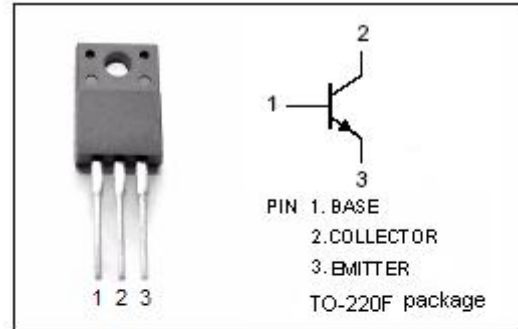


**isc Silicon NPN Power Transistors**
**KSD1406**
**DESCRIPTION**

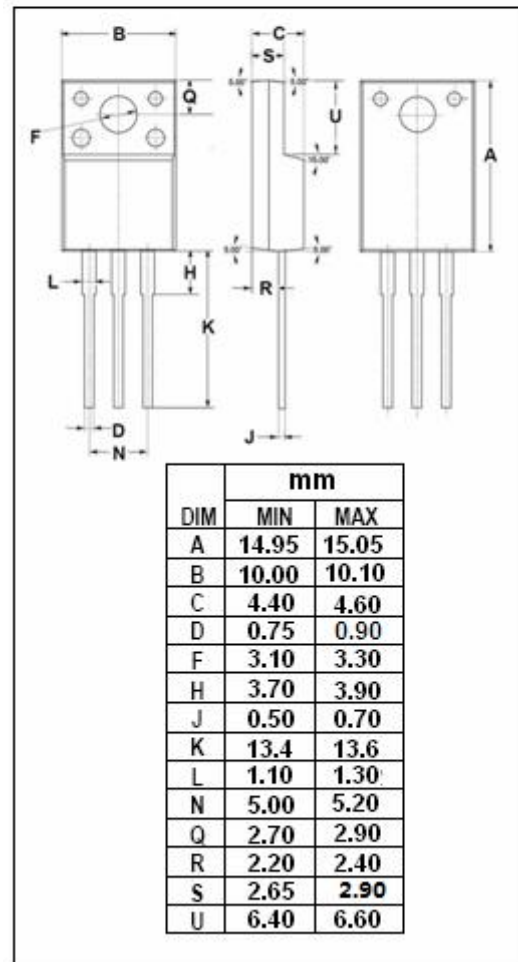
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 60V(\text{Min})$
- Collector Current- $I_C = 3A(\text{Max.})$
- Low Collector Saturation Voltage
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Low frequency power amplifier


**ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

| SYMBOL    | PARAMETER   | VALUE   | UNIT             |
|-----------|---|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                              | 60      | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                           | 60      | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                | 7       | V                |
| $I_C$     | Collector Current-Continuous                        | 3       | A                |
| $I_B$     | Base Current-Continuous                             | 0.5     | A                |
| $P_T$     | Total Power Dissipation<br>@ $T_C=25^\circ\text{C}$ | 25      | W                |
| $T_J$     | Junction Temperature                                | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                           | -55~150 | $^\circ\text{C}$ |


**THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                            | MAX | UNIT               |
|---------------|--------------------------------------|-----|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 5   | $^\circ\text{C/W}$ |

**ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL         | PARAMETER                            | CONDITIONS                          | MIN | TYP. | MAX | UNIT          |
|----------------|--------------------------------------|-------------------------------------|-----|------|-----|---------------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=50\text{mA}; I_B=0$            | 60  |      |     | V             |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage | $I_C=3\text{A}; I_B=0.3\text{A}$    |     |      | 1.0 | V             |
| $V_{BE(On)}$   | Base-Emitter On Voltage              | $I_C=0.5\text{A}; V_{CE}=5\text{V}$ |     |      | 1.0 | V             |
| $I_{CBO}$      | Collector Cutoff Current             | At rated Voltage                    |     |      | 10  | $\mu\text{A}$ |
| $I_{CEO}$      | Collector Cutoff Current             | At rated Voltage                    |     |      | 10  | $\mu\text{A}$ |
| $I_{EBO}$      | Emitter Cutoff Current               | At rated Voltage                    |     |      | 10  | $\mu\text{A}$ |
| $h_{FE-1}$     | DC Current Gain                      | $I_C=0.5\text{A}; V_{CE}=5\text{V}$ | 60  |      | 320 |               |
| $h_{FE-2}$     | DC Current Gain                      | $I_C=3\text{A}; V_{CE}=5\text{V}$   | 20  |      |     |               |
| $f_T$          | Current-Gain—Bandwidth Product       | $I_C=0.5\text{A}; V_{CE}=5\text{V}$ |     | 3    |     | MHz           |

◆  **$h_{FE-1}$  Classifications**

| O      | Y       | G       |
|--------|---------|---------|
| 60-120 | 100-200 | 150-300 |

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