



isc Silicon NPN Power Transistor

2SD1959

DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)}= 650V$  (Min)
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

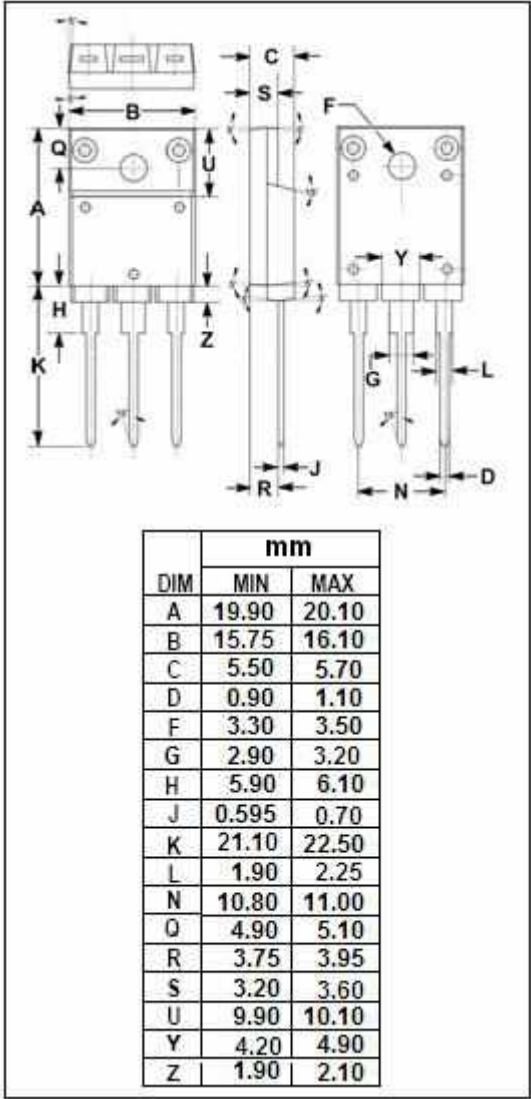
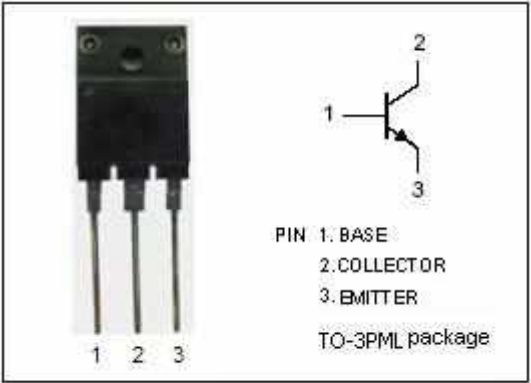
APPLICATIONS

- Designed for use in horizontal deflection circuits of color TV receivers.

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

| SYMBOL    | PARAMETER                                          | VALUE   | UNIT        |
|-----------|----------------------------------------------------|---------|-------------|
| $V_{CBO}$ | Collector-Base Voltage                             | 1400    | V           |
| $V_{CEO}$ | Collector-Emitter Voltage                          | 650     | V           |
| $V_{EBO}$ | Emitter-Base Voltage                               | 6       | V           |
| $I_C$     | Collector Current- Continuous                      | 10      | A           |
| $I_{CM}$  | Collector Current-Peak                             | 20      | A           |
| $I_B$     | Base Current- Continuous                           | 5       | A           |
| $I_{BM}$  | Base Current-Peak                                  | 8       | A           |
| $P_C$     | Collector Power Dissipation<br>@ $T_c=25^{\circ}C$ | 50      | W           |
| $T_J$     | Junction Temperature                               | 150     | $^{\circ}C$ |
| $T_{stg}$ | Storage Temperature Range                          | -65~150 | $^{\circ}C$ |

| SYMBOL        | PARAMETER                            | MAX | UNIT          |
|---------------|--------------------------------------|-----|---------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 2.8 | $^{\circ}C/W$ |



**isc Silicon NPN Power Transistor****2SD1959****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

| SYMBOL                | PARAMETER                            | CONDITIONS                                                                                                            | MIN | TYP. | MAX        | UNIT |
|-----------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----|------|------------|------|
| V <sub>CEO(SUS)</sub> | Collector-Emitter Sustaining Voltage | I <sub>C</sub> = 30mA ; I <sub>B</sub> = 0                                                                            | 650 |      |            | V    |
| V <sub>(BR)EBO</sub>  | Emitter-Base Breakdown Voltage       | I <sub>E</sub> = 1mA; I <sub>C</sub> = 0                                                                              | 6   |      |            | V    |
| V <sub>CE(sat)</sub>  | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 6A; I <sub>B</sub> = 1.2A                                                                            |     |      | 5.0        | V    |
| V <sub>BE(sat)</sub>  | Base-Emitter Saturation Voltage      | I <sub>C</sub> = 6A; I <sub>B</sub> = 1.2A                                                                            |     |      | 1.1        | V    |
| I <sub>CES</sub>      | Collector Cutoff Current             | V <sub>CE</sub> = 1500V ; V <sub>BE</sub> = 0<br>V <sub>CE</sub> = 1500V ; V <sub>BE</sub> = 0; T <sub>C</sub> =125°C |     |      | 1.0<br>2.0 | mA   |
| I <sub>EBO</sub>      | Emitter Cutoff Current               | V <sub>EB</sub> = 6V ; I <sub>C</sub> = 0                                                                             |     |      | 0.1        | mA   |
| h <sub>FE-1</sub>     | DC Current Gain                      | I <sub>C</sub> = 1A ; V <sub>CE</sub> = 5V                                                                            | 10  |      | 30         |      |
| h <sub>FE-2</sub>     | DC Current Gain                      | I <sub>C</sub> = 6A ; V <sub>CE</sub> = 5V                                                                            | 5   |      | 9.5        |      |
| C <sub>OB</sub>       | Output Capacitance                   | I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f <sub>test</sub> = 1MHz                                                   |     | 200  |            | pF   |
| t <sub>f</sub>        | Fall Time                            | I <sub>C</sub> = 6A; I <sub>B1</sub> = I <sub>B2</sub> = 1.2A;                                                        |     |      | 1.0        | μ s  |