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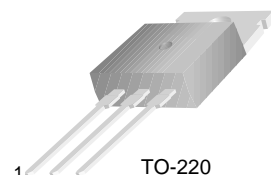
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## KSE44H Series

### 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 $T_C=25^\circ C$ unless otherwise noted

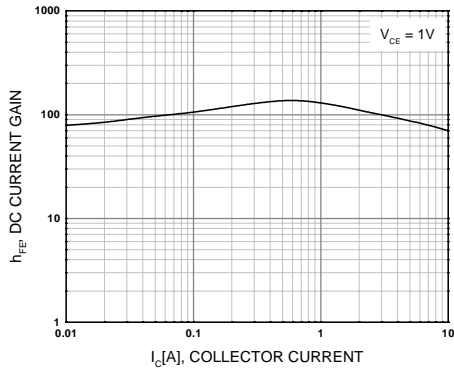
Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage : KSE44H 1,2	30	V
	: KSE44H 4,5	45	V
	: KSE44H 7,8	60	V
	: KSE44H 10,11	80	V
$V_{EBO}$	Emitter- Base Voltage	5	V
$I_C$	Collector Current (DC)	10	A
$I_{CP}$	*Collector Current (Pulse)	20	A
$P_C$	Collector Dissipation ( $T_C=25^\circ C$ )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

#### Electrical Characteristics $T_C=25^\circ C$ unless otherwise noted

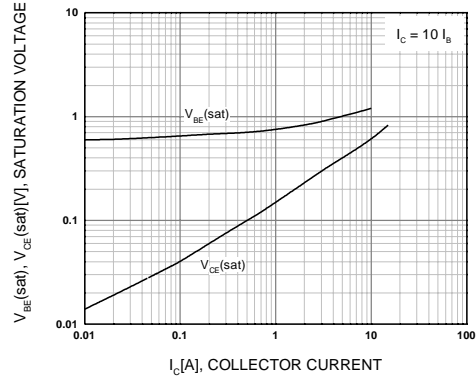
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$I_{CES}$	Collector Cut-off Current	$V_{CE} = \text{Rated } V_{CEO}, V_{EB} = 0$			10	$\mu A$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 5V, I_C = 0$			100	$\mu A$
$h_{FE}$	*DC Current Gain : KSE44H 1,4,7,10 : KSE44H 2,5,8,11	$V_{CE} = 1V, I_C = 2A$	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
					1.5	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	$V_{CB} = 10V, f = 1MHz$		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:  $PW \leq 300\mu s$ , Duty cycle  $\leq 2\%$

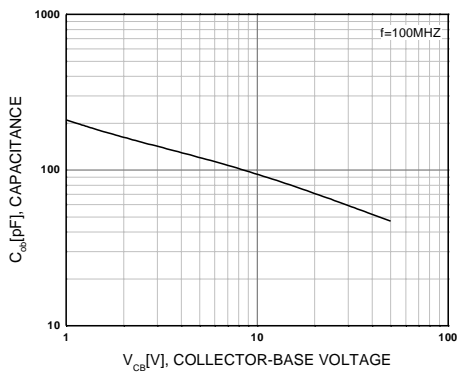
**Typical Characteristics**



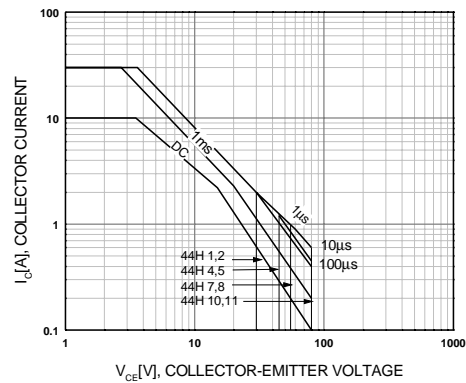
**Figure 1. DC current Gain**



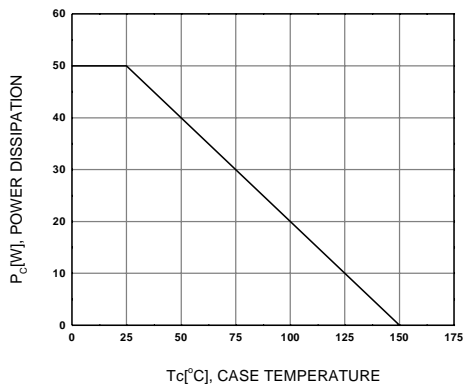
**Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Figure 3. Collector Output Capacitance**



**Figure 4. Safe Operating Area**



**Figure 5. Power Derating**



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