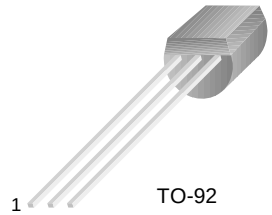
FAIRCHILD
SEMICONDUCTOR®

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

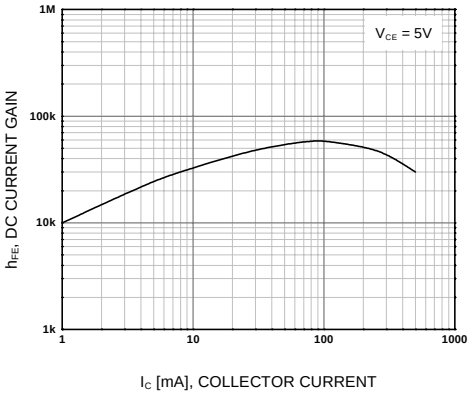


Figure 1. DC current Gain

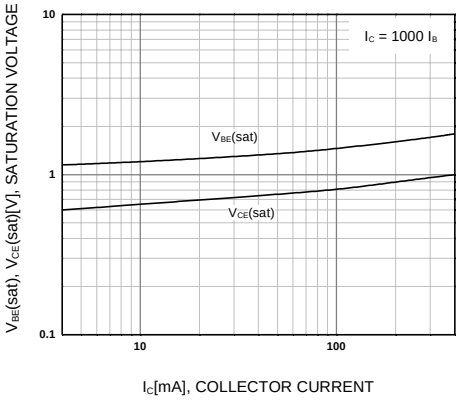


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

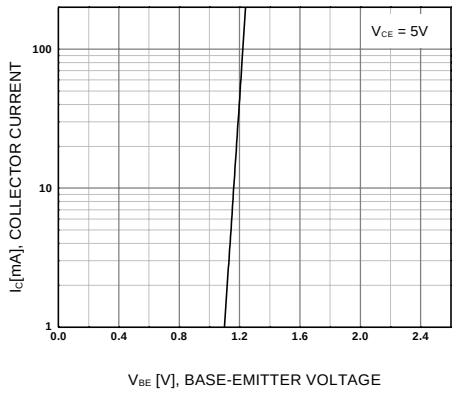


Figure 3. Base-Emitter On Voltage

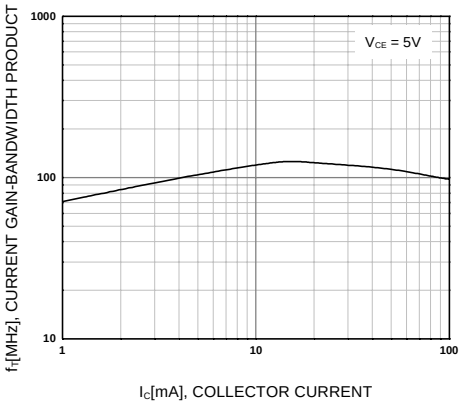


Figure 4. Current Gain Bandwidth Product

Package Dimensions

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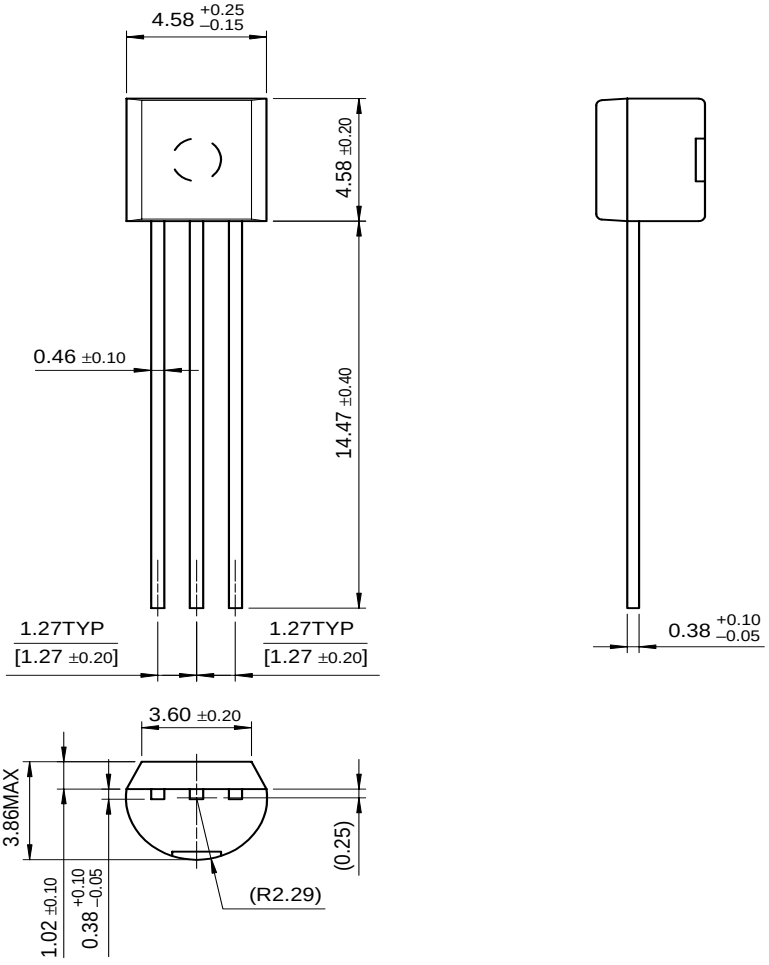

Dimensions in Millimeters

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CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
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The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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