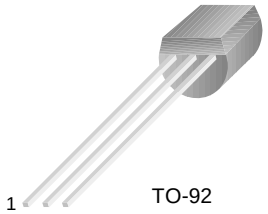
FAIRCHILD
SEMICONDUCTOR®

KSP44/45

High Voltage Transistor

- Collector-Emitter Voltage: V_{CEO}=KSP44: 400V
  KSP45: 350V
- Collector Power Dissipation: P_C (max)=625mW



TO-92

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		
	: KSP44	500	V
	: KSP45	400	V
V_{CEO}	Collector-Emitter Voltage		
	: KSP44	400	V
	: KSP45	350	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	300	mA
P_C	Collector Power Dissipation (T_a=25°C)	625	mW
P_C	Collector Power Dissipation (T_C=25°C)	1.5	W
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_B=0			
	: KSP44		500		V
	: KSP45		400		V
BV_{CEO}	* Collector -Emitter Breakdown Voltage	I_C=1mA, I_B=0			
	: KSP44		400		V
	: KSP45		350		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=100μA, I_C=0	6		V
I_{CBO}	Collector Cut-off Current				
	: KSP44	V_{CB}=400V, I_E=0		0.1	μA
	: KSP45	V_{CB}=320V, I_E=0		0.1	μA
I_{CES}	Collector Cut-off Current				
	: KSP44	V_{CE}=400V, I_B=0		0.5	μA
	: KSP45	V_{CE}=320V, I_B=0		0.5	μA
I_{EBO}	Emitter Cut-off Current	V_{EB}=4V, I_C=0		0.1	μA
h_{FE}	* DC Current Gain	V_{CE}=10V, I_C=1mA	40		
		V_{CE}=10V, I_C=10mA	50	200	
		V_{CE}=10V, I_C=50mA	45		
		V_{CE}=10V, I_C=100mA	40		
V_{CE} (sat)	* Collector-Emitter Saturation Voltage	I_C=1mA, I_B=0.1mA		0.4	V
		I_C=10mA, I_B=1mA		0.5	V
		I_C=50mA, I_B=5mA		0.75	V
V_{BE} (sat)	* Base-Emitter Saturation Voltage	I_C=10mA, I_B=1mA		0.75	V
C_{ob}	Output Capacitance	V_{CB}=20V, I_E=0, f=1MHz		7	pF

* Pulse Test: PW≤300μs, Duty Cycle≤2%

Typical Characteristics

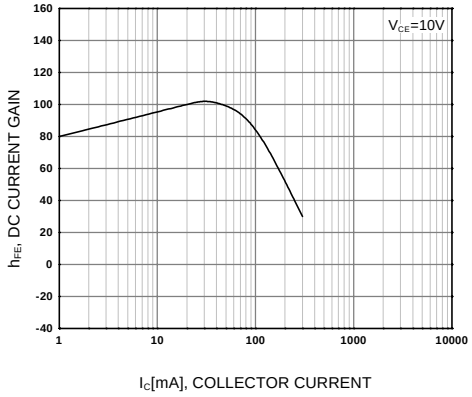


Figure 1. DC current Gain

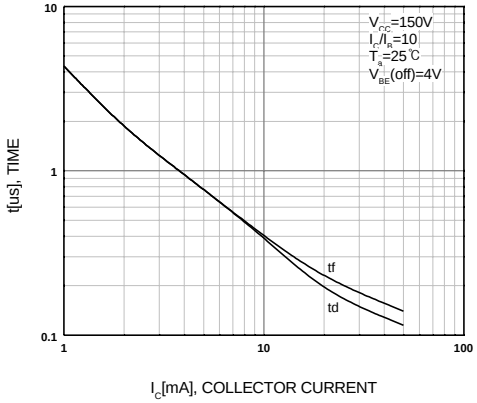


Figure 2. Turn-On Switching Times

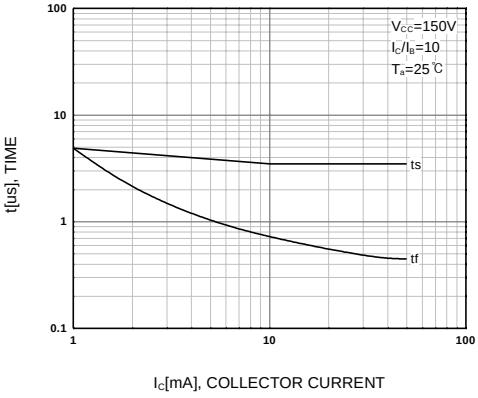


Figure 3. Turn-Off Switching Times

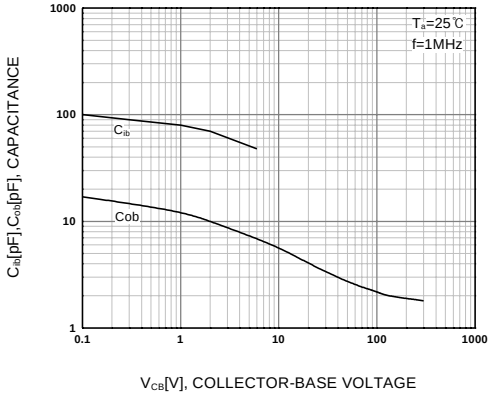


Figure 4. Capacitance

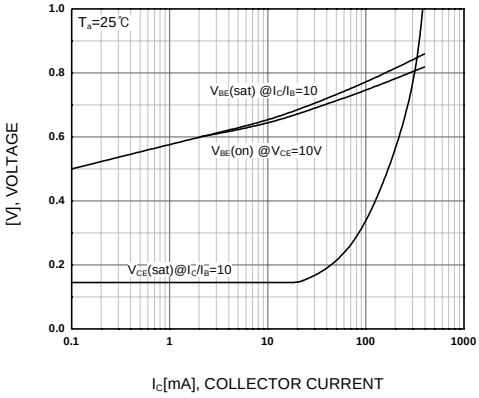


Figure 5. On Voltage

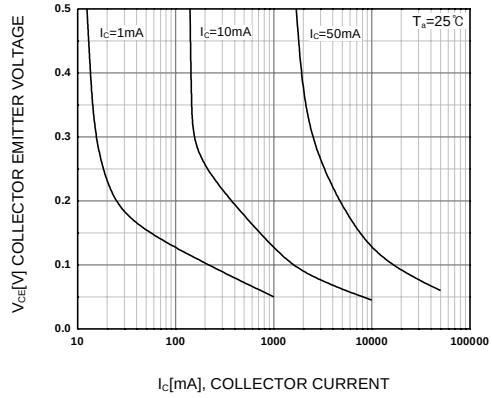


Figure 6. Collector Saturation Region

Typical Characteristics (Continued)

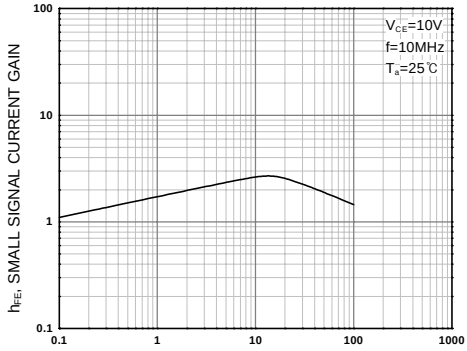


Figure 7. High Frequency Current Gain

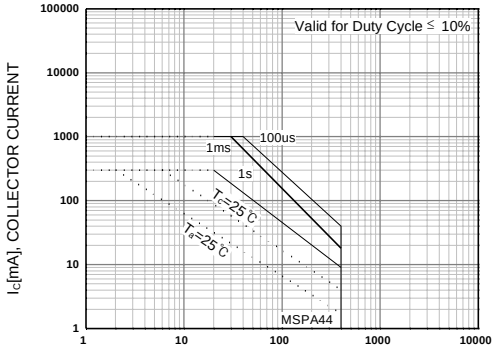
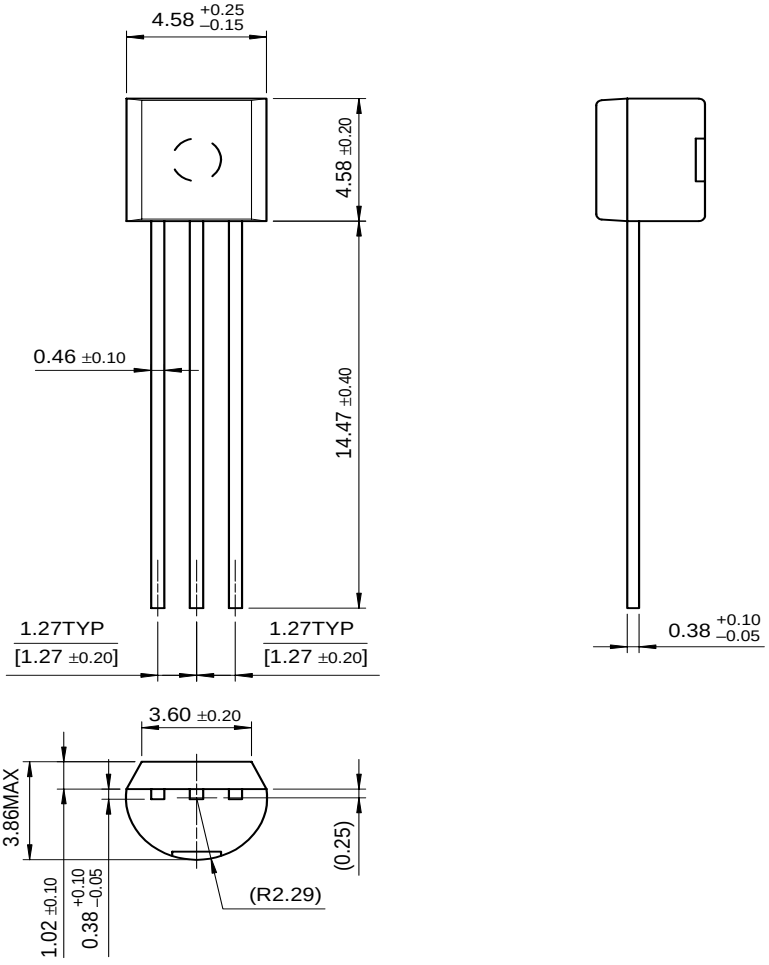


Figure 8. Safe Operating Area

Package Dimensions

TO-92



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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