



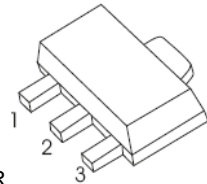
TRANSISTOR (NPN)

#### FEATURES

- Low Saturation Voltage
- Excellent  $h_{FE}$  Characteristics
- Complements the 2SA1797
- **Pb-Free package is available**  
RoHS product for packing code suffix "G"  
Halogen free product for packing code suffix "H"

#### SOT-89

1. BASE
2. COLLECTOR
3. EMITTER



#### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol          | Parameter                                   | Value    | Unit                        |
|-----------------|---|----------|-----------------------------|
| $V_{CBO}$       | Collector-Base Voltage                      | 60       | V                           |
| $V_{CEO}$       | Collector-Emitter Voltage                   | 50       | V                           |
| $V_{EBO}$       | Emitter-Base Voltage                        | 6        | V                           |
| $I_C$           | Collector Current                           | 2        | A                           |
| $P_C$           | Collector Power Dissipation                 | 500      | mW                          |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 250      | $^{\circ}\text{C}/\text{W}$ |
| $T_j$           | Junction Temperature                        | 150      | $^{\circ}\text{C}$          |
| $T_{stg}$       | Storage Temperature                         | -55~+150 | $^{\circ}\text{C}$          |

#### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                                      | Min | Typ | Max  | Unit          |
|--------------------------------------|---------------|--|-----|-----|------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=50\mu\text{A}, I_E=0$                           | 60  |     |      | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$                              | 50  |     |      | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=50\mu\text{A}, I_C=0$                           | 6   |     |      | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=60\text{V}, I_E=0$                           |     |     | 0.1  | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5\text{V}, I_C=0$                            |     |     | 0.1  | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=2\text{V}, I_C=500\text{mA}$                 | 82  |     | 390  |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=1\text{A}, I_B=50\text{mA}$                     |     |     | 0.35 | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=2\text{V}, I_C=0.5\text{A}, f=100\text{MHz}$ |     | 210 |      | MHz           |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$            |     | 25  |      | pF            |

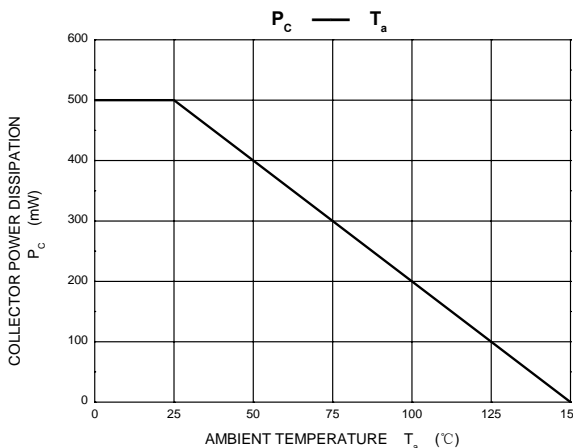
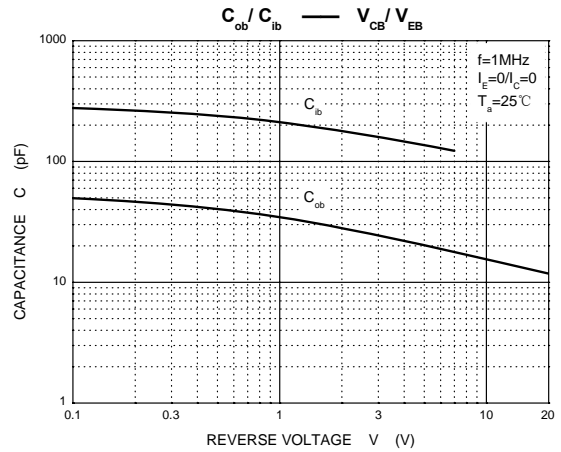
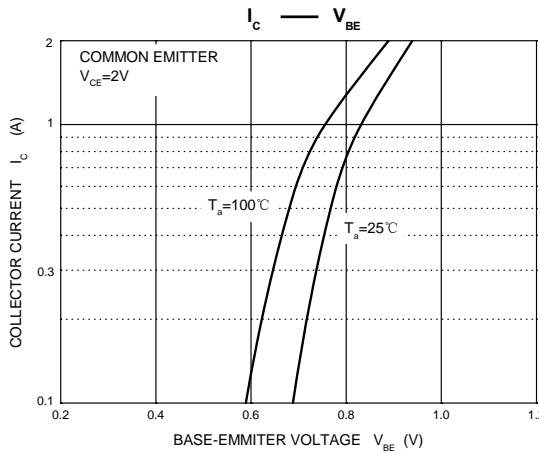
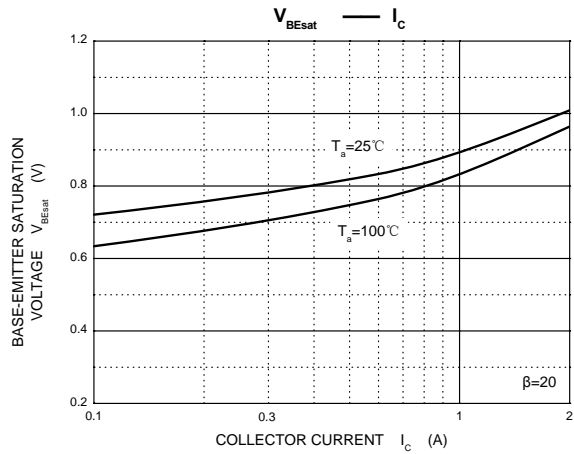
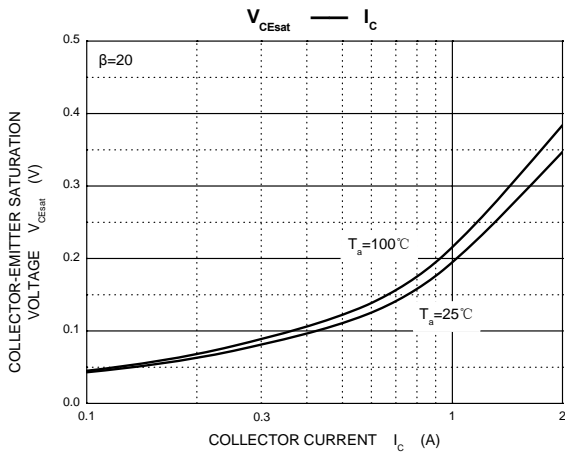
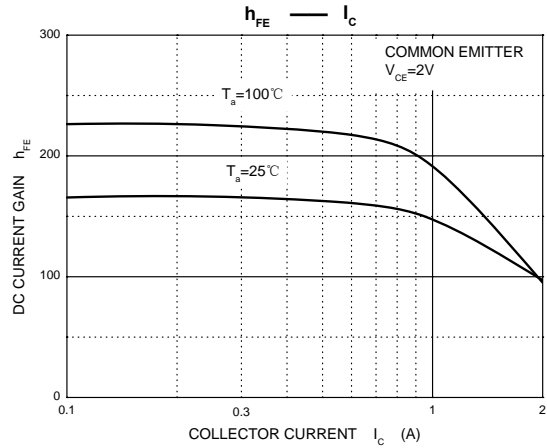
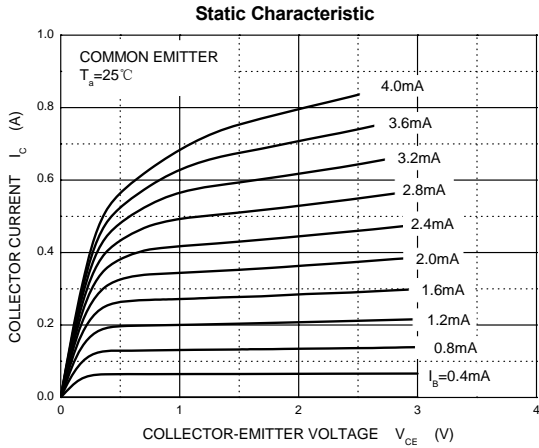
#### CLASSIFICATION OF $h_{FE}$

| RANK    | P        | Q         | R         |
|---------|----------|-----------|-----------|
| RANGE   | 82 - 180 | 120 - 270 | 180 - 390 |
| MARKING | DKP      | DKQ       | DKR       |



### SOT-89 Plastic-Encapsulate Transistors

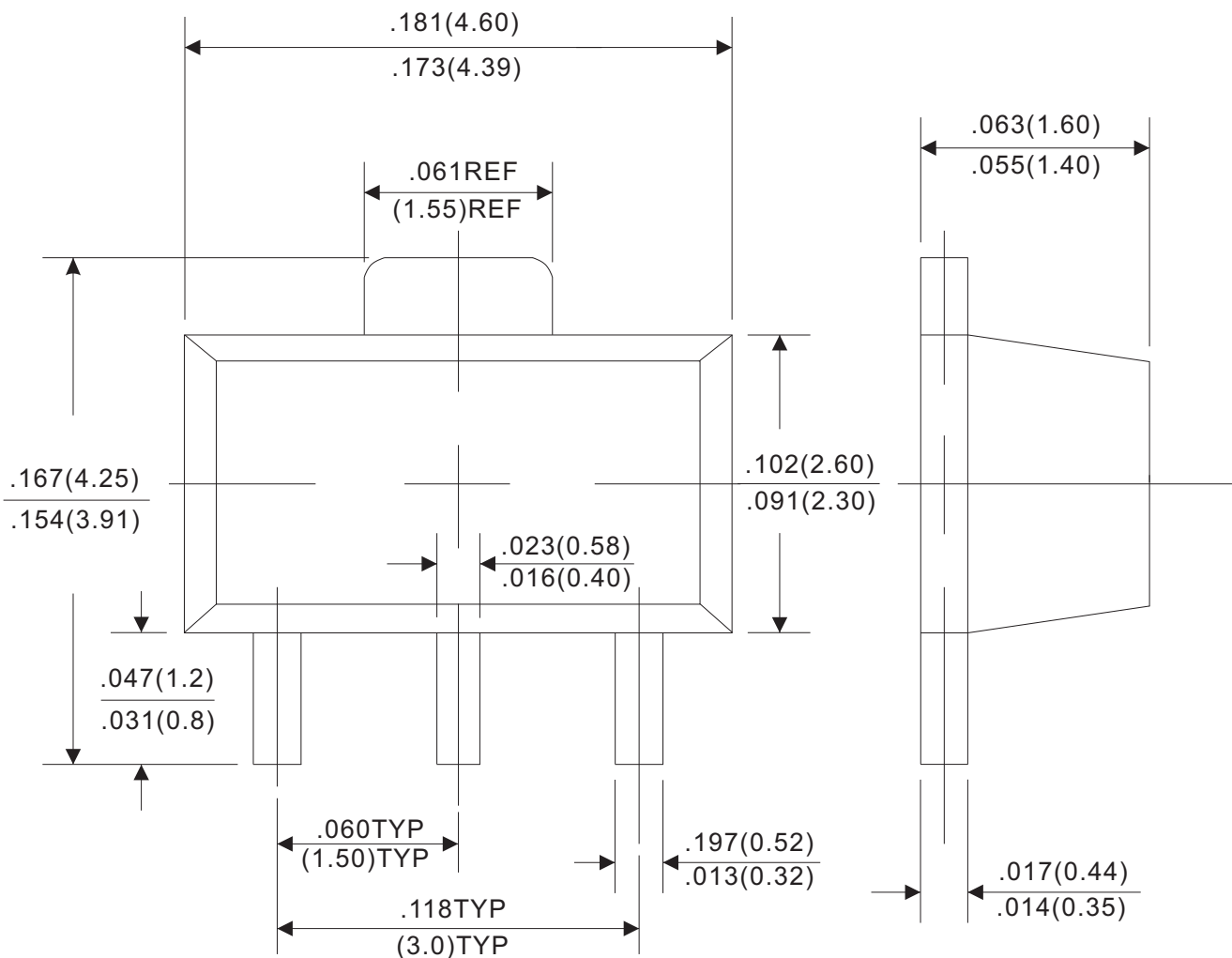
### Typical Characteristics





### Outline Drawing

### SOT-89



Dimensions in inches and (millimeters)

Rev.C