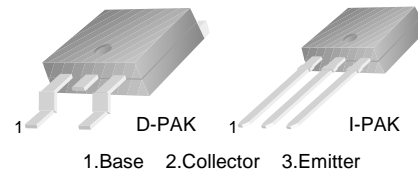


KSH200

NPN Epitaxial Silicon Transistor

Features

- D-PAK for Surface Mount Applications
- High DC Current Gain
- Lead Formed for Surface Mount Applications (No Suffix)
- Straight Lead (I-PAK, " - I " Suffix)



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

| Symbol | Parameter | Value | Units |
|-----------|--|------------|------------------|
| V_{CBO} | Collector-Base Voltage | 40 | V |
| V_{CEO} | Collector-Emitter Voltage | 25 | V |
| V_{EBO} | Emitter-Base Voltage | 8 | V |
| I_C | Collector Current (DC) | 5 | A |
| I_{CP} | Collector Current (Pulse) | 10 | A |
| I_B | Base Current | 1 | A |
| P_C | Collector Dissipation ($T_c = 25^\circ\text{C}$) | 12.5 | W |
| | Collector Dissipation ($T_a = 25^\circ\text{C}$) | 1.4 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -55 to 150 | $^\circ\text{C}$ |

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

| Symbol | Parameter | Conditions | Min. | Max. | Units |
|-----------------|--|---|------|------|-------|
| $BV_{CEO(sus)}$ | * Collector Emitter Sustaining Voltage | $I_C = 100\text{mA}$, $I_B = 0$ | 25 | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB} = 40\text{V}$, $I_E = 0$ | | 100 | nA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = 8\text{V}$, $I_C = 0$ | | 100 | nA |
| h_{FE} | * DC Current Gain | $V_{CE} = 1\text{V}$, $I_C = 500\text{mA}$ | 70 | | |
| | | $V_{CE} = 1\text{V}$, $I_C = 2\text{A}$ | 45 | 180 | |
| | | $V_{CE} = 2\text{V}$, $I_C = 5\text{A}$ | 10 | | |
| $V_{CE(sat)}$ | * Collector-Emitter Saturation Voltage | $I_C = 500\text{mA}$, $I_B = 50\text{mA}$ | | 0.3 | V |
| | | $I_C = 2\text{A}$, $I_B = 200\text{mA}$ | | 0.75 | V |
| | | $I_C = 5\text{A}$, $I_B = 1\text{A}$ | | 1.8 | V |
| $V_{BE(sat)}$ | * Base-Emitter Saturation Voltage | $I_C = 5\text{A}$, $I_B = 1\text{A}$ | | 2.5 | V |
| $V_{BE(on)}$ | * Base-Emitter On Voltage | $V_{CE} = 1\text{V}$, $I_C = 2\text{A}$ | | 1.6 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE} = 10\text{V}$, $I_C = 100\text{mA}$ | 65 | | MHz |
| C_{ob} | Output Capacitance | $V_{CB} = 10\text{V}$, $I_E = 0$, $f = 0.1\text{MHz}$ | | 80 | pF |

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

Typical Performance Characteristics

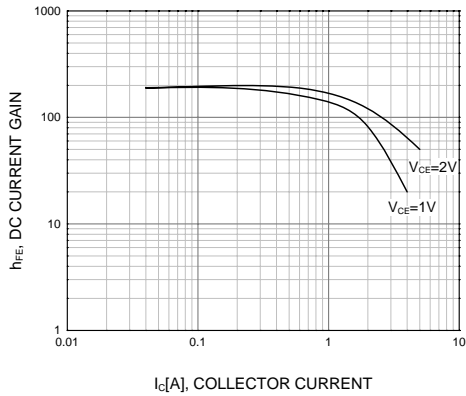


Figure 1. DC current Gain

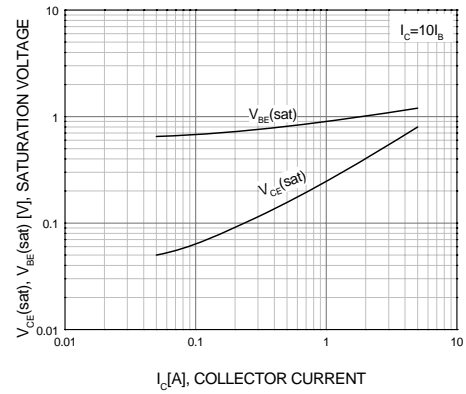


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

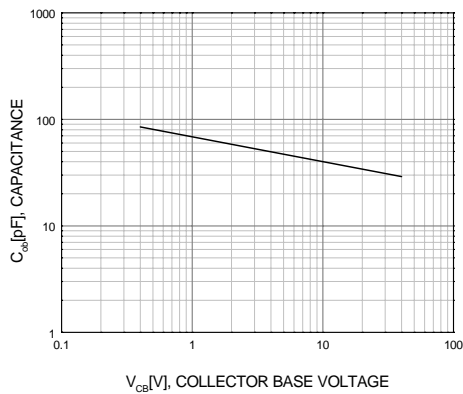


Figure 3. Collector Output Capacitance

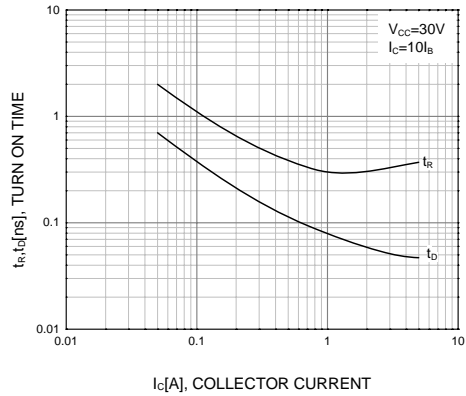


Figure 4. Turn On Time

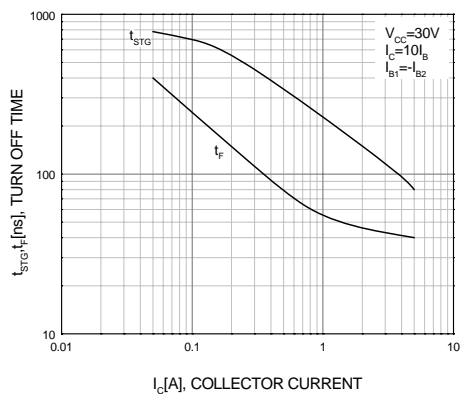


Figure 5. Turn Off Time

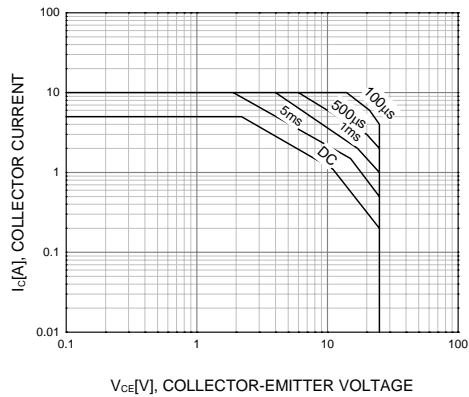


Figure 6. Safe Operating Area

Typical Performance Characteristics (Continued)

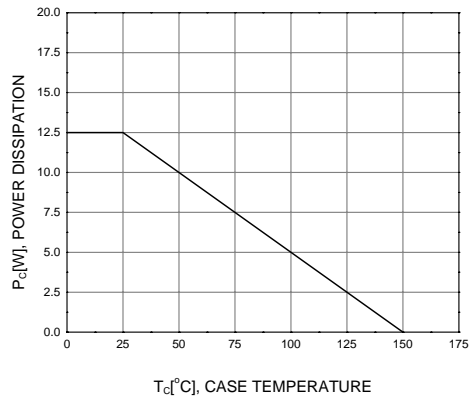
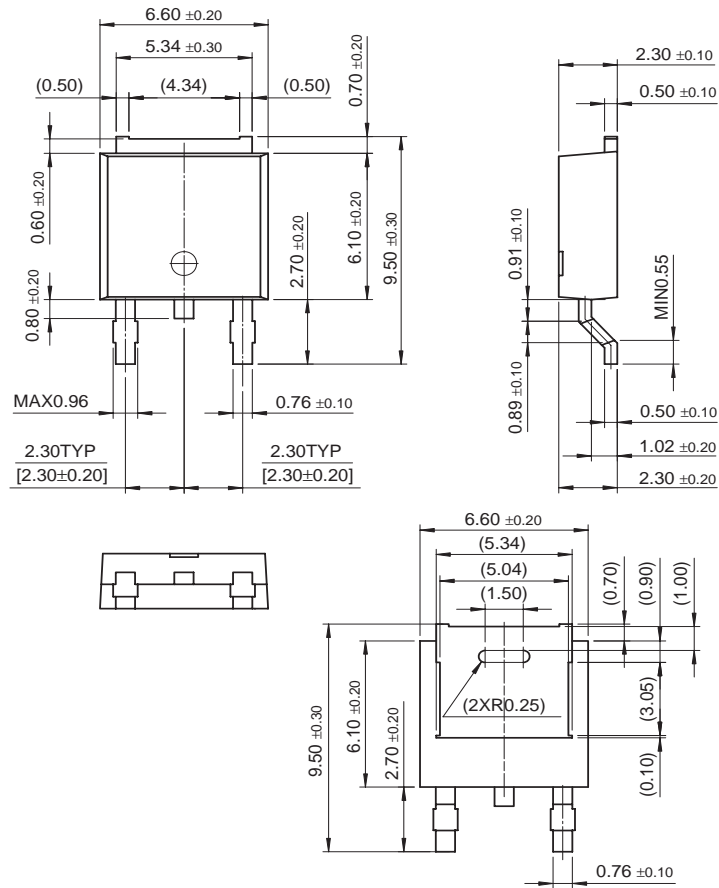


Figure 7. Power Derating

Physical Dimensions

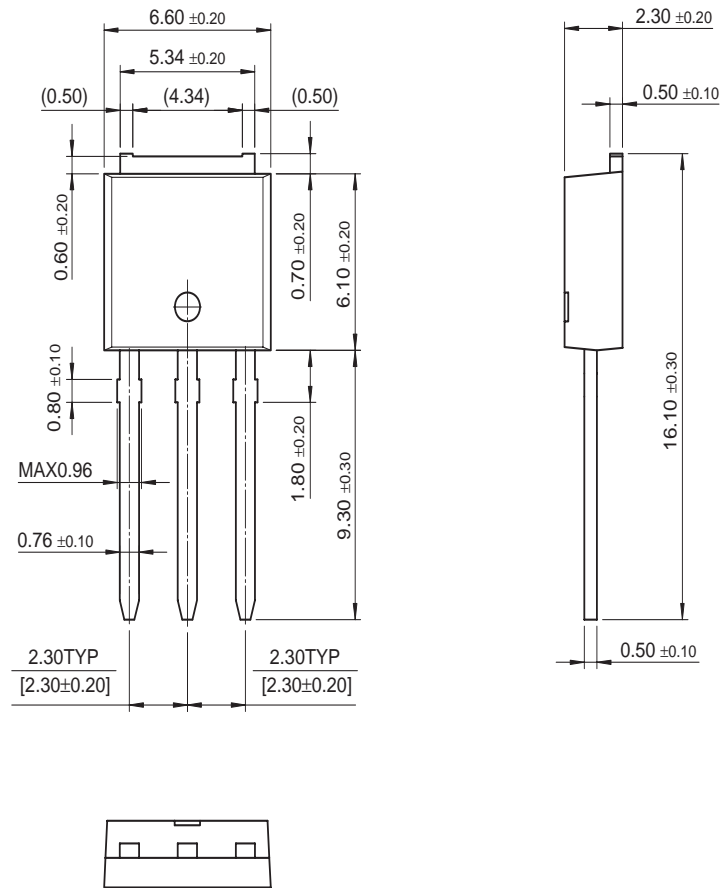
D-PAK



Dimensions in Millimeters

Physical Dimensions (Continued)

I-PAK



Dimensions in Millimeters





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