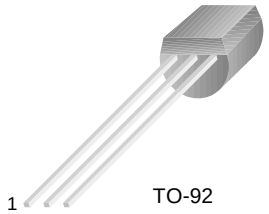
FAIRCHILD
SEMICONDUCTOR®

KSP42/43

High Voltage Transistor

- Collector-Emitter Voltage: V_{CEO}=KSP42: 300V
  KSP43: 200V
- Collector Power Dissipation: P_C(max)=625mW



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1. Emitter 2. Base 3. Collector

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector Base Voltage		
	: KSP42	300	V
	: KSP43	200	V
V_{CEO}	Collector-Emitter Voltage		
	: KSP42	300	V
	: KSP43	200	V
V_{EBO}	Emitter-Base Voltage	6	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_{CBO}	Collector-Base Breakdown Voltage	I_C=100μA, I_E=0			
	: KSP42		300		V
	: KSP43		200		V
BV_{CEO}	* Collector -Emitter Breakdown Voltage	I_C=1mA, I_B=0			
	: KSP42		300		V
	: KSP43		200		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=100μA, I_C=0	6		V
I_{CBO}	Collector Cut-off Current				
	: KSP42	V_{CB}=200V, I_E=0		100	nA
	: KSP43	V_{CB}=160V, I_E=0		100	nA
I_{EBO}	Emitter Cut-off Current				
	: KSP42	V_{BE}=6V, I_C=0		100	nA
	: KSP43	V_{BE}=4V, I_C=0		100	nA
h_{FE}	* DC Current Gain	V_{CE}=10V, I_C=1mA	25		
		V_{CE}=10V, I_C=10mA	40		
		V_{CE}=10V, I_C=30mA	40		
V_{CE} (sat)	* Collector-Emitter Saturation Voltage	I_C=20mA, I_B=2mA		0.5	V
V_{BE} (sat)	* Base-Emitter Saturation Voltage	I_C=20mA, I_B=2mA		0.9	V
C_{ob}	Output Capacitance	V_{CB}=20V, I_E=0			
	: KSP42	f=1MHz		3	pF
	: KSP43			4	pF
f_T	Current Gain Bandwidth Product	V_{CE}=20V, I_C=10mA f=100MHz	50		MHz

* Pulse Test: PW≤300μs, Duty Cycle≤2%

Typical Characteristics

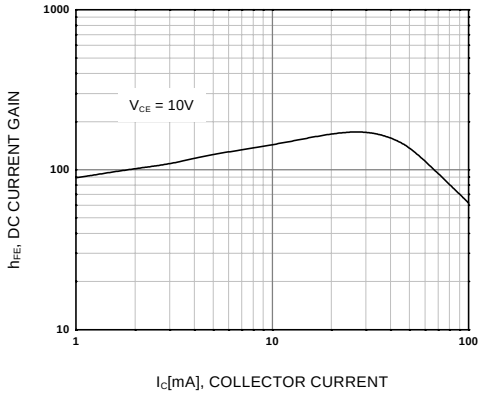

Figure 1. DC current Gain

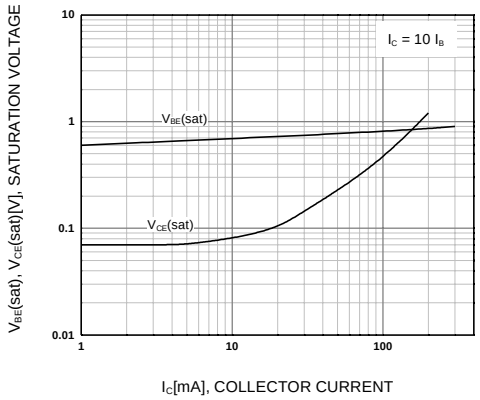

Figure 2. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

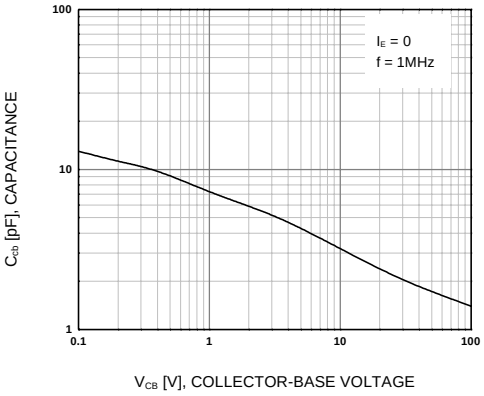

Figure 3. Collector-Base Capacitance

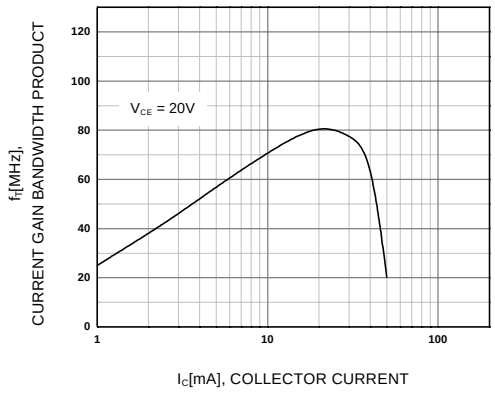

Figure 4. Current Gain Bandwidth Product

Package Dimensions

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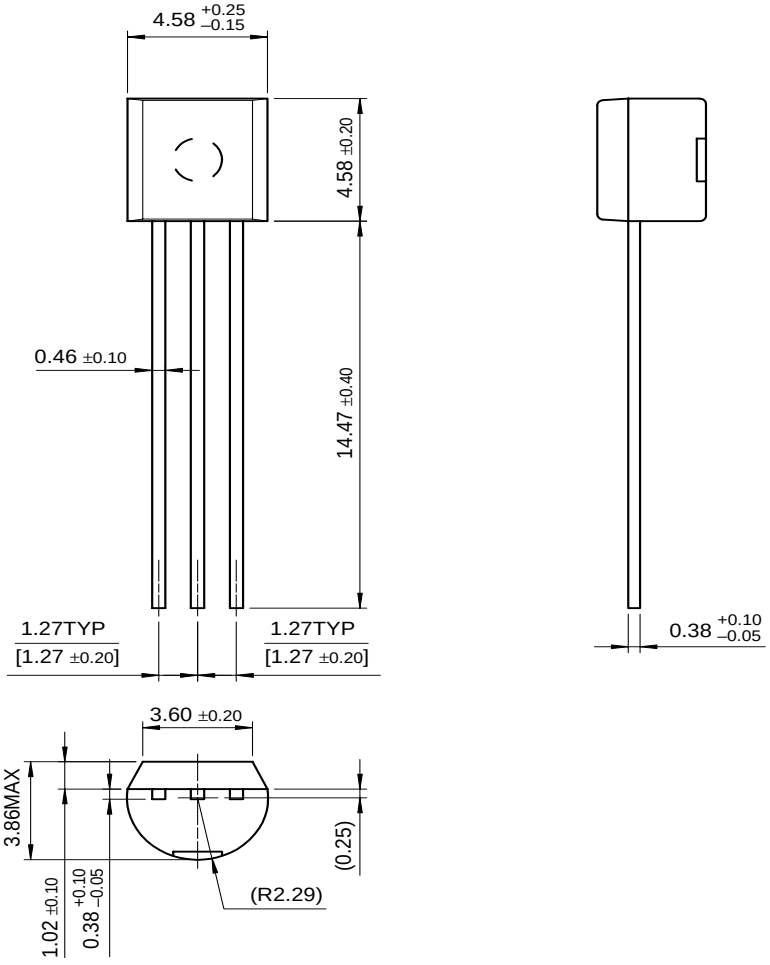

Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
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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