

isc Silicon NPN Power Transistors

2SC3590

**DESCRIPTION**

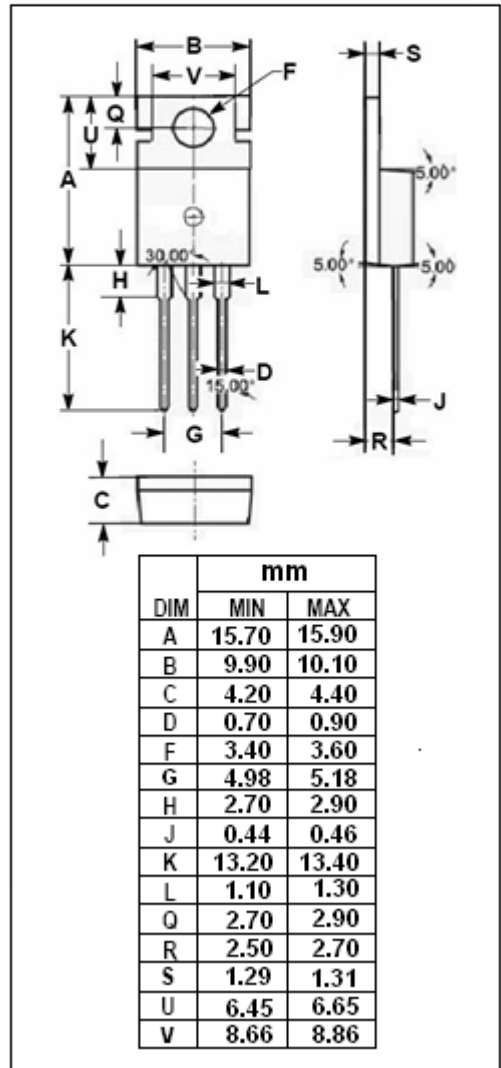
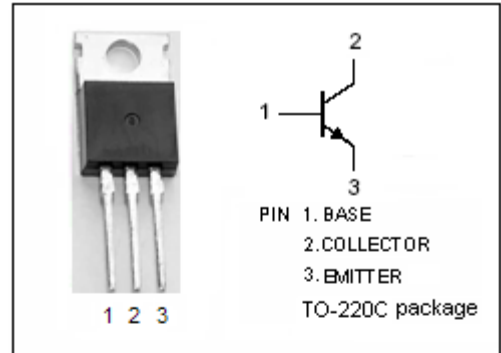
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 150V(\text{Min})$
- Fast Switching Speed
- Low Saturation Voltage

**APPLICATIONS**

- Designed for high definition CRT display horizontal deflection output applications.

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

| SYMBOL    | PARAMETER   | VALUE   | UNIT             |
|-----------|---|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                              | 330     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                           | 150     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                | 6       | V                |
| $I_C$     | Collector Current-Continuous                        | 7       | A                |
| $I_{CM}$  | Collector Current-Peak                              | 12      | A                |
| $I_B$     | Base Current-Continuous                             | 4       | A                |
| $P_T$     | Total Power Dissipation<br>@ $T_C=25^\circ\text{C}$ | 50      | W                |
| $T_J$     | Junction Temperature                                | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                           | -55~150 | $^\circ\text{C}$ |



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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     | $I_C=1\text{mA}; I_E=0$                     | 330 |      |     | V             |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage  | $I_C=1\text{mA}; R_{BE}=\infty$             | 150 |      |     | V             |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage       | $I_E=1\text{mA}; I_C=0$                     | 6   |      |     | V             |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=5\text{A}; I_B=0.5\text{A}$            |     |      | 0.8 | V             |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C=5\text{A}; I_B=0.5\text{A}$            |     |      | 1.5 | V             |
| $I_{CBO}$     | Collector Cutoff Current             | $V_{CB}=180\text{V}; I_E=0$                 |     |      | 100 | $\mu\text{A}$ |
| $I_{EBO}$     | Emitter Cutoff Current               | $V_{EB}=5\text{V}; I_C=0$                   |     |      | 100 | $\mu\text{A}$ |
| $h_{FE-1}$    | DC Current Gain                      | $I_C=1\text{A}; V_{CE}=1\text{V}$           | 15  |      |     |               |
| $h_{FE-2}$    | DC Current Gain                      | $I_C=5\text{A}; V_{CE}=1\text{V}$           | 10  |      | 50  |               |
| $f_T$         | Current-Gain—Bandwidth Product       | $I_C=0.5\text{A}; V_{CE}=10\text{V}$        |     | 40   |     | MHz           |
| $t_f$         | Fall Time                            | $I_C=5\text{A}; I_{B1}=-I_{B2}=0.5\text{A}$ |     |      | 0.3 | $\mu\text{s}$ |