



# SOT-23 Plastic-Encapsulate Transistors

## S9014Z-J6

**S9014Z** TRANSISTOR (NPN)

### FEATURES

- Complementary to S9015

### MARKING: J6

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

| Symbol    | Parameter                     | Value   | Units              |
|-----------|-------------------------------|---------|--------------------|
| $V_{CB0}$ | Collector-Base Voltage        | 50      | V                  |
| $V_{CE0}$ | Collector-Emitter Voltage     | 45      | V                  |
| $V_{EBO}$ | Emitter-Base Voltage          | 5       | V                  |
| $I_C$     | Collector Current -Continuous | 0.1     | A                  |
| $P_C$     | Collector Power Dissipation   | 0.2     | W                  |
| $T_j$     | Junction Temperature          | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature           | -55-150 | $^{\circ}\text{C}$ |

### SOT-23



- BASE
- EMITTER
- COLLECTOR

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

| Parameter                            | Symbol        | Test conditions  | MIN | TYP | MAX | UNIT          |
|--------------------------------------|---------------|--|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}$ , $I_E=0$                             | 50  |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}$ , $I_B=0$                                 | 45  |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}$ , $I_C=0$                             | 5   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=50\text{V}$ , $I_E=0$                              |     |     | 0.1 | $\mu\text{A}$ |
| Collector cut-off current            | $I_{CEO}$     | $V_{CE}=35\text{V}$ , $I_B=0$                              |     |     | 1.0 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=3\text{V}$ , $I_C=0$                               |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=5\text{V}$ , $I_C=1\text{mA}$                      | 60  |     | 400 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=100\text{mA}$ , $I_B=5\text{mA}$                      |     |     | 0.3 | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C=100\text{mA}$ , $I_B=5\text{mA}$                      |     |     | 1   | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=5\text{V}$ , $I_C=10\text{mA}$<br>$f=30\text{MHz}$ | 150 |     |     | MHz           |

### CLASSIFICATION OF $h_{FE}$

| Rank  | C1      | C2      |
|-------|---------|---------|
| Range | 200-300 | 300-400 |