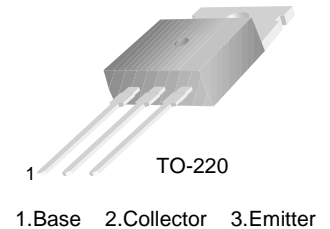


**■■ APPLICATION:** Low Voltage Large Current Drivers Applications.

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

| PARAMETER                   | SYMBOL    | RATING   | UNIT             |
|-----------------------------|-----------|----------|------------------|
| Collector-base voltage      | $V_{CBO}$ | 40       | V                |
| Collector-emitter voltage   | $V_{CEO}$ | 30       | V                |
| Emitter-base voltage        | $V_{EBO}$ | 5        | V                |
| Collector current           | $I_c$     | 3        | A                |
| Collector Power Dissipation | $P_c$     | 1~10     | W                |
| Junction Temperature        | $T_J$     | 150      | $^\circ\text{C}$ |
| Storage Temperature Range   | $T_{stg}$ | - 55~150 | $^\circ\text{C}$ |


**■■ ELECTRICAL CHARACTERISTICS**

 ( $T_a=25^\circ\text{C}$ )

| PARAMETER                            | SYMBOL        | MIN. | TYP. | MAX. | UNIT          | TEST CONDITION                                  |
|--------------------------------------|---------------|------|------|------|---------------|---|
| DC Current Gain                      | $h_{FE}$      | 60   |      | 400  |               | $V_{CE}=2\text{V}$ , $I_c=1\text{A}$            |
| Collector Cut-off Current            | $I_{CBO}$     |      |      | 1    | $\mu\text{A}$ | $V_{CB}=30\text{V}$ , $I_E=0$                   |
| Emitter Cut-off Current              | $I_{EBO}$     |      |      | 1    | $\mu\text{A}$ | $V_{EB}=3\text{V}$ , $I_c=0$                    |
| Collector-Base Breakdown Voltage     | $BV_{CBO}$    | 40   |      |      | V             | $I_c=1\text{mA}$ , $I_E=0$                      |
| Collector-Emitter Breakdown Voltage  | $BV_{CEO}$    | 30   |      |      | V             | $I_c=10\text{mA}$ , $I_B=0$                     |
| Emitter-Base Breakdown Voltage       | $BV_{EBO}$    | 5    |      |      | V             | $I_E=1\text{mA}$ , $I_c=0$                      |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ |      | 0.3  | 0.5  | V             | $I_c=2\text{A}$ , $I_B=0.2\text{A}$             |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ |      | 1.0  | 2.0  | V             | $I_c=2\text{A}$ , $I_B=0.2\text{A}$             |
| Gain bandwidth product               | $f_T$         |      | 90   |      | MHz           | $I_c=100\text{mA}$ , $V_{CE}=5\text{V}$         |
| Common Base Output Capacitance       | $C_{ob}$      |      | 45   |      | PF            | $V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$ |

**■■ hFE Classification**

| Classification | R      | Q       | P       | E       |
|----------------|--------|---------|---------|---------|
| $h_{FE}$       | 60~120 | 100~200 | 160~320 | 200~400 |