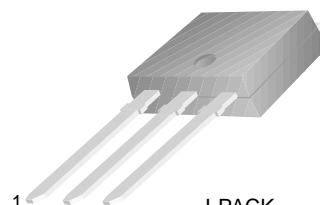


**Power Amplifier Applications**

- Low Collector-Emitter Saturation Voltage
- Complement to KSA 1241



I-PACK  
1. Base 2. Collector 3. Emitter

**NPN Epitaxial Silicon Transistor**

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

| Symbol    | Parameter  | Value      | Units            |
|-----------|--|------------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                           | 50         | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                        | 50         | V                |
| $V_{EBO}$ | Emitter-Base Voltage                             | 5          | V                |
| $I_C$     | Collector Current                                | 2          | A                |
| $I_B$     | Base Current                                     | 1          | A                |
| $P_C$     | Collector Dissipation ( $T_a=25^\circ\text{C}$ ) | 1          | W                |
| $P_C$     | Collector Dissipation ( $T_C=25^\circ\text{C}$ ) | 10         | 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

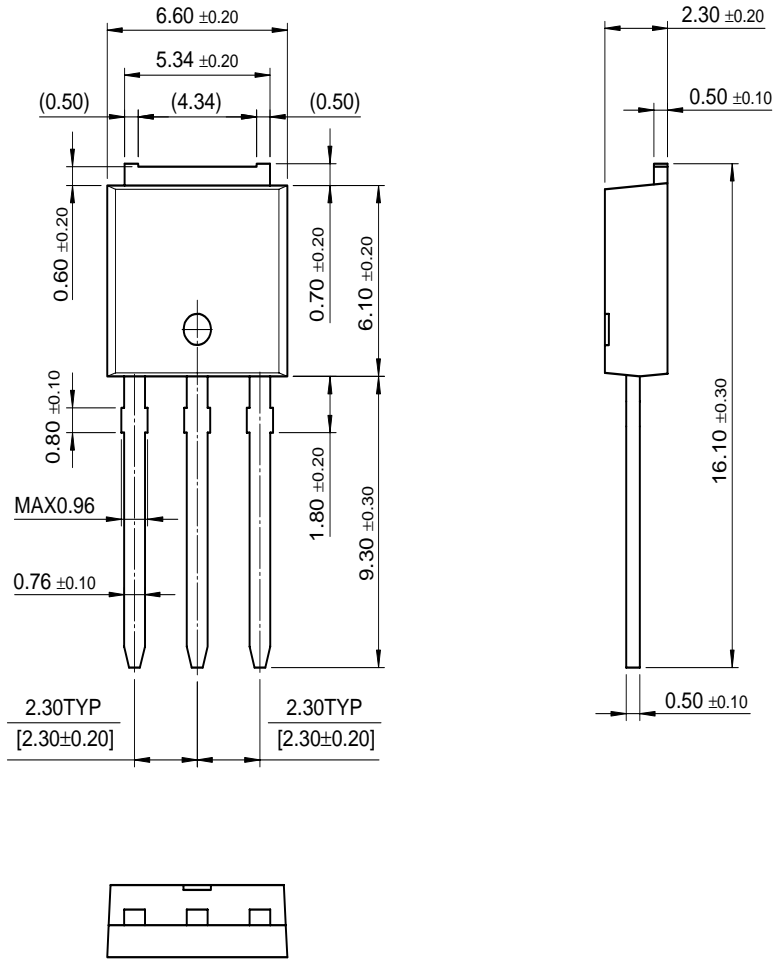
| Symbol                 | Parameter                            | Test Condition   | Min.     | Typ. | Max. | Units         |
|------------------------|--------------------------------------|--|----------|------|------|---------------|
| $BV_{CEO}$             | Collector-Emitter Breakdown Voltage  | $I_C = 10\text{mA}, I_B = 0$   | 50       |      |      | V             |
| $I_{CBO}$              | Collector Cut-off Current            | $V_{CB} = 50\text{V}, I_E = 0$   |          |      | 1    | $\mu\text{A}$ |
| $I_{EBO}$              | Emitter Cut-off Current              | $V_{EB} = 5\text{V}, I_C = 0$  |          |      | 1    | $\mu\text{A}$ |
| $h_{FE1}$<br>$h_{FE2}$ | DC Current Gain                      | $V_{CE} = 2\text{V}, I_C = 0.5\text{A}$<br>$V_{CE} = 2\text{V}, I_C = 1.5\text{A}$ | 70<br>40 |      | 240  |               |
| $V_{CE(sat)}$          | Collector-Emitter Saturation Voltage | $I_C = 1\text{A}, I_B = 0.05\text{A}$  |          |      | 0.5  | V             |
| $V_{BE(sat)}$          | Base-Emitter Saturation Voltage      | $I_C = 1\text{A}, I_B = 0.05\text{A}$  |          |      | 1.2  | V             |
| $f_T$                  | Current Gain Bandwidth Product       | $V_{CE} = 2\text{V}, I_C = 0.5\text{A}$  |          | 100  |      | MHz           |
| $C_{ob}$               | Output Capacitance                   | $V_{CB} = 10\text{V}, f = 1\text{MHz}$   |          | 30   |      | pF            |
| $t_{ON}$               | Turn ON Time                         | $V_{CC} = 30\text{V}, I_C = 1\text{A}$   |          | 0.1  |      | $\mu\text{s}$ |
| $t_{STG}$              | Storage Time                         | $I_{B1} = -I_{B2} = 0.05\text{A}$  |          | 1    |      | $\mu\text{s}$ |
| $t_F$                  | Fall Time                            | $R_L = 30\Omega$   |          | 0.1  |      | $\mu\text{s}$ |

**$h_{FE1}$  Classification**

| Classification | O        | Y         |
|----------------|----------|-----------|
| $h_{FE1}$      | 70 ~ 140 | 120 ~ 240 |

# Package Dimensions

## I-PAK



Dimensions in Millimeters

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|----------------------|---------------|-------------|
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| CROSSVOLT™           | POP™          | UHC™        |
| E <sup>2</sup> CMOS™ | PowerTrench®  | VCX™        |
| FACT™                | QFET™         |             |
| FACT Quiet Series™   | QS™           |             |
| FAST®                | Quiet Series™ |             |
| FASTr™               | SuperSOT™-3   |             |
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