

**isc Silicon NPN Power Transistor**

**2SC3258**

**DESCRIPTION**

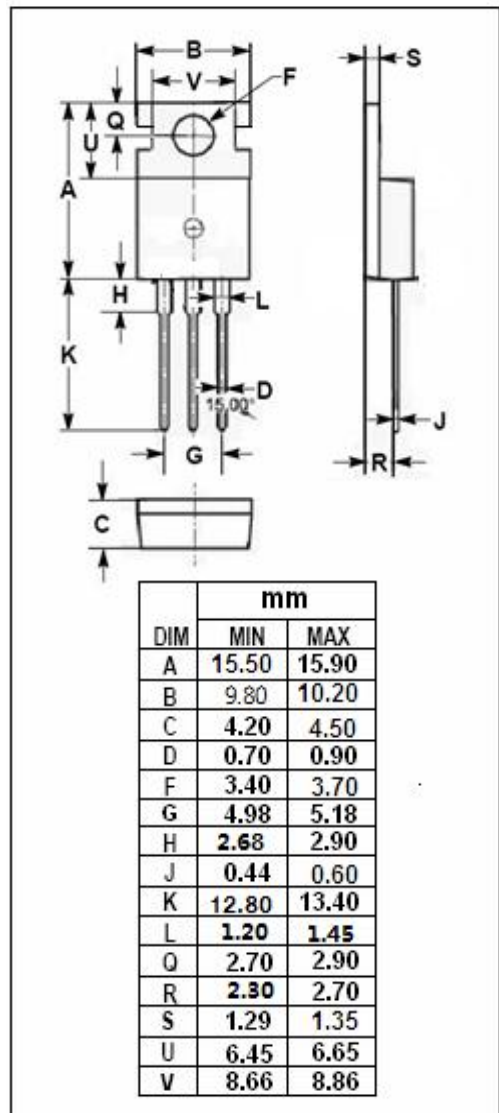
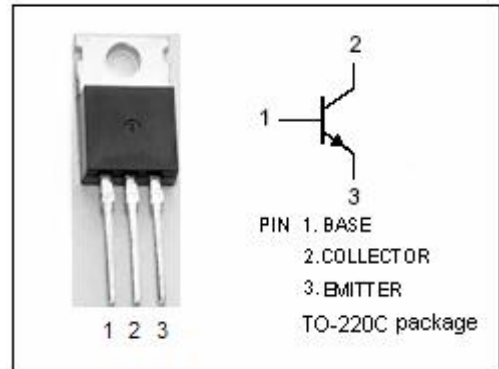
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 0.4V(\text{Max.}) @ I_C = 3A$
- High Switching Speed
- Complement to Type 2SA1293
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Designed for high current switching applications.

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

| SYMBOL    | PARAMETER   | VALUE   | UNIT             |
|-----------|---|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                  | 100     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                               | 80      | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                    | 7       | V                |
| $I_C$     | Collector Current-Continuous                            | 5       | A                |
| $I_{CM}$  | Collector Current-Peak                                  | 8       | A                |
| $I_B$     | Base Current-Continuous                                 | 1       | A                |
| $P_C$     | Collector Power Dissipation<br>@ $T_C=25^\circ\text{C}$ | 30      | 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          |
|---------------|--------------------------------------|--|-----|------|-----|---------------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage  | $I_C=10\text{mA}; I_B=0$                           | 80  |      |     | V             |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=3\text{A}; I_B=0.15\text{A}$                  |     |      | 0.4 | V             |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C=3\text{A}; I_B=0.15\text{A}$                  |     |      | 1.2 | V             |
| $I_{CBO}$     | Collector Cutoff Current             | $V_{CB}=100\text{V}; I_E=0$                        |     |      | 1.0 | $\mu\text{A}$ |
| $I_{EBO}$     | Emitter Cutoff Current               | $V_{EB}=7\text{V}; I_C=0$                          |     |      | 1.0 | $\mu\text{A}$ |
| $h_{FE-1}$    | DC Current Gain                      | $I_C=1\text{A}; V_{CE}=1\text{V}$                  | 70  |      | 240 |               |
| $h_{FE-2}$    | DC Current Gain                      | $I_C=3\text{A}; V_{CE}=1\text{V}$                  | 40  |      |     |               |
| $f_T$         | Current-Gain—Bandwidth Product       | $I_C=1\text{A}; V_{CE}=4\text{V}$                  |     | 120  |     | MHz           |
| $C_{OB}$      | Output Capacitance                   | $I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$ |     | 80   |     | pF            |

## Switching times

|           |              |  |  |     |  |               |
|-----------|--------------|--|--|-----|--|---------------|
| $t_{on}$  | Turn-On Time |  |  | 0.2 |  | $\mu\text{s}$ |
| $t_{stg}$ | Storage Time | $I_{B1}=-I_{B2}=0.15\text{A}; R_L=10\Omega;$<br>$V_{CC}\approx 30\text{V}$ |  | 1.0 |  | $\mu\text{s}$ |
| $t_f$     | Fall Time    |  |  | 0.1 |  | $\mu\text{s}$ |

**◆  $h_{FE-1}$  Classifications**

| O      | Y       |
|--------|---------|
| 70-140 | 120-240 |

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