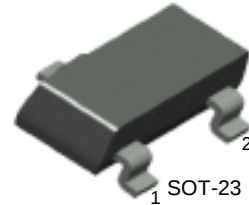


# KST2222A

KST2222A

## General Purpose Transistor



1 SOT-23  
1. Base 2. Emitter 3. Collector

## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol    | Parameter                 | Value | Units            |
|-----------|---------------------------|-------|------------------|
| $V_{CBO}$ | Collector-Base Voltage    | 75    | V                |
| $V_{CEO}$ | Collector-Emitter Voltage | 40    | V                |
| $V_{EBO}$ | Emitter-Base Voltage      | 6     | V                |
| $I_C$     | Collector Current         | 600   | mA               |
| $P_C$     | Collector Dissipation     | 350   | mW               |
| $T_{STG}$ | Storage Temperature       | 150   | $^\circ\text{C}$ |

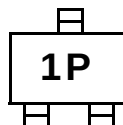
• Refer to KST2222 for graphs

### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol               | Parameter                              | Test Condition                                                                                                                                                                                         | Min.                        | Max.       | Units         |
|----------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------|---------------|
| $BV_{CBO}$           | Collector-Base Breakdown Voltage       | $I_C=10\mu\text{A}, I_E=0$                                                                                                                                                                             | 75                          |            | V             |
| $BV_{CEO}$           | Collector-Emitter Breakdown Voltage    | $I_C=10\text{mA}, I_B=0$                                                                                                                                                                               | 40                          |            | V             |
| $BV_{EBO}$           | Emitter-Base Breakdown Voltage         | $I_E=10\mu\text{A}, I_C=0$                                                                                                                                                                             | 6                           |            | V             |
| $I_{CBO}$            | Collector Cut-off Current              | $V_{CB}=60\text{V}, I_E=0$                                                                                                                                                                             |                             | 0.01       | $\mu\text{A}$ |
| $h_{FE}$             | * DC Current Gain                      | $V_{CE}=10\text{V}, I_C=0.1\text{mA}$<br>$V_{CE}=10\text{V}, I_C=1\text{mA}$<br>$V_{CE}=10\text{V}, I_C=10\text{mA}$<br>$V_{CE}=10\text{V}, I_C=150\text{mA}$<br>$V_{CE}=10\text{V}, I_C=500\text{mA}$ | 35<br>50<br>75<br>100<br>40 | 300        |               |
| $V_{CE}(\text{sat})$ | * Collector-Emitter Saturation Voltage | $I_C=150\text{mA}, I_B=15\text{mA}$<br>$I_C=500\text{mA}, I_B=50\text{mA}$                                                                                                                             |                             | 0.3<br>1.0 | V<br>V        |
| $V_{BE}(\text{sat})$ | * Base-Emitter Saturation Voltage      | $I_C=150\text{mA}, I_B=15\text{mA}$<br>$I_C=500\text{mA}, I_B=50\text{mA}$                                                                                                                             | 0.6                         | 1.2<br>2.0 | V<br>V        |
| $f_T$                | Current Gain Bandwidth Product         | $I_C=20\text{mA}, V_{CE}=20\text{V}, f=100\text{MHz}$                                                                                                                                                  | 300                         |            | MHz           |
| $C_{ob}$             | Output Capacitance                     | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$                                                                                                                                                              |                             | 8          | pF            |
| NF                   | Noise Figure                           | $I_C=100\mu\text{A}, V_{CE}=10\text{V}$<br>$R_S=1\text{K}\Omega, f=1\text{MHz}$                                                                                                                        |                             | 4          | dB            |
| $t_{ON}$             | Turn On Time                           | $V_{CC}=30\text{V}, I_C=150\text{mA}$<br>$V_{BE}=0.5\text{V}, I_{B1}=15\text{mA}$                                                                                                                      |                             | 35         | ns            |
| $t_{OFF}$            | Turn Off Time                          | $V_{CC}=30\text{V}, I_C=150\text{mA}$<br>$I_{B1}=I_{B2}=15\text{mA}$                                                                                                                                   |                             | 285        | ns            |

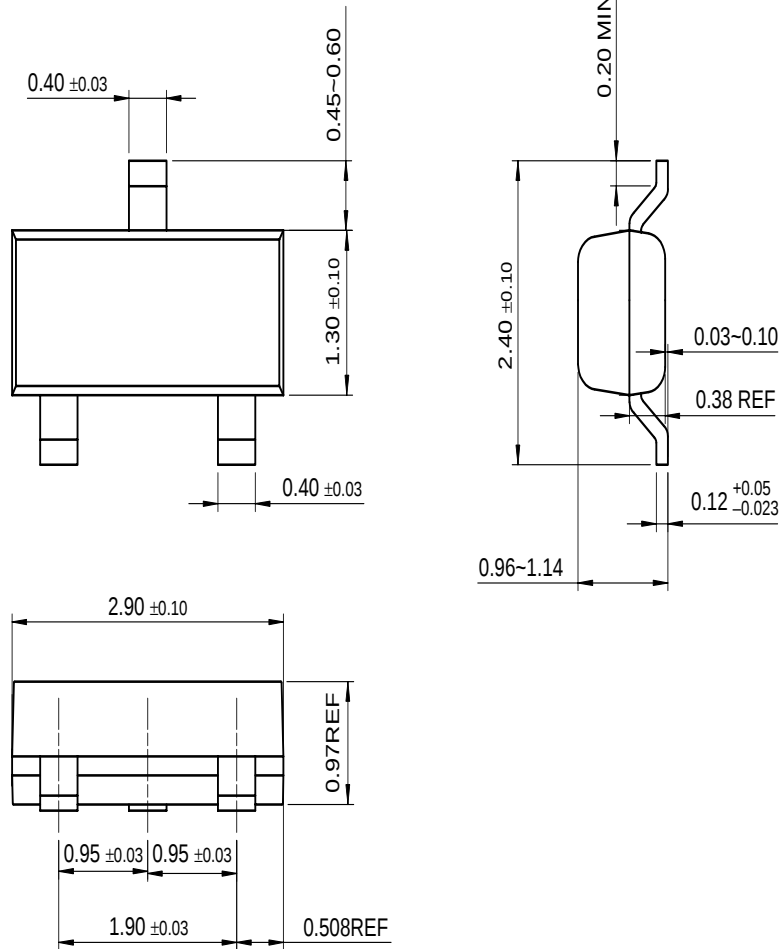
\* Pulse Test:  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

Marking



# Package Dimensions

## SOT-23



Dimensions in Millimeters

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