

## SOT-23 Plastic-Encapsulate Transistors

### **KTA1504** TRANSISTOR (PNP)

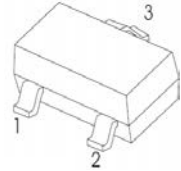
#### FEATURES

- Complementary to KTC3875
- Low Noise
- Excellent  $h_{FE}$  Linearity

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

| Symbol          | Parameter                                        | Value    | Unit               |
|-----------------|--------------------------------------------------|----------|--------------------|
| $V_{CBO}$       | Collector-Base Voltage                           | -50      | V                  |
| $V_{CEO}$       | Collector-Emitter Voltage                        | -50      | V                  |
| $V_{EBO}$       | Emitter-Base Voltage                             | -5       | V                  |
| $I_C$           | Collector Current                                | -150     | mA                 |
| $P_C$           | Collector Power Dissipation                      | 150      | mW                 |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 833      | $^\circ\text{C/W}$ |
| $T_J, T_{stg}$  | Operation Junction and Storage Temperature Range | -55~+150 | $^\circ\text{C}$   |

#### SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

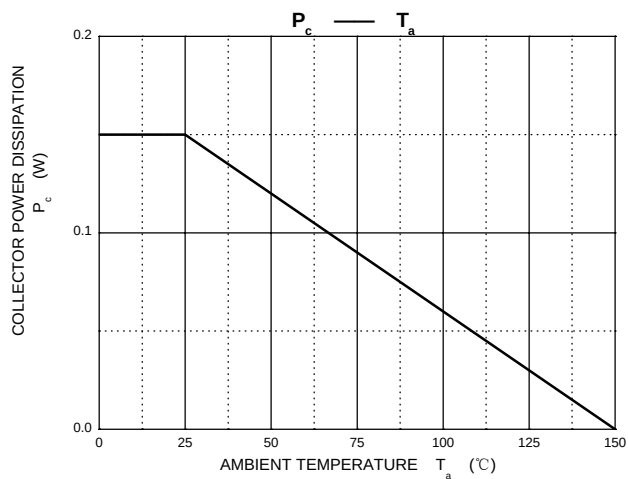
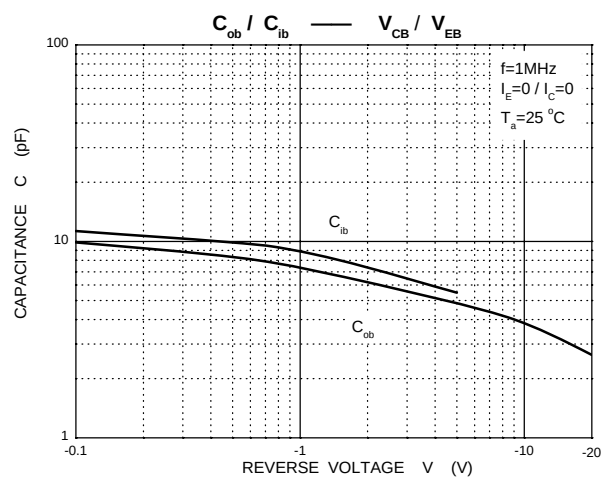
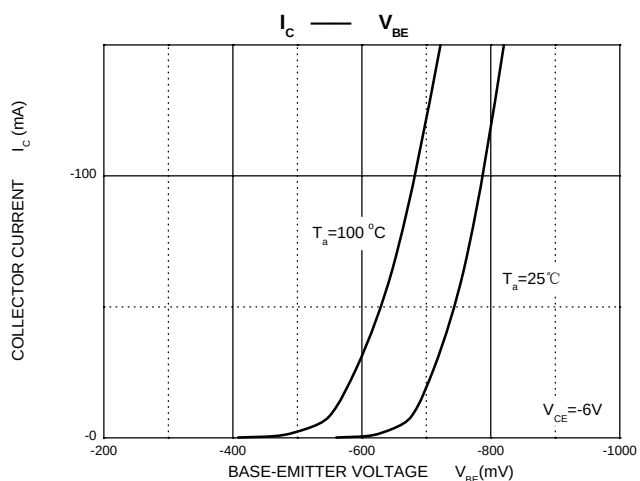
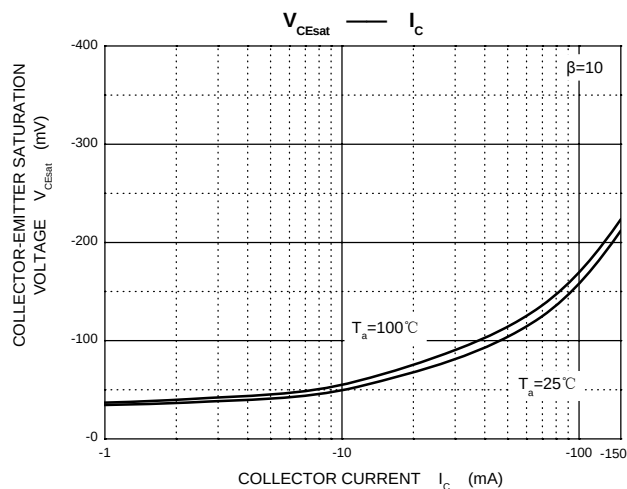
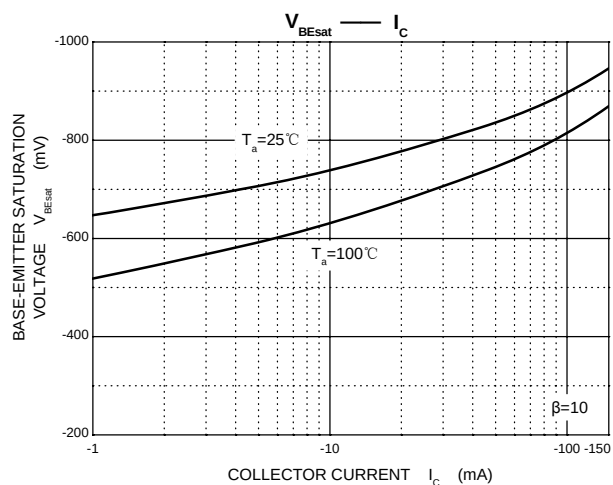
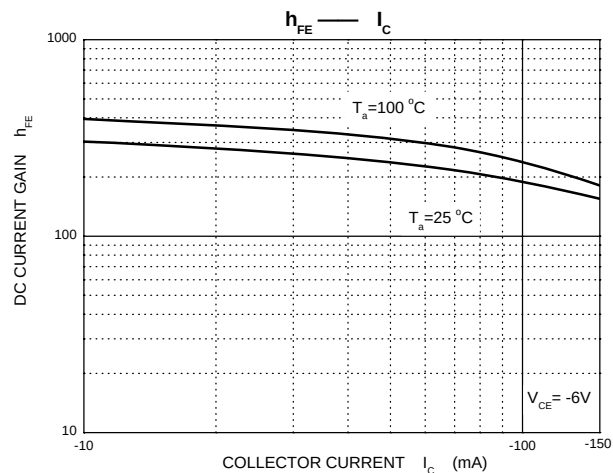
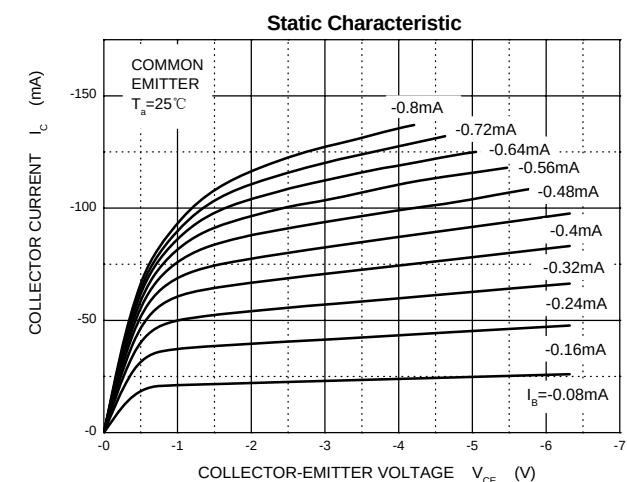
#### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                            | Min | Typ | Max  | Unit          |
|--------------------------------------|---------------|--------------------------------------------|-----|-----|------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=-100\mu\text{A}, I_E=0$               | -50 |     |      | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=-1\text{mA}, I_B=0$                   | -50 |     |      | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=-100\mu\text{A}, I_C=0$               | -5  |     |      | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=-50\text{V}, I_E=0$                |     |     | -0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=-5\text{V}, I_C=0$                 |     |     | -0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=-6\text{V}, I_C=-2\text{mA}$       | 70  |     | 400  |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=-100\text{mA}, I_B=-10\text{mA}$      |     |     | -0.3 | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=-10\text{V}, I_C=-1\text{mA}$      | 80  |     |      | MHz           |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$ |     |     | 7    | pF            |

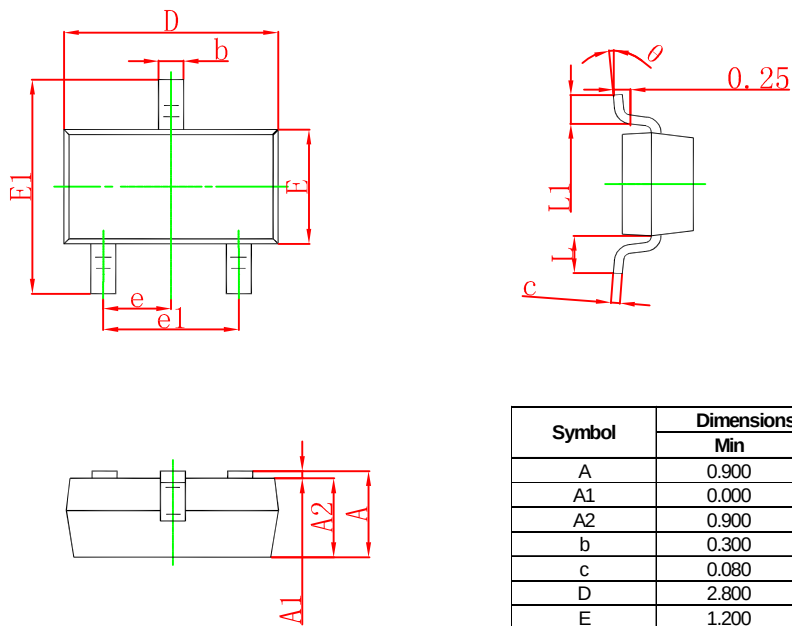
#### CLASSIFICATION OF $h_{FE}$

| RANK    | O        | Y         | GR        |
|---------|----------|-----------|-----------|
| RANGE   | 70 - 140 | 120 - 240 | 200 - 400 |
| MARKING | ASO      | ASY       | ASG       |

## Typical Characteristics

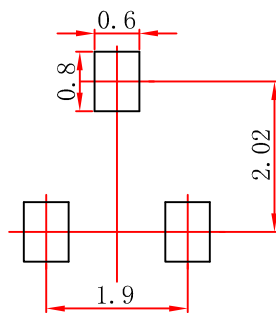


## SOT-23 Package Outline Dimensions



| 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 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOT-23 Suggested Pad Layout



Note:  
 1. Controlling dimension: in millimeters.  
 2. General tolerance:  $\pm 0.05$  mm.  
 3. The pad layout is for reference purposes only.