



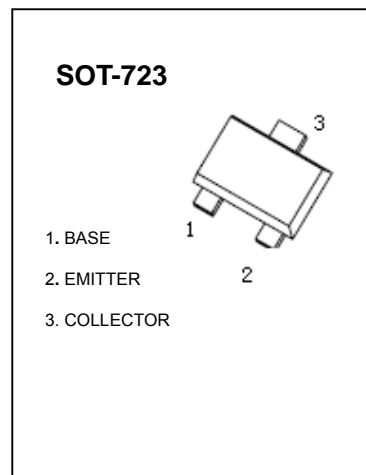
## SOT-723 Plastic-Encapsulate Transistors

**2SA2029** General Purpose Transistors (PNP)

### FEATURES

- Excellent  $h_{FE}$  linearity
- Complements the 2SC5658

Marking: FQFRFS



### Absolute maximum ratings ( $T_a=25^\circ\text{C}$ )

| Symbol    | Parameter                     | Limit    | 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 -Continuous | -150     | mA               |
| $P_C$     | Collector Dissipation         | 150      | mW               |
| $T_j$     | 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              | $I_{EBO}$     | $V_{EB}=-6\text{V}, I_C=0$                           |     |     | -0.1 | $\mu\text{A}$ |
| DC current transfer ratio            | $h_{FE}$      | $V_{CE}=-6\text{V}, I_C=-1\text{mA}$                 | 120 |     | 560  |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=-50\text{mA}, I_B=-5\text{mA}$                  |     |     | -0.5 | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=-12\text{V}, I_C=2\text{mA}, f=30\text{MHz}$ |     | 140 |      | MHz           |
| Output capacitance                   | $C_{ob}$      | $V_{CB}=-12\text{V}, I_E=0, f=1\text{MHz}$           |     |     | 5    | pF            |

### Classification of $h_{FE}$

| Rank  | Q       | R       | S       |
|-------|---------|---------|---------|
| Range | 120~270 | 180~390 | 270~560 |

# Typical Characteristics

# 2SA2029

