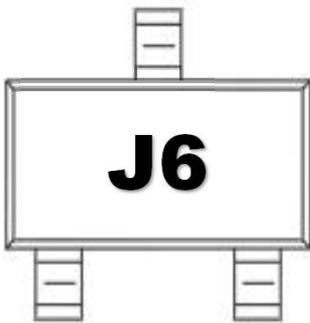


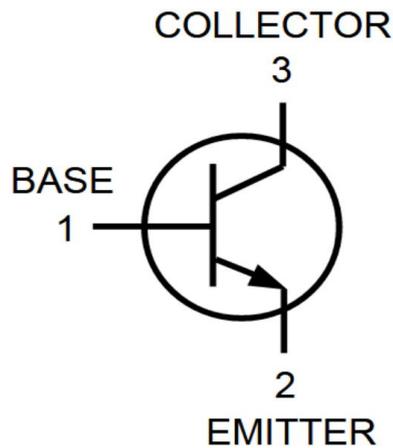
# S9014

## TRANSISTOR (NPN)

### MARKING:



### Equivalent Circuit:



### SOT-23



### FEATURES:

- ※ Complimentary to S9015
- ※ Collector Current:  $I_c=100\text{mA}$

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

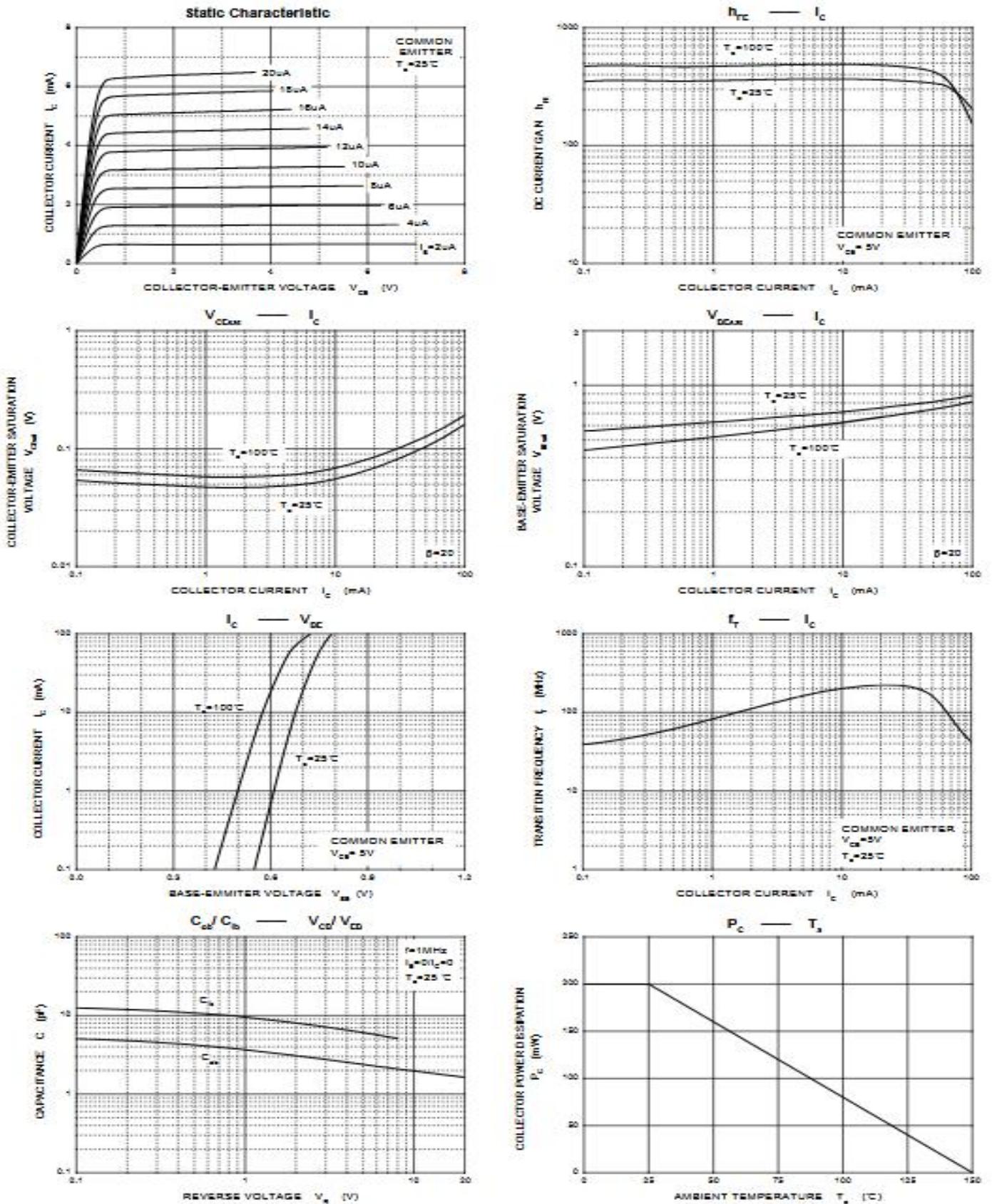
| Parameter                                   | Symbol        | Value    | Unit                      |
|---|---------------|----------|---------------------------|
| Collector-Base Voltage                      | VCBO          | 50       | V                         |
| Collector-Emitter Voltage                   | VCEO          | 45       | V                         |
| Emitter-Base Voltage                        | VEBO          | 5        | V                         |
| Collector Current                           | IC            | 100      | mA                        |
| Collector Power Dissipation                 | PC            | 200      | mW                        |
| Thermal Resistance From Junction To Ambient | R $\theta$ JA | 625      | $^\circ\text{C}/\text{W}$ |
| Junction Temperature                        | Tj            | 150      | $^\circ\text{C}$          |
| Storage Temperature                         | Tstg          | -55~+150 | $^\circ\text{C}$          |

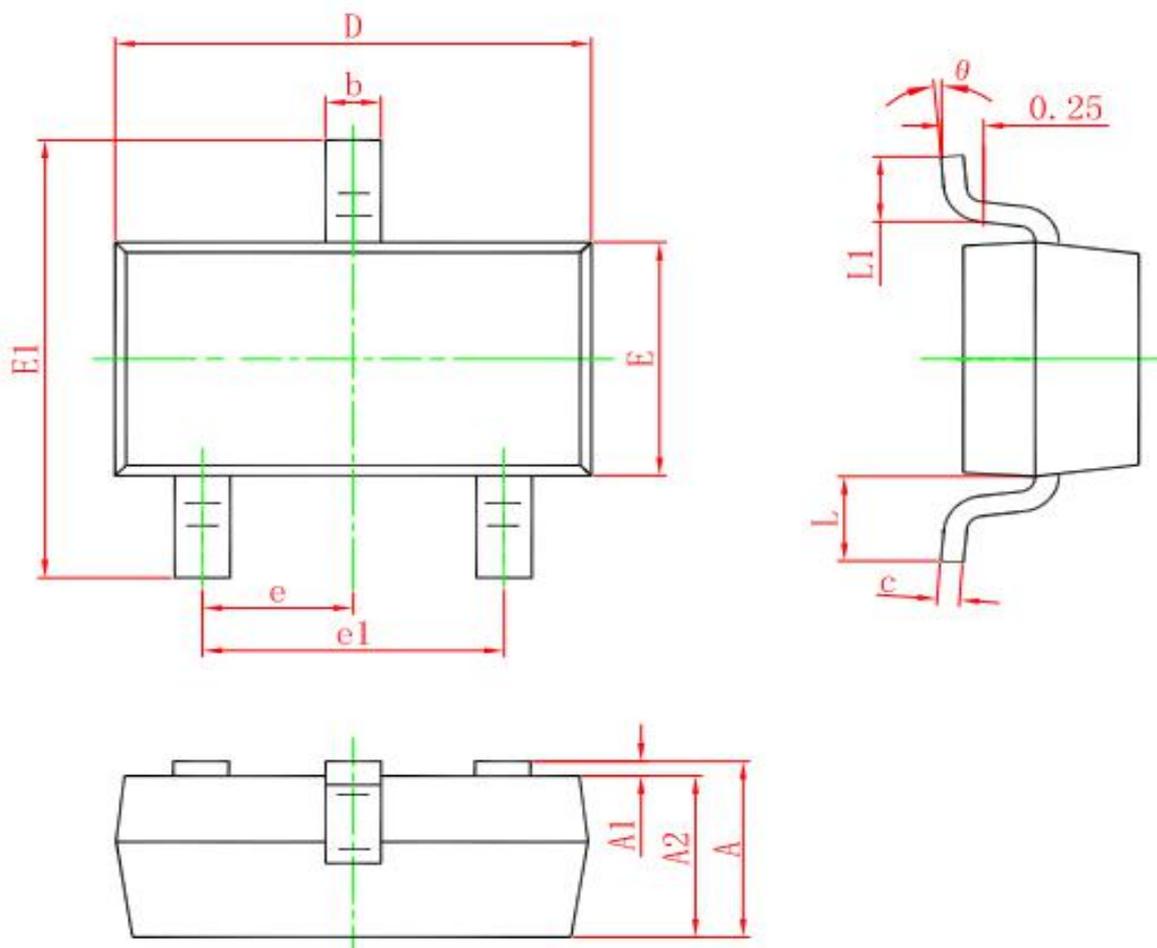
**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

| <b>Parameter</b>                     | <b>Symbol</b> | <b>Test Condition</b>       | <b>Min</b> | <b>Typ</b> | <b>Max</b> | <b>Unit</b> |
|--------------------------------------|---------------|-----------------------------|------------|------------|------------|-------------|
| Collector-base breakdown voltage     | V(BR)CBO      | IC= 100μA, IE=0             | 50         |            |            | V           |
| Collector-emitter breakdown voltage  | V(BR)CEO      | IC= 0.1mA, IB=0             | 45         |            |            | V           |
| Emitter-base breakdown voltage       | V(BR)EBO      | IE= 100μA, IC=0             | 5          |            |            | V           |
| Collector cut-off current            | ICBO          | VCB= 50 V , IE=0            |            |            | 0.1        | μA          |
| Collector cut-off current            | ICEO          | VCB= 35V , IE=0             |            |            | 1          | μA          |
| Emitter cut-off current              | IEBO          | VEB= 6V , IC=0              |            |            | 0.1        | μA          |
| DC current gain                      | hFE           | VCE=5V, IC= 1mA             | 300        |            | 400        |             |
| Collector-emitter saturation voltage | VCE(sat)      | IC=100 mA, IB= 5mA          |            |            | 0.3        | V           |
| Base-emitter saturation voltage      | VBE(sat)      | IC=100 mA, IB= 5mA          |            |            | 1          | V           |
| Transition frequency                 | fT            | VCE=6V, IC= 20mA<br>f=30MHz | 150        |            |            | MHz         |

**CLASSIFICATION OF hFE**

|              |                |
|--------------|----------------|
| <b>Range</b> | <b>300-400</b> |
|--------------|----------------|

**TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS**


**SOT-23 PACKAGE OUTLINE DIMENSIONS**


| Symbol   | Dimensions In Millimeters |       | Dimensions In Inches |       |
|----------|---------------------------|-------|----------------------|-------|
|          | Min.                      | Max.  | Min.                 | Max.  |
| A        | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1       | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2       | 0.900                     | 1.050 | 0.035                | 0.041 |
| b        | 0.300                     | 0.500 | 0.012                | 0.020 |
| c        | 0.080                     | 0.150 | 0.003                | 0.006 |
| D        | 2.800                     | 3.000 | 0.110                | 0.118 |
| E        | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1       | 2.250                     | 2.550 | 0.089                | 0.100 |
| e        | 0.950 TYP.                |       | 0.037 TYP.           |       |
| e1       | 1.800                     | 2.000 | 0.071                | 0.079 |
| L        | 0.550 REF.                |       | 0.022 REF.           |       |
| L1       | 0.300                     | 0.500 | 0.012                | 0.020 |
| $\theta$ | 0°                        | 8°    | 0°                   | 8°    |

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