

isc Silicon NPN Power Transistor

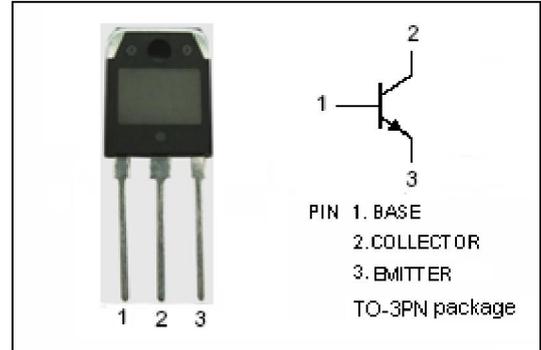
2SC3552

DESCRIPTION

- High Breakdown Voltage
- High Switching Speed
- Wide Area of Safe Operation

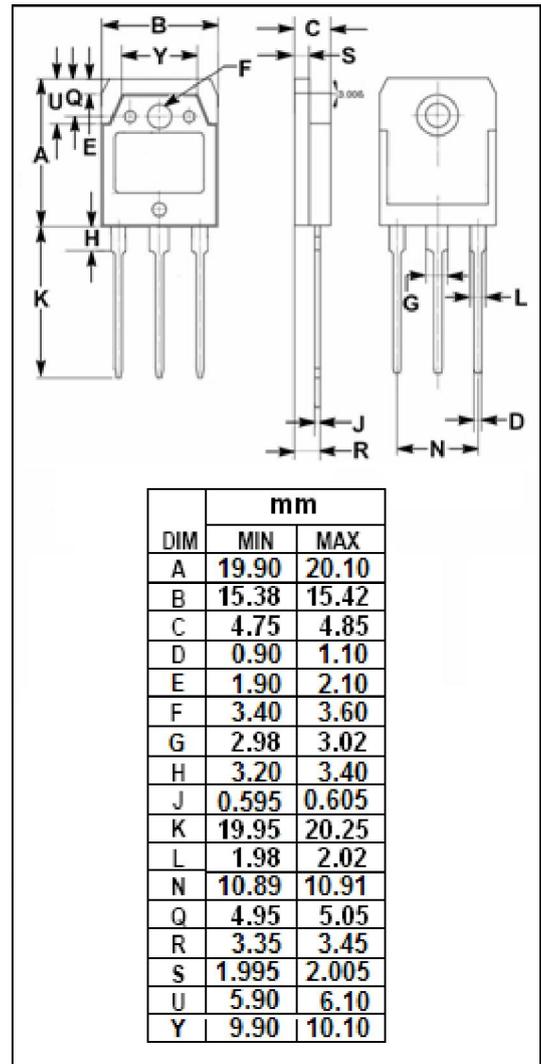
APPLICATIONS

- Designed for switching regulator applications.



ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)

| SYMBOL           | PARAMETER  | VALUE   | UNIT |
|------------------|--|---------|------|
| V <sub>CBO</sub> | Collector-Base Voltage                             | 1100    | V    |
| V <sub>CEO</sub> | Collector-Emitter Voltage                          | 800     | V    |
| V <sub>EBO</sub> | Emitter-Base Voltage                               | 7       | V    |
| I <sub>C</sub>   | Collector Current- Continuous                      | 12      | A    |
| I <sub>CM</sub>  | Collector Current-Peak                             | 30      | A    |
| I <sub>B</sub>   | Base Current- Continuous                           | 6       | A    |
| P <sub>C</sub>   | Collector Power Dissipation @ T <sub>C</sub> =25°C | 150     | W    |
| T <sub>J</sub>   | Junction Temperature                               | 150     | °C   |
| T <sub>stg</sub> | Storage Temperature Range                          | -55~150 | °C   |



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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL        | PARAMETER                            | CONDITIONS   | MIN  | TYP. | MAX | UNIT          |
|---------------|--------------------------------------|--|------|------|-----|---------------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage  | $I_C=5\text{mA}; R_{BE}=\infty$                    | 800  |      |     | V             |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage       | $I_E=1\text{mA}; I_C=0$                            | 7    |      |     | V             |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage     | $I_C=1\text{mA}; I_E=0$                            | 1100 |      |     | V             |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=6\text{A}; I_B=1.2\text{A}$                   |      |      | 2.0 | V             |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C=6\text{A}; I_B=1.2\text{A}$                   |      |      | 1.5 | V             |
| $I_{CBO}$     | Collector Cutoff Current             | $V_{CB}=800\text{V}; I_E=0$                        |      |      | 10  | $\mu\text{A}$ |
| $I_{EBO}$     | Emitter Cutoff Current               | $V_{EB}=5\text{V}; I_C=0$                          |      |      | 10  | $\mu\text{A}$ |
| $h_{FE-1}$    | DC Current Gain                      | $I_C=0.8\text{A}; V_{CE}=5\text{V}$                | 10   |      | 40  |               |
| $h_{FE-2}$    | DC Current Gain                      | $I_C=4\text{A}; V_{CE}=5\text{V}$                  | 8    |      |     |               |
| $C_{OB}$      | Output Capacitance                   | $I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$ |      | 215  |     | pF            |
| $f_T$         | Current-Gain—Bandwidth Product       | $I_C=0.8\text{A}; V_{CE}=10\text{V}$               |      | 15   |     | MHz           |

## Switching Times

|           |              |   |  |  |     |               |
|-----------|--------------|---|--|--|-----|---------------|
| $t_{on}$  | Turn-on Time | $I_C=8\text{A}; I_{B1}=1.6\text{A}; I_{B2}=-3.2\text{A}$<br>$R_L=500\Omega; V_{CC}=400\text{V}$ |  |  | 0.5 | $\mu\text{s}$ |
| $t_{stg}$ | Storage Time |   |  |  | 3.0 | $\mu\text{s}$ |
| $t_f$     | Fall Time    |   |  |  | 0.3 | $\mu\text{s}$ |

◆  $h_{FE-1}$  Classifications

| K     | L     | M     |
|-------|-------|-------|
| 10-20 | 15-30 | 20-40 |