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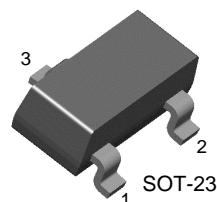
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KST13/14

Darlington Amplifier Transistor



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 | 30 | V |
| V_{CES} | Collector-Emitter Voltage | 30 | V |
| V_{EBO} | Emitter-Base Voltage | 10 | V |
| I_C | Collector Current | 300 | mA |
| P_C | Collector Power Dissipation | 350 | mW |
| T_{STG} | Storage Temperature | 150 | $^\circ\text{C}$ |

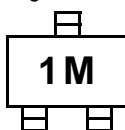
Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|---------------|--------------------------------------|---|------|------|-------|
| BV_{CES} | Collector-Emitter Breakdown Voltage | $I_C=100\mu\text{A}$, $V_{BE}=0$ | 30 | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB}=30\text{V}$, $I_E=0$ | | 100 | nA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB}=10\text{V}$, $I_C=0$ | | 100 | nA |
| h_{FE} | DC Current Gain | | | | |
| | : KST13 | $V_{CE}=5\text{V}$, $I_C=10\text{mA}$ | 5K | | |
| | : KST14 | $V_{CE}=5\text{V}$, $I_C=10\text{mA}$ | 10K | | |
| | : KST13 | $V_{CE}=5\text{V}$, $I_C=100\text{mA}$ | 10K | | |
| | : KST14 | $V_{CE}=5\text{V}$, $I_C=100\text{mA}$ | 20K | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=100\text{mA}$, $I_B=0.1\text{mA}$ | | 1.5 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $V_{CE}=5\text{V}$, $I_C=100\text{mA}$ | | 2.0 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE}=5\text{V}$, $I_C=10\text{mA}$ $f=100\text{MHz}$ | 125 | | MHz |

Marking Code

| Type | KST13 | KST14 |
|------|-------|-------|
| Mark | 1M | 1N |

Marking



Typical Characteristics

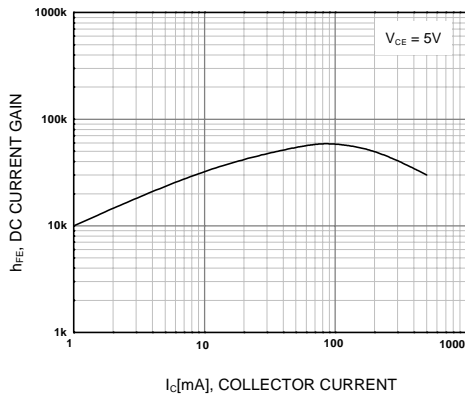


Figure 1. DC Current Gain

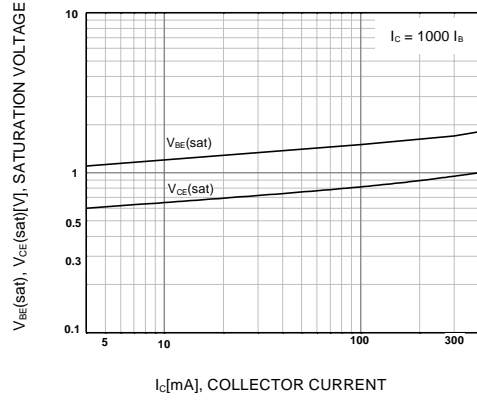


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

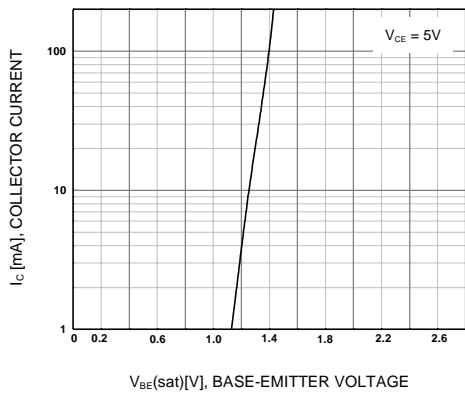


Figure 3. Base-Emitter On Voltage

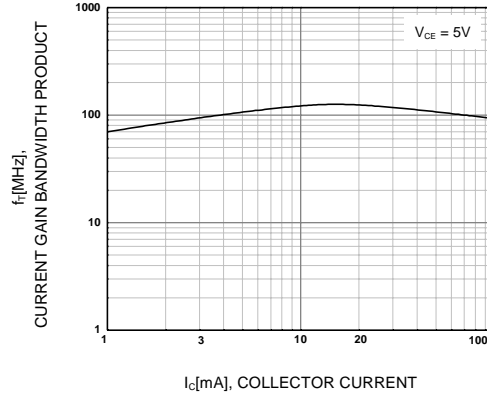
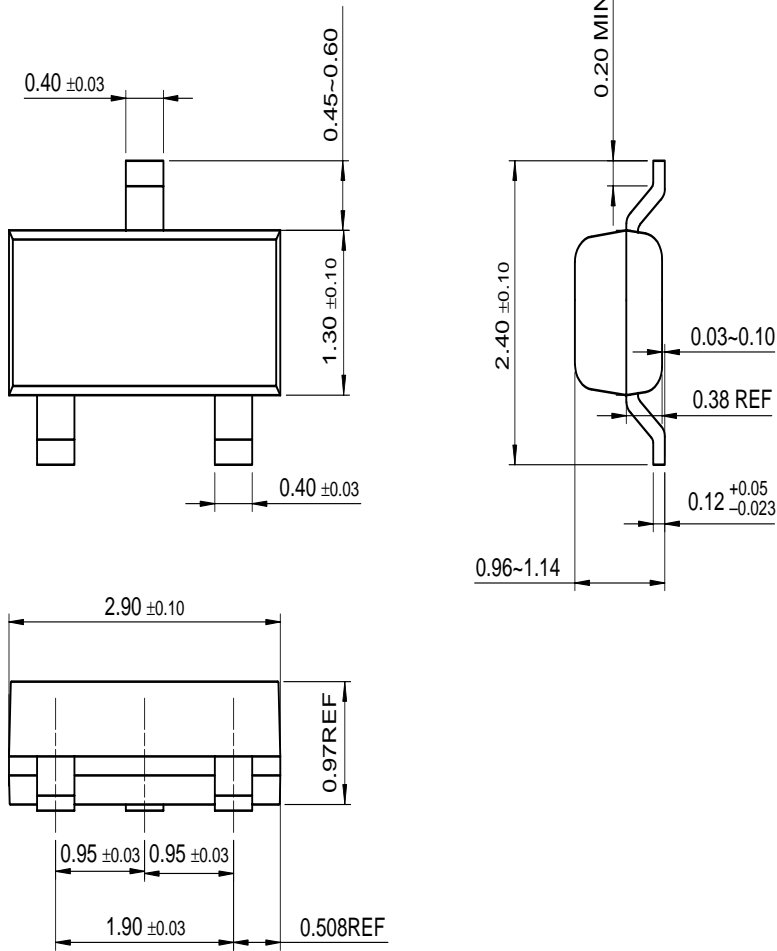


Figure 4. Current Gain Bandwidth Product

Package Dimensions

SOT-23



Dimensions in Millimeters

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