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December 2015

KSP94
PNP Epitaxial Silicon Transistor

Features

- High Voltage Transistor
- High Collector-Emitter Voltage: V_{CEO} = -400 V
- Low Collector-Emitter Saturation Voltage
- Complement to KSP44

TO-92
1. Emitter
2. Base
3. Collector

Straight Lead Bulk Packing | **Bent Lead Tape & Reel Ammo Packing**

Ordering Information

Part Number	Top Mark	Package	Packing Method
KSP94BU	KSP94	TO-92 3L	Bulk
KSP94TA	KSP94	TO-92 3L	Ammo

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-400	V
V_{CEO}	Collector-Emitter Voltage	-400	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current	-300	mA
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Thermal Characteristics[1]

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Max.	Unit
P_D	Total Device Dissipation	625	mW
	Derate Above 25°C	5.0	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	200	°C/W

Note:

1. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = -100 µA, I_E = 0	-400			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = -1 mA, I_B = 0	-400			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = -10 µA, I_C = 0	-6			V
I_{CBO}	Collector Cut-Off Current	V_{CB} = -300 V, I_E = 0			-100	nA
I_{CES}	Collector Cut-Off Current	V_{CE} = -400 V, V_{BE} = 0			-1	µA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = -4 V, I_C = 0			-100	nA
h_{FE}	DC Current Gain	V_{CE} = -10 V, I_C = -1 mA	40			
		V_{CE} = -10 V, I_C = -10 mA	50		300	
		V_{CE} = -10 V, I_C = -50 mA	45			
		V_{CE} = -10 V, I_C = -100 mA	40			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = -10 mA, I_B = -1 mA			-500	mV
		I_C = -50 mA, I_B = -5 mA			-750	
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = -10 mA, I_B = -1 mA			-750	mV
C_{ob}	Output Capacitance	V_{CB} = -20 V, I_E = 0, f = 1 MHz		7		pF

Typical Performance Characteristics

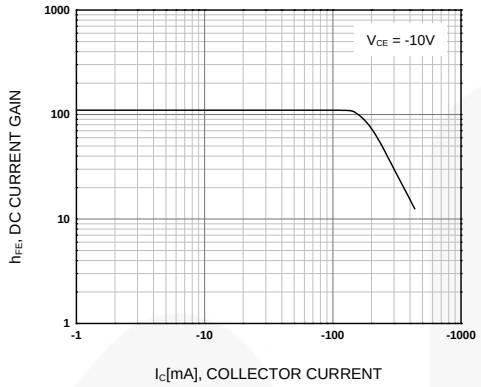

Figure 1. DC Current Gain

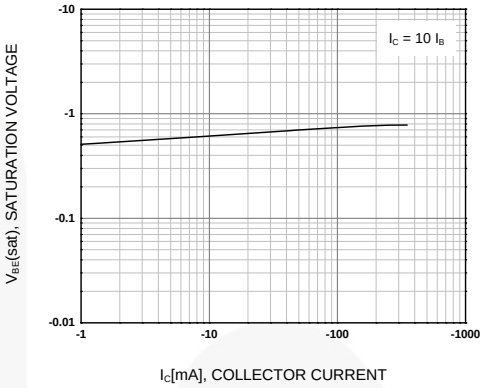

Figure 2. Base-Emitter Saturation Voltage

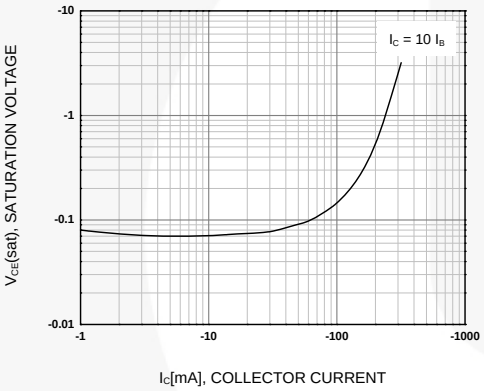

Figure 3. Collector-Emitter Saturation Voltage

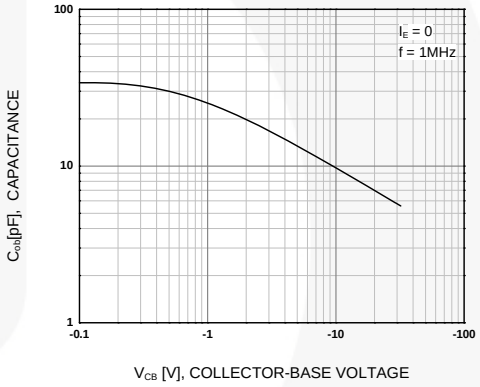

Figure 4. Collector Output Capacitance

Physical Dimensions

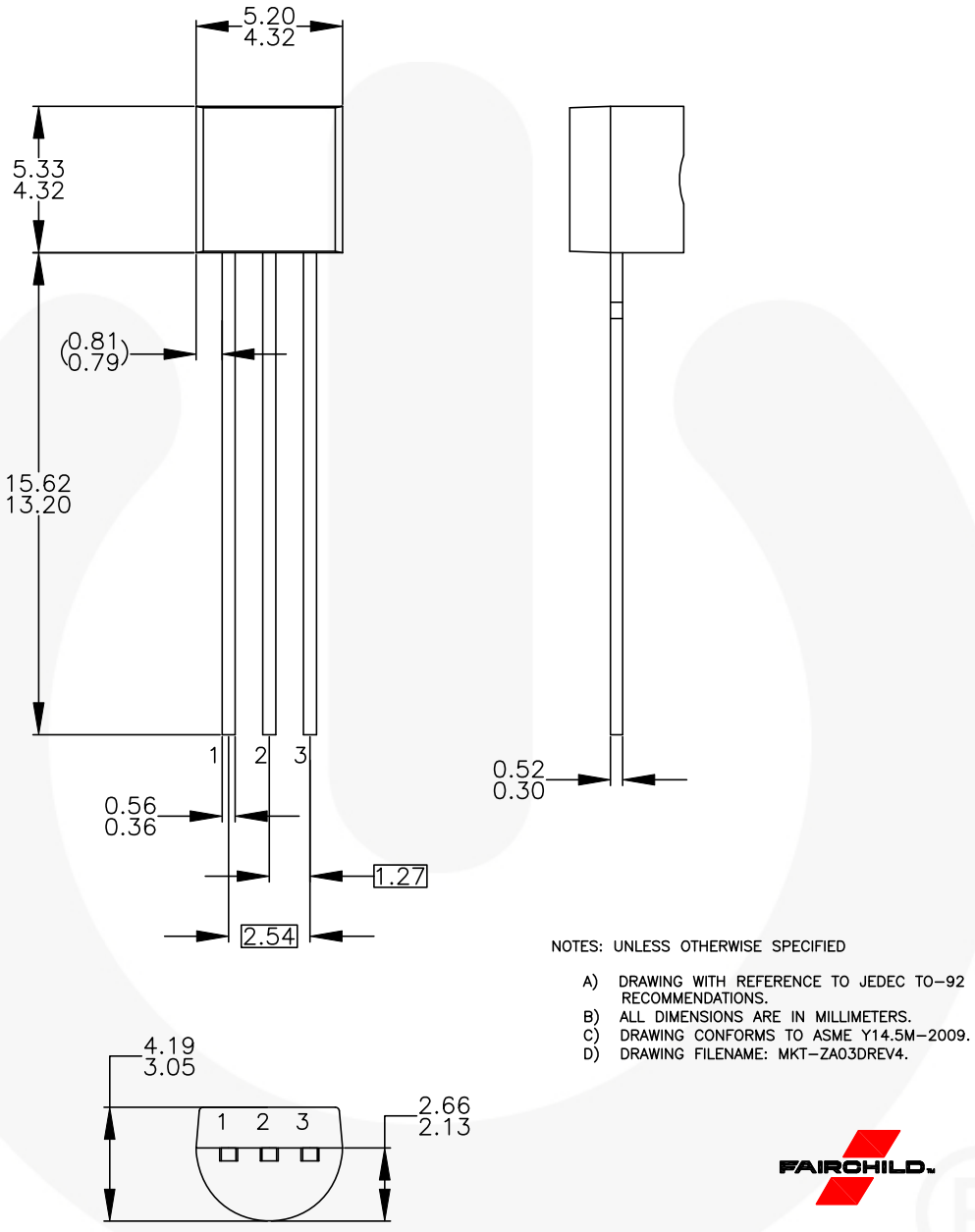

Figure 5. 3-Lead, TO-92, JEDEC TO-92 Compliant Straight Lead Configuration, Bulk Type

Physical Dimensions (Continued)

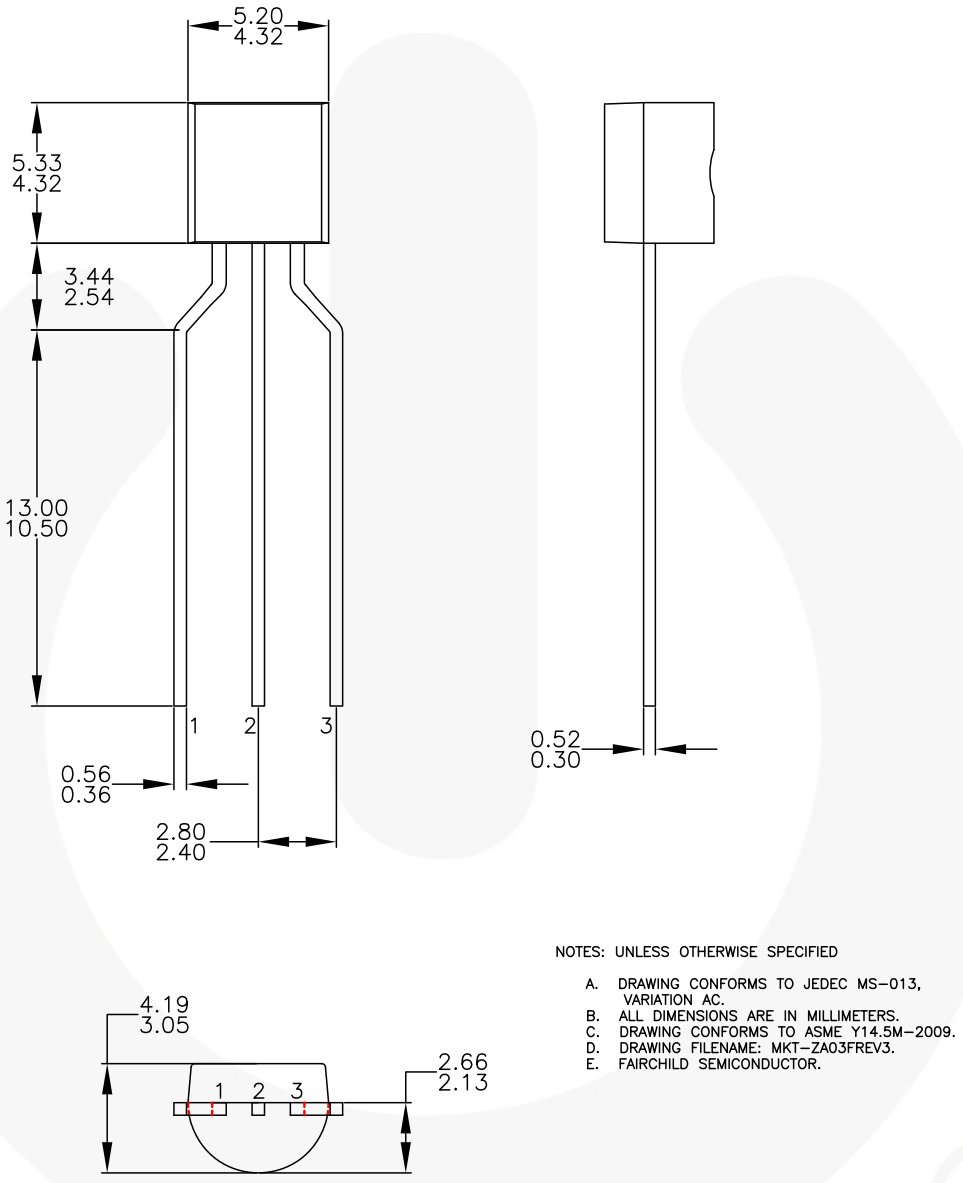

Figure 6. 3-Lead, TO-92, Molded, 0.2 In Line Spacing Lead Form, Ammo Type

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