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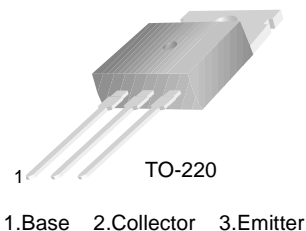
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KSE45H Series

General Purpose Power Switching Applications

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



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 | μA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = -5V, I_C = 0$ | | | -100 | μA |
| 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 | $I_C = -8A, I_B = -0.8A$ $I_C = -8A, I_B = -0.4A$ | | | -1 -1 | V V |
| $V_{BE(sat)}$ | *Base-Emitter Saturation Voltage | $I_C = -8A, I_B = -0.8A$ | | | -1.5 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE} = -10V, I_C = -0.5A$ | | 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

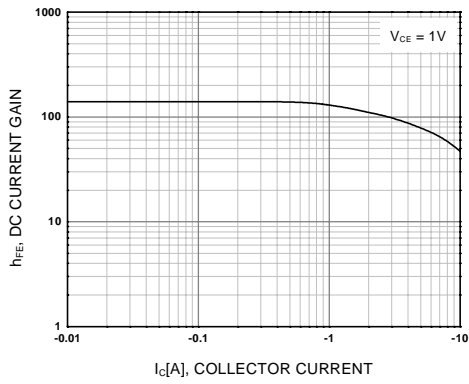


Figure 1. DC current Gain

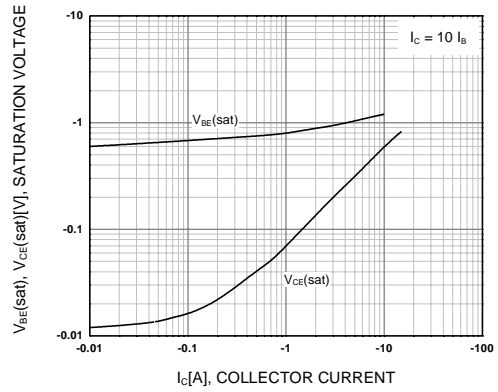


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

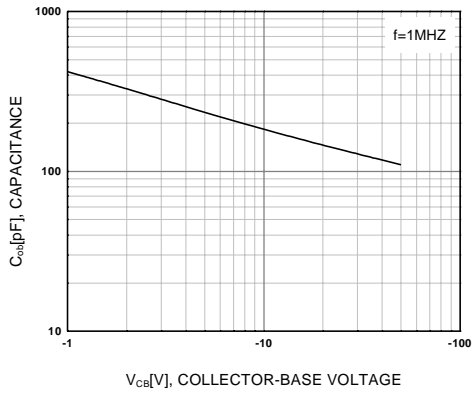


Figure 3. Collector Output Capacitance

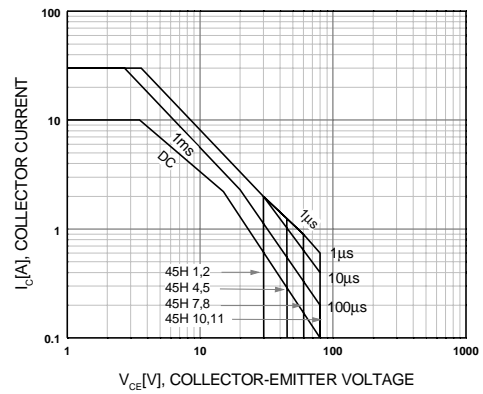


Figure 4. Safe Operating Area

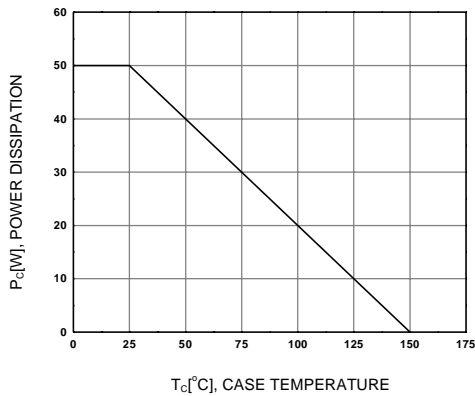
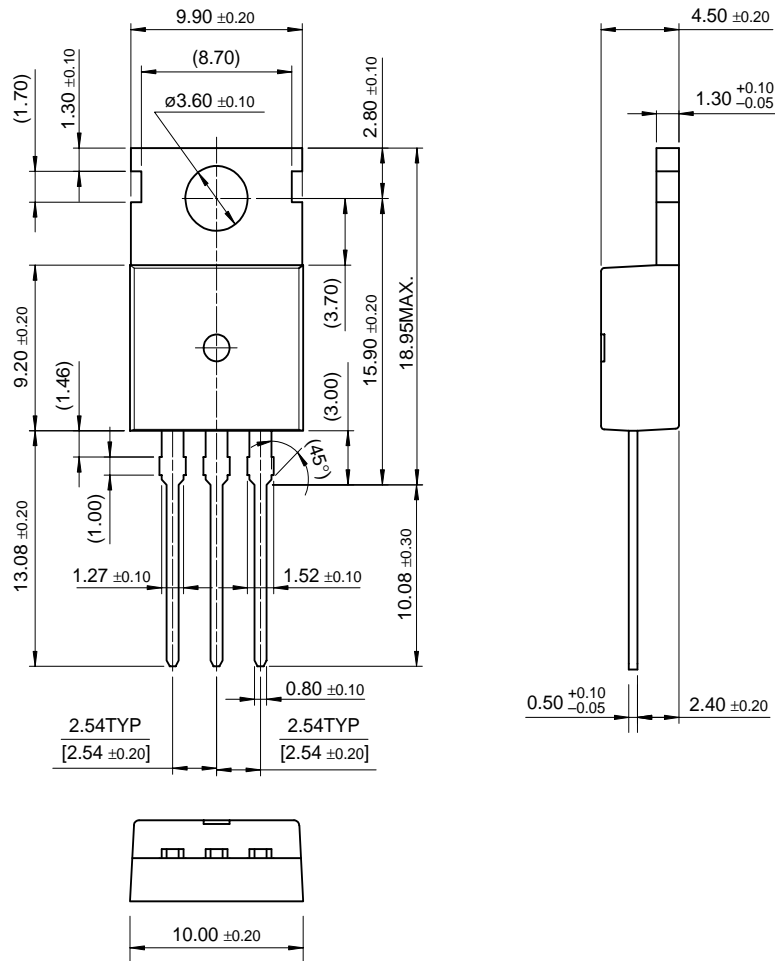


Figure 5. Power Derating

Package Dimensions

TO-220



Dimensions in Millimeters

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