

**isc Silicon NPN Power Transistor**

**KSC5337**

**DESCRIPTION**

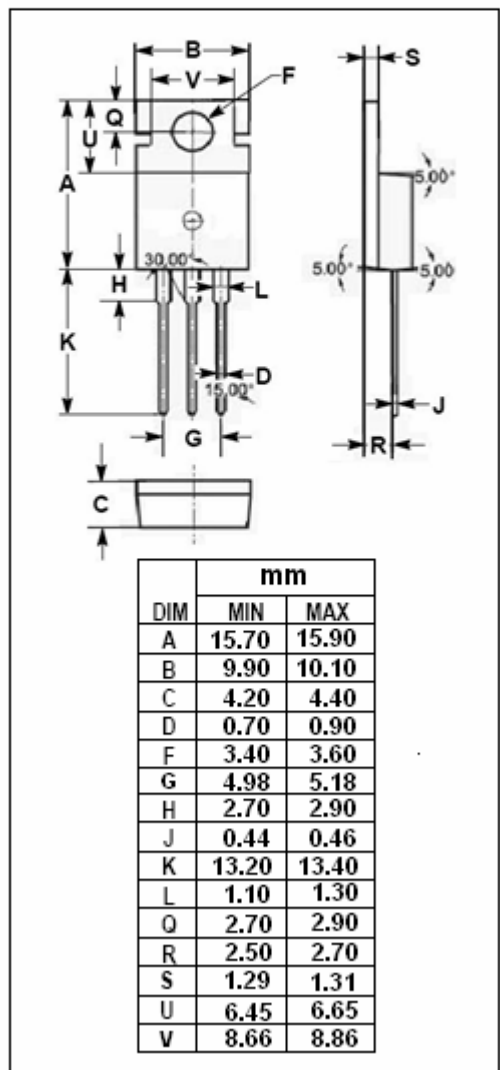
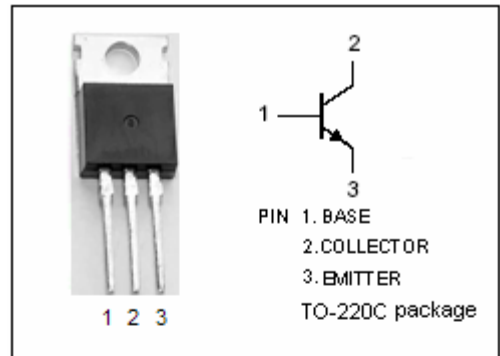
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 400V(\text{Min})$
- High Switching Speed
- Wide Area of Safe Operation

**APPLICATIONS**

- Designed for switching regulator and general purpose applications.

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

| SYMBOL    | PARAMETER   | VALUE   | UNIT             |
|-----------|---|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                  | 700     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                               | 400     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                    | 9       | V                |
| $I_C$     | Collector Current-Continuous                            | 8       | A                |
| $I_{CM}$  | Collector Current-Peak                                  | 15      | A                |
| $I_B$     | Base Current-Continuous                                 | 2       | A                |
| $I_{BM}$  | Base Current-Peak                                       | 4       | A                |
| $P_C$     | Collector Power Dissipation<br>@ $T_C=25^\circ\text{C}$ | 100     | W                |
| $T_J$     | Junction Temperature                                    | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                               | -65~150 | $^\circ\text{C}$ |



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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL          | PARAMETER                            | CONDITIONS  | MIN  | TYP. | MAX  | UNIT          |
|-----------------|--------------------------------------|---|------|------|------|---------------|
| $V_{(BR)CBO}$   | Collector-Base Breakdown Voltage     | $I_C=1\text{mA}; I_E=0$                                   | 7000 |      |      | V             |
| $V_{(BR)CEO}$   | Collector-Emitter Breakdown Voltage  | $I_C=5\text{mA}; I_B=0$                                   | 400  |      |      | V             |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C=1.3\text{A}; I_B=0.13\text{A}$                       |      |      | 0.5  | V             |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C=3\text{A}; I_B=0.6\text{A}$                          |      |      | 0.7  | V             |
| $V_{BE(sat)-1}$ | Base-Emitter Saturation Voltage      | $I_C=1.3\text{A}; I_B=0.13\text{A}$                       |      |      | 1.1  | V             |
| $V_{BE(sat)-2}$ | Base-Emitter Saturation Voltage      | $I_C=3\text{A}; I_B=0.6\text{A}$                          |      |      | 1.25 | V             |
| $I_{CBO}$       | Collector Cutoff Current             | $V_{CB}=700\text{V}; R_{BE}=0; I_B=0$                     |      |      | 100  | $\mu\text{A}$ |
| $I_{EBO}$       | Emitter Cutoff Current               | $V_{EB}=9\text{V}; I_C=0$                                 |      |      | 10   | $\mu\text{A}$ |
| $h_{FE-1}$      | DC Current Gain                      | $I_C=0.5\text{A}; V_{CE}=5\text{V}$                       | 15   |      | 40   |               |
| $h_{FE-2}$      | DC Current Gain                      | $I_C=3\text{A}; V_{CE}=1\text{V}$                         | 6    |      |      |               |
| $C_{OB}$        | Output Capacitance                   | $I_E=0; V_{CB}=10\text{V}; f_{\text{test}}=0.1\text{MHz}$ |      | 70   |      | pF            |
| $f_T$           | Current-Gain—Bandwidth Product       | $I_C=0.1\text{A}; V_{CE}=6\text{V}$                       |      | 14   |      | MHz           |

## Switching Times

|          |              |   |  |  |     |               |
|----------|--------------|---|--|--|-----|---------------|
| $t_{on}$ | Turn-On Time | $I_C=1\text{A}; I_{B1}=-I_{B2}=0.2\text{A}; V_{CC}=125\text{V}$ |  |  | 0.2 | $\mu\text{s}$ |
| $t_s$    | Storage Time |   |  |  | 2.0 | $\mu\text{s}$ |
| $t_f$    | Fall Time    |   |  |  | 0.5 | $\mu\text{s}$ |