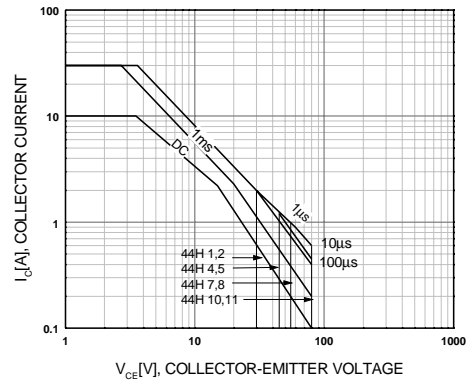


Figure 4. Safe Operating Area

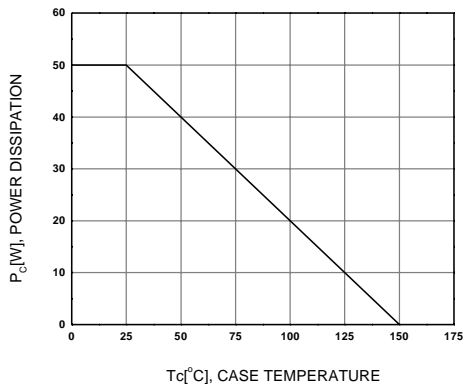
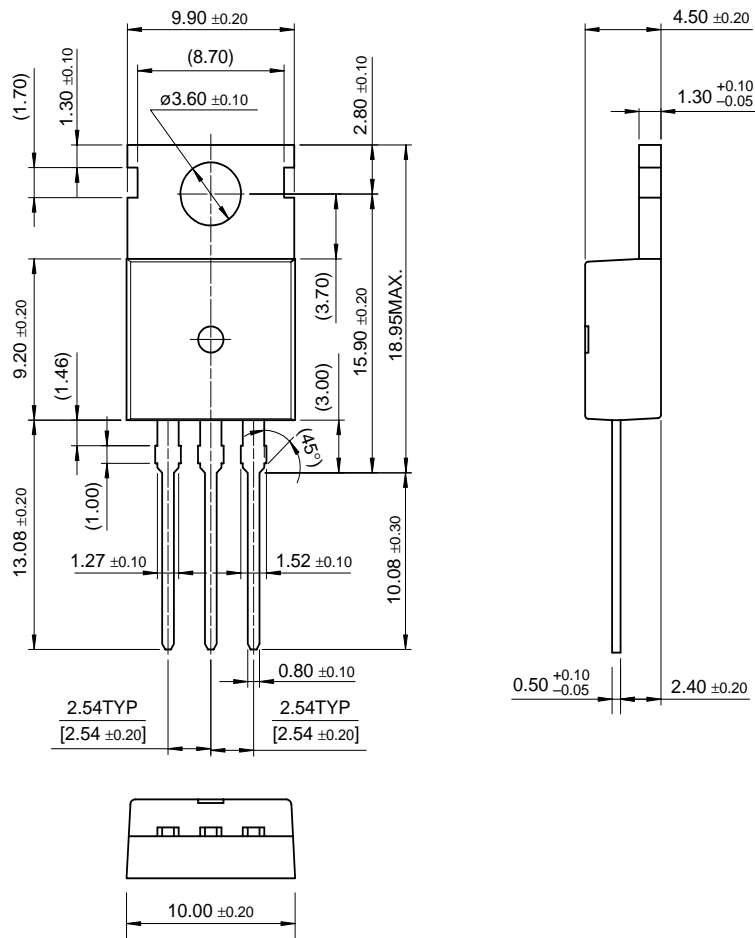


Figure 5. Power Derating

# Package Dimensions

KSE44H Series

## TO-220



Dimensions in Millimeters

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