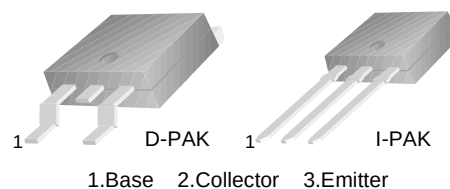


## KSH44H11

KSH44H11

### General Purpose Power and Switching Such as Output or Driver Stages in Applications D-PAK for Surface Mount Applications

- Lead Formed for Surface Mount Application (No Suffix)
- Straight Lead (I-PAK, "- I" Suffix)
- Electrically Similar to Popular KSE44H
- Fast Switching Speeds
- Low Collector Emitter Saturation Voltage



### 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                          | 80         | V                  |
| $V_{EBO}$ | Emitter-Base Voltage                               | 5          | V                  |
| $I_C$     | Collector Current (DC)                             | 8          | A                  |
| $I_{CP}$  | Collector-Current (Pulse)                          | 16         | A                  |
| $P_C$     | Collector Dissipation ( $T_C=25^{\circ}\text{C}$ ) | 20         | W                  |
|           | Collector Dissipation ( $T_a=25^{\circ}\text{C}$ ) | 1.75       | W                  |
| $T_J$     | Junction Temperature                               | 150        | $^{\circ}\text{C}$ |
| $T_{STG}$ | Storage Temperature                                | - 65 ~ 150 | $^{\circ}\text{C}$ |

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

| Symbol         | Parameter                              | Test Condition                                                                       | Min.     | Typ. | Max. | Units         |
|----------------|----------------------------------------|--------------------------------------------------------------------------------------|----------|------|------|---------------|
| $V_{CEO(sus)}$ | * Collector-Emitter Sustaining Voltage | $I_C = 30\text{mA}$ , $I_B = 0$                                                      | 80       |      |      | V             |
| $I_{CEO}$      | Collector Cut-off Current              | $V_{CE} = 80\text{V}$ , $I_B = 0$                                                    |          |      | 10   | $\mu\text{A}$ |
| $I_{EBO}$      | Emitter Cut-off Current                | $V_{BE} = 5\text{V}$ , $I_C = 0$                                                     |          |      | 50   | $\mu\text{A}$ |
| $h_{FE}$       | DC Current Gain                        | $V_{CE} = 1\text{V}$ , $I_C = 2\text{A}$<br>$V_{CE} = 1\text{V}$ , $I_C = 4\text{A}$ | 60<br>40 |      |      |               |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage   | $I_C = 8\text{A}$ , $I_B = 0.4\text{A}$                                              |          |      | 1    | V             |
| $V_{BE(on)}$   | Base-Emitter On Voltage                | $I_C = 8\text{A}$ , $I_B = 0.8\text{A}$                                              |          |      | 1.5  | V             |
| $f_T$          | Current Gain Bandwidth Product         | $V_{CE} = 10\text{V}$ , $I_C = 0.5\text{A}$                                          |          | 50   |      | MHz           |
| $C_{ob}$       | Output Capacitance                     | $V_{CB} = 10\text{V}$ , $f = 1\text{MHz}$                                            |          | 130  |      | pF            |
| $t_{ON}$       | Turn On Time                           | $I_C = 5\text{A}$<br>$I_{B1} = - I_{B2} = 0.5\text{A}$                               |          | 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

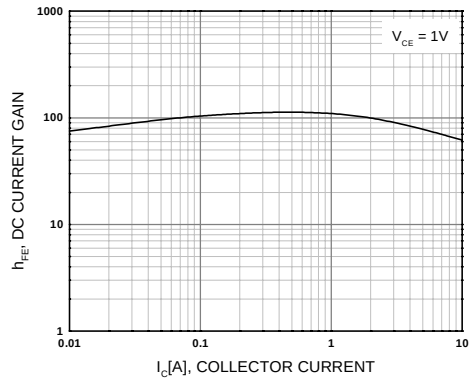


Figure 1. DC current Gain

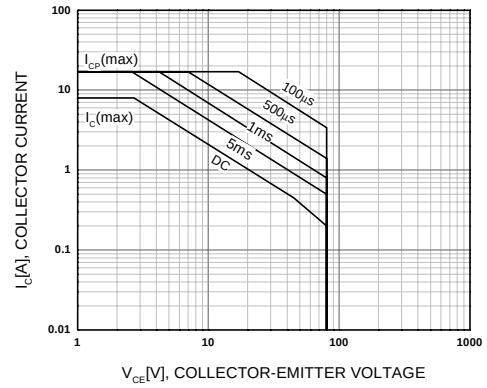


Figure 2. Safe Operating Area

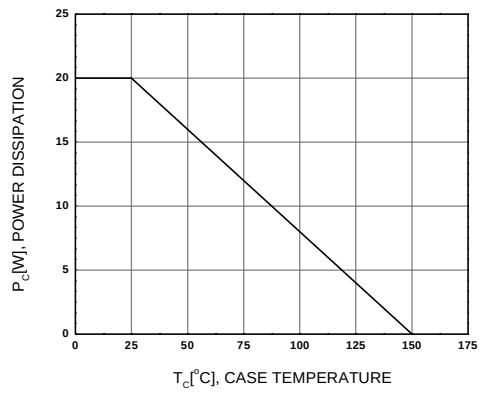
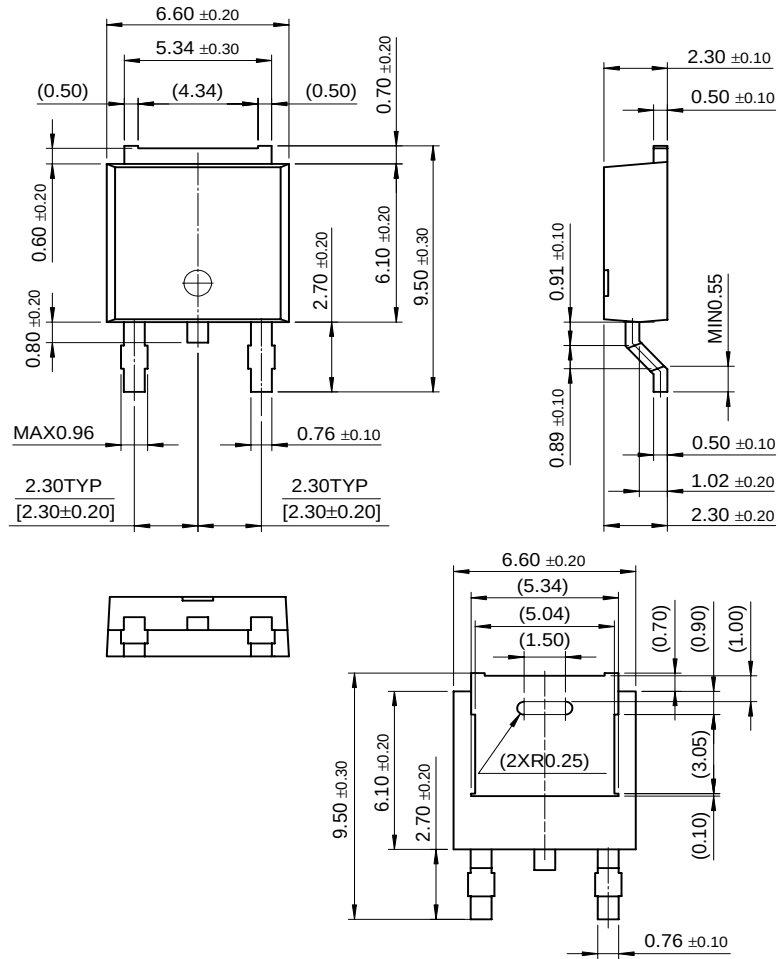


Figure 3. Power Derating

# Package Dimensions

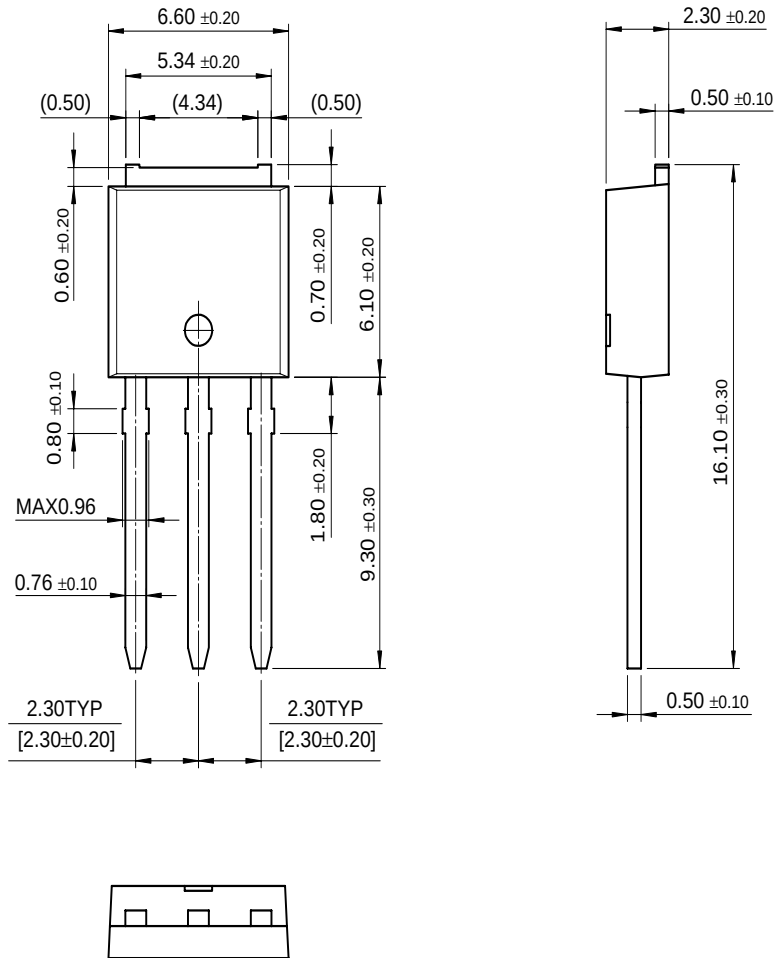
## D-PAK



Dimensions in Millimeters

# Package Dimensions (Continued)

## I-PAK



Dimensions in Millimeters

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