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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD
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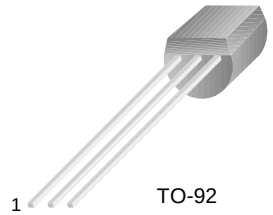
KSP13/14

Darlington Transistor

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



TO-92

1. Emitter 2. Base 3. Collector

NPN Epitaxial Silicon Darlington Transistor

Absolute Maximum Ratings T_a=25°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	500	mA
P_C	Collector Power Dissipation	625	mW
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

Electrical Characteristics T_a=25°C unless otherwise noted

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

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

Typical Characteristics

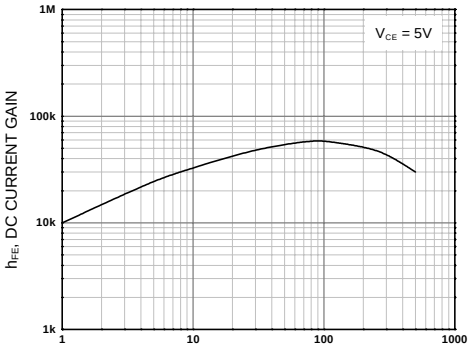


Figure 1. DC current Gain

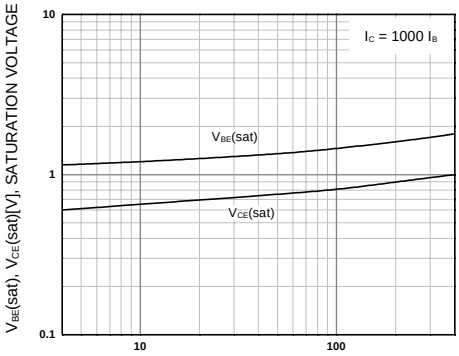


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

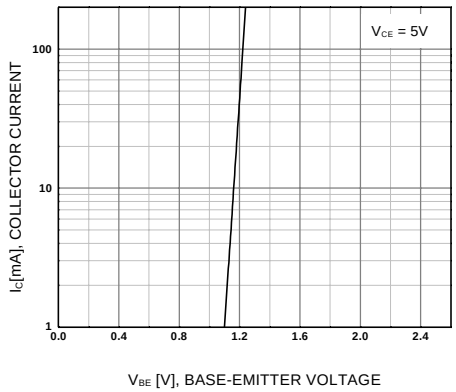


Figure 3. Base-Emitter On Voltage

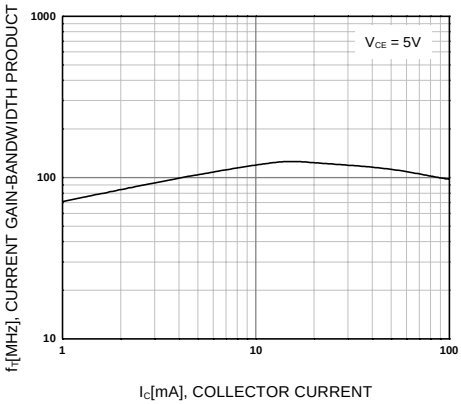
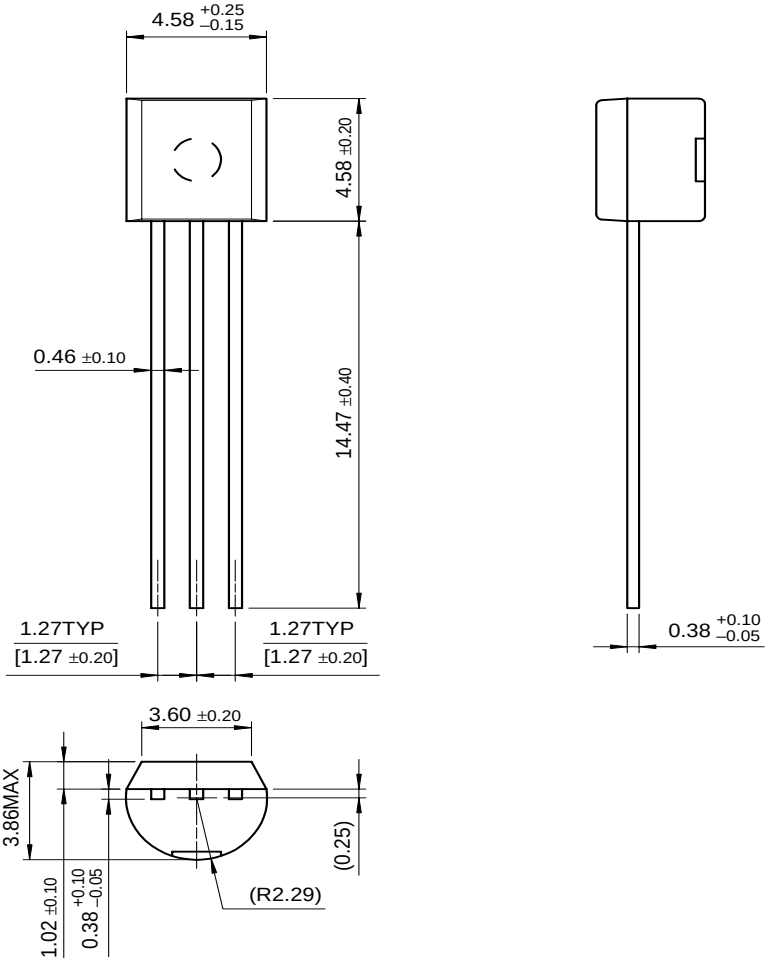


Figure 4. Current Gain Bandwidth Product

Package Dimensions

TO-92



Dimensions in Millimeters

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