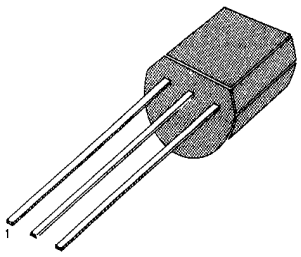
# KSP13/14

# NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR

## DARLINGTON TRANSISTOR

- Collector-Emitter Voltage: $V_{CES}$=30V
- Collector Dissipation:$P_C$ (max)=625mW

TO-92



1. Emitter 2. Base 3. Collector

## ABSOLUTE MAXIMUM RATINGS ($T_A$=25℃)

| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 30 | V |
| Collector-Emitter Voltage | $V_{CES}$ | 30 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 10 | V |
| Collector Current | $I_C$ | 500 | mA |
| Collector Dissipation | $P_C$ | 625 | mW |
| Junction Temperature | $T_J$ | 150 | ℃ |
| Storage Temperature | $T_{STG}$ | -55 ~ 150 | ℃ |

## ELECTRICAL CHARACTERISTICS ($T_A$=25℃)

| Characteristic | Symbol | Test Conditions | Min | Max | Unit |
|---|---|---|---|---|---|
| Collector-Emitter Breakdown Voltage | $BV_{CES}$ | $I_C$=100㎂, $I_B$=0 | 30 | | V |
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB}$=30V, $I_E$=0 | | 100 | nA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{BE}$=10V, $I_C$=0 | | 100 | nA |
| ★DC Current Gain | $h_{FE}$ | | | | |
| :KSP13 | | $V_{CE}$=5V, $I_C$=10mA | 5,000 | | |
| :KSP14 | | | 10,000 | | |
| :KSP13 | | $V_{CE}$=5V, $I_C$=100mA | 10,000 | | |
| :KSP14 | | | 20,000 | | |
| Collector-Emitter Saturation Voltage | $V_{CE}$ (sat) | $I_C$=100mA, $I_B$=0.1mA | | 1.5 | V |
| Base-Emitter On Voltage | $V_{BE}$ (on) | $V_{CE}$=5V, $I_C$=100mA | | 2.0 | V |
| Current Gain Bandwidth Product | $f_T$ | $V_{CE}$=5V, $I_C$=10mA f=100MHz | 125 | | MHz |

★ Pulse Test: Pulse Width≤300㎲, Duty Cycle≤2%

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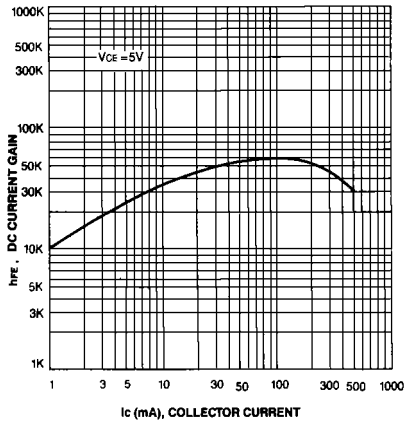
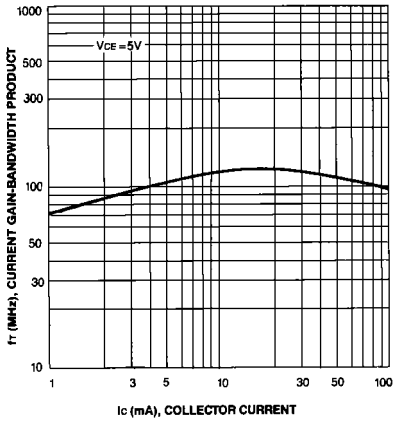
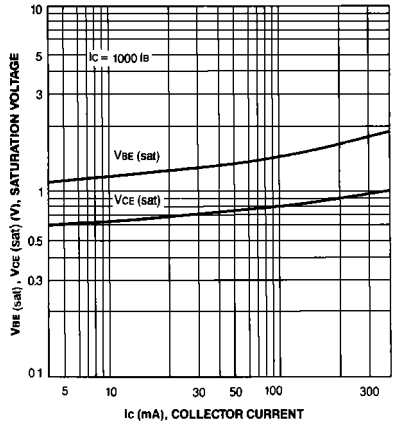
**DC CURRENT GAIN**



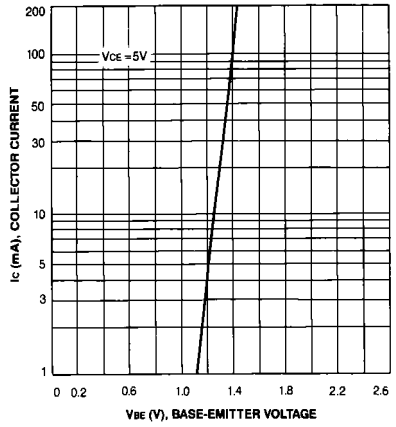

**CURRENT GAIN-BANDWIDTH PRODUCT**




**BASE-EMITTER SATURATION VOLTAGE**
**COLLECTOR-EMITTER SATURATION VOLTAGE**




**BASE-EMITTER ON VOLTAGE**

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