

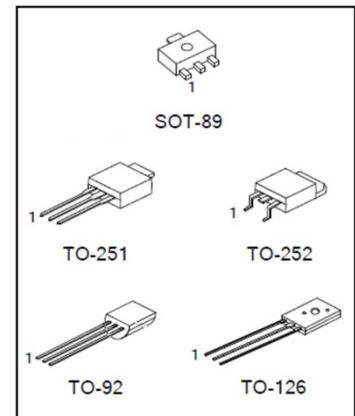
## Applications

- energy-saving lamps
- fluorescent lamp electronic ballasts
- other switches and oscillating circuits

**Package:** TO-92/ SOT-89/TO-126/TO-251/252

## Maximum Ratings (Ta = 25°)

| Parameter                   | Symbol     | Rating     | Unit |
|-----------------------------|------------|------------|------|
| Collector-base voltage      | $BV_{CBO}$ | 700        | V    |
| Collector-emitter voltage   | $BV_{CEO}$ | 400        | V    |
| Emitter-base voltage        | $BV_{EBO}$ | 9          | V    |
| Collector current           | $I_{CM}$   | 1.5        | A    |
| Collector Power Dissipation | $P_C$      | TO-92      | 1    |
|                             |            | SOT-89     | 0.8  |
|                             |            | TO-126     | 1.25 |
|                             |            | TO-251/252 | 1.5  |
| Junction Temperature        | $T_j$      | 150        | °C   |
| Storage Temperature         | $T_{stg}$  | -55~+150   | °C   |



| Pin Assignment |   |   |   |
|----------------|---|---|---|
| Package        | 1 | 2 | 3 |
| TO-92          | E | C | B |
| SOT-89         | B | C | E |
| TO-126         | B | C | E |
| TO-251/252     | B | C | E |

## Electrical Characteristics (Ta=25°C)

| Parameter                            | Symbol        | Test Condition          | Min | Typ | Max | Unit    |
|--------------------------------------|---------------|-------------------------|-----|-----|-----|---------|
| Collector-Base Breakdown Voltage     | $BV_{CBO}$    | $I_C=1mA, I_E=0$        | 700 |     |     | V       |
| Collector-Emitter Breakdown Voltage  | $BV_{CEO}$    | $I_C=10mA, I_B=0$       | 400 |     |     | V       |
| Emitter-Base Breakdown Voltage       | $BV_{EBO}$    | $I_E=1mA, I_C=0$        | 9   |     |     | V       |
| collector-base cut-off current       | $I_{CBO}$     | $V_{CB}=670V, I_E=0$    |     |     | 100 | $\mu A$ |
| collector-emitter cut-off current    | $I_{CEO}$     | $V_{CE}=400V, I_B=0$    |     |     | 1   | mA      |
| emitter-base cut-off current         | $I_{EBO}$     | $V_{EB}=9V, I_C=0$      |     |     | 100 | $\mu A$ |
| DC current gain                      | $H_{FE}$      | $V_{CE}=5V, I_C=200mA$  | 15  |     | 30  |         |
| collector-emitter saturation voltage | $V_{CE(SAT)}$ | $I_C=0.5A, I_B=100mA$   |     |     | 0.4 | V       |
| Base-Emitter Saturation Voltage      | $V_{BE(SAT)}$ | $I_C=0.5A, I_B=100mA$   |     |     | 1.2 | V       |
| Storage Time                         | $T_S$         | $I_C=250mA$             | 1.3 |     |     | $\mu s$ |
| Transition frequency                 | $f_T$         | $V_{CE}=10V, I_C=100mA$ | 5   |     |     | MHz     |

## Classification of $H_{FE}$

| Rank  | B     | C     | D     |
|-------|-------|-------|-------|
| Range | 15-20 | 20-25 | 25-30 |