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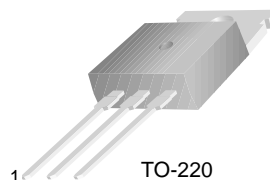
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## KSE45H Series

### General Purpose Power Switching Applications

- Low Collector-Emitter Saturation Voltage:  $V_{CE(sat)} = -1V$  (MAX)@-8A
- Fast Switching Speeds
- Complement to KSE44H



TO-220  
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
$V_{CEO}$	Collector-Emitter Voltage : KSE45H 1,2	- 30	V
	: KSE45H 4,5	- 45	V
	: KSE45H 7,8	- 60	V
	: KSE45H 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 : KSE45H 1, 4, 7 10 : KSE45H 2, 5, 8, 11	$V_{CE} = -1V, I_C = -2A$	35			
			60			
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage : KSE45H 1, 4, 7 10 : KSE45H 2, 5, 8, 11	$I_C = -8A, I_B = -0.8A$			-1	V
		$I_C = -8A, I_B = -0.4A$			-1	V
		$I_C = -8A, I_B = -0.8A$			-1.5	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -10V, I_C = -0.5A$		40		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10V, f = 1\text{MHz}$		230		pF
$t_{ON}$	Turn ON Time	$V_{CC} = 20V, I_C = -5A$ $I_{B1} = -I_{B2} = -0.5A$		135		ns
$t_{STG}$	Storage Time			500		ns
$t_F$	Fall Time			100		ns

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

# Typical Characteristics

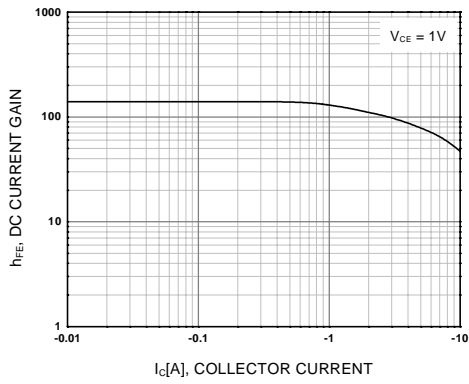


Figure 1. DC current Gain

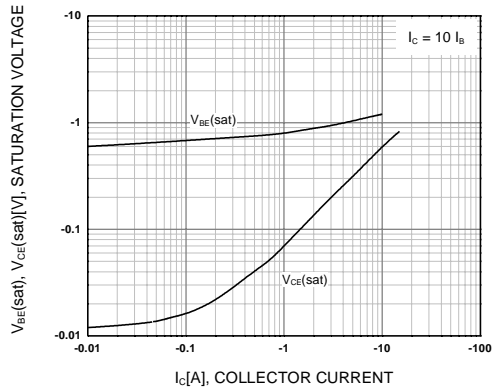


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

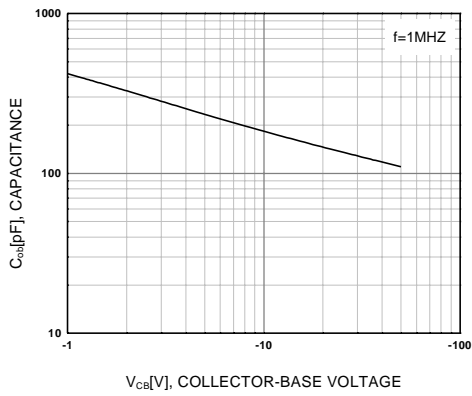


Figure 3. Collector Output Capacitance

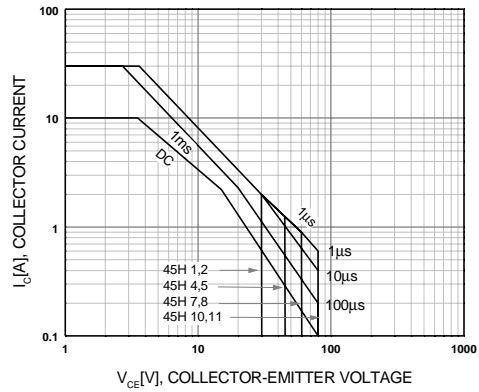


Figure 4. Safe Operating Area

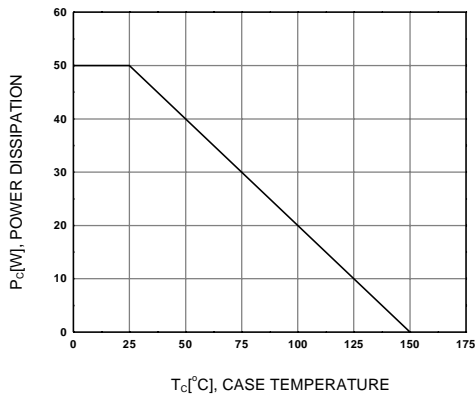
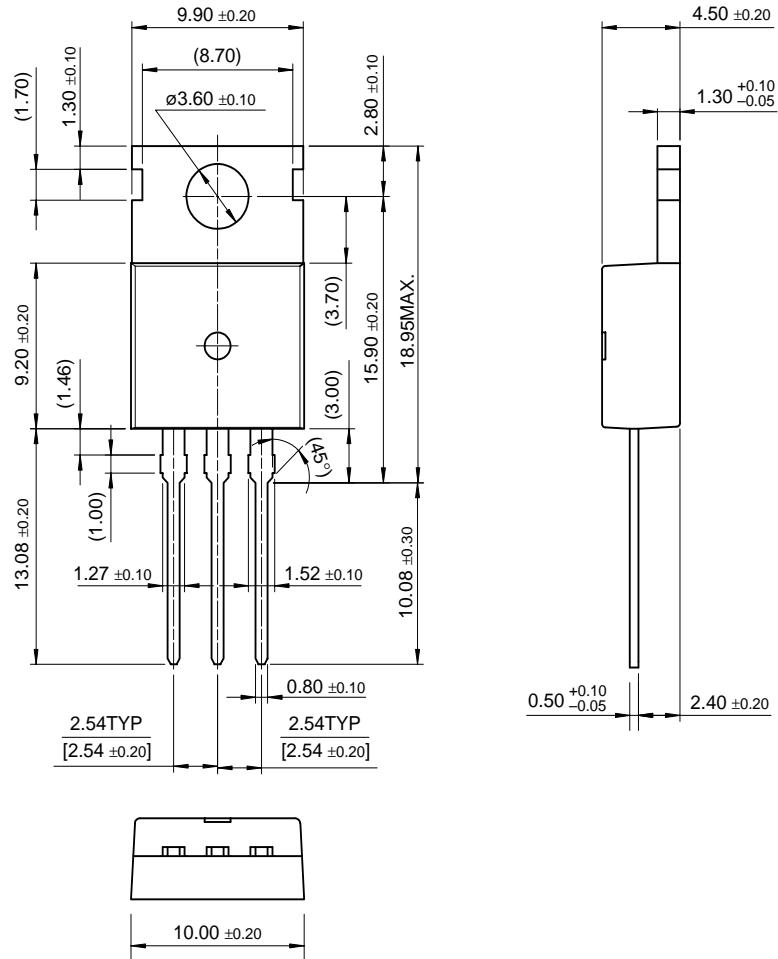


Figure 5. Power Derating

# Package Dimensions

KSE45H Series

## TO-220



Dimensions in Millimeters

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