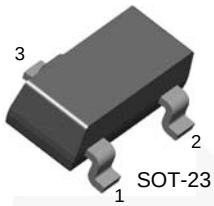
July 2014

KST92
PNP Epitaxial Silicon Transistor

Features

- High-Voltage Transistor



SOT-23

1. Base 2. Emitter 3. Collector

Ordering Information

Part Number	Marking	Package	Packing Method
KST92MTF	2D	SOT-23 3L	Tape and Reel

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	-300	V
V_{CEO}	Collector-Emitter Voltage	-300	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current - Continuous	-500	mA
T_J , T_{STG}	Junction and Storage Temperature Range	-55 to +150	°C

Thermal Characteristics

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

Symbol	Parameter	Max.	Unit
P_C	Collector Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

Electrical Characteristics

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

Symbol	Parameter	Conditions	Min.	Max.	Unit
V_{CBO}	Collector-Base Breakdown Voltage	I_C = -100 μA, I_E = 0	-300		V
V_{CEO}	Collector-Emitter Breakdown Voltage[1]	I_C = -1 mA, I_B = 0	-300		V
V_{EBO}	Emitter-Base Breakdown Voltage	I_E = -100 μA, I_C = 0	-5		V
I_{CBO}	Collector Cut-Off Current	V_{CB} = -200 V, I_E = 0		-0.25	μA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = -5 V, I_C = 0		-0.1	μA
h_{FE}	DC Current Gain[1]	V_{CE} = -10 V, I_C = -1 mA	25		
		V_{CE} = -10 V, I_C = -10 mA	40		
		V_{CE} = -10 V, I_C = -30 mA	25		
V_{CE}(sat)	Collector-Emitter Saturation Voltage[1]	I_C = -20 mA, I_B = -2 mA		-0.5	V
V_{BE}(sat)	Base-Emitter Saturation Voltage[1]	I_C = -20 mA, I_B = -2 mA		-0.9	V
C_{ob}	Output Capacitance	V_{CB} = -20 V, I_E = 0, f = 1 MHz		6	pF
f_T	Current Gain Bandwidth Product	V_{CE} = -20 V, I_C = -10 mA, f = 100 MHz	50		MHz

Note:

1. Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2%.

Typical Performance Characteristics

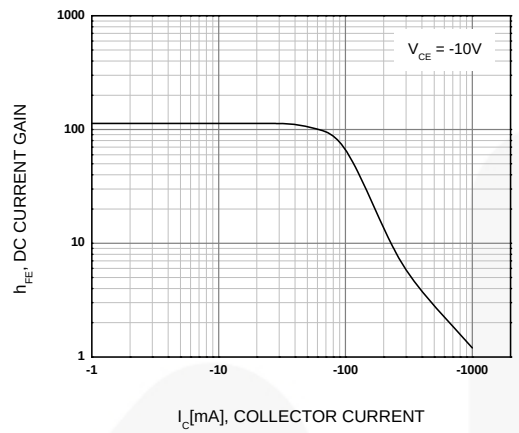


Figure 1. DC Current Gain

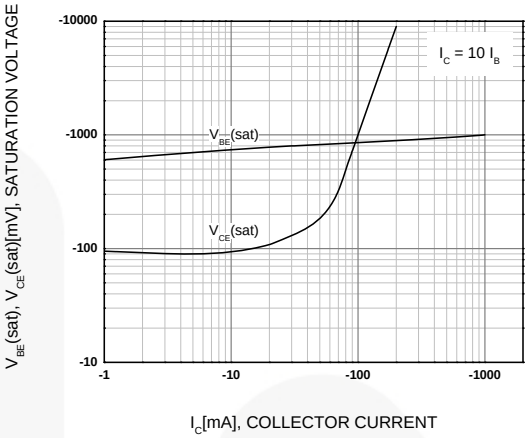


Figure 2. Saturation Voltage

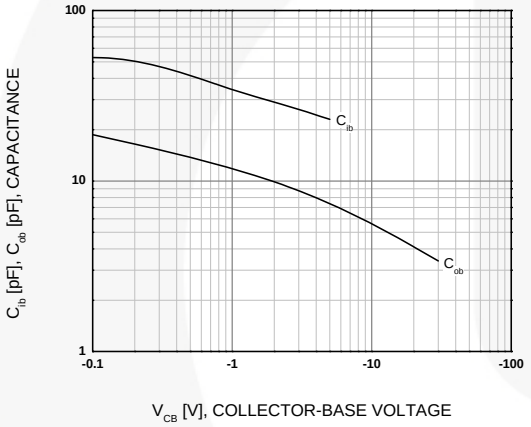


Figure 3. Capacitance

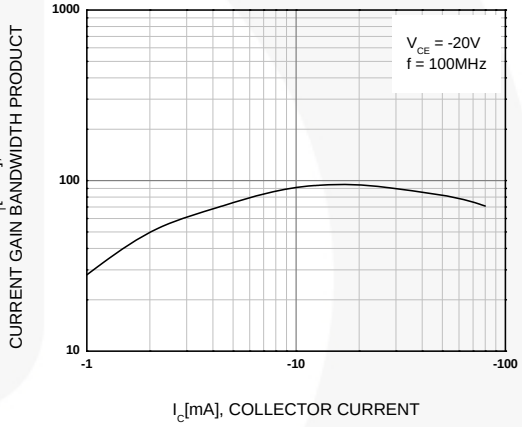


Figure 4. Current Gain Bandwidth Product

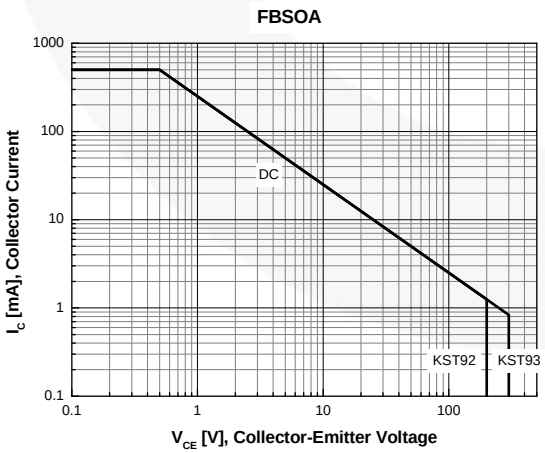


Figure 5. Active-Regio Safe Operating Area

Physical Dimensions

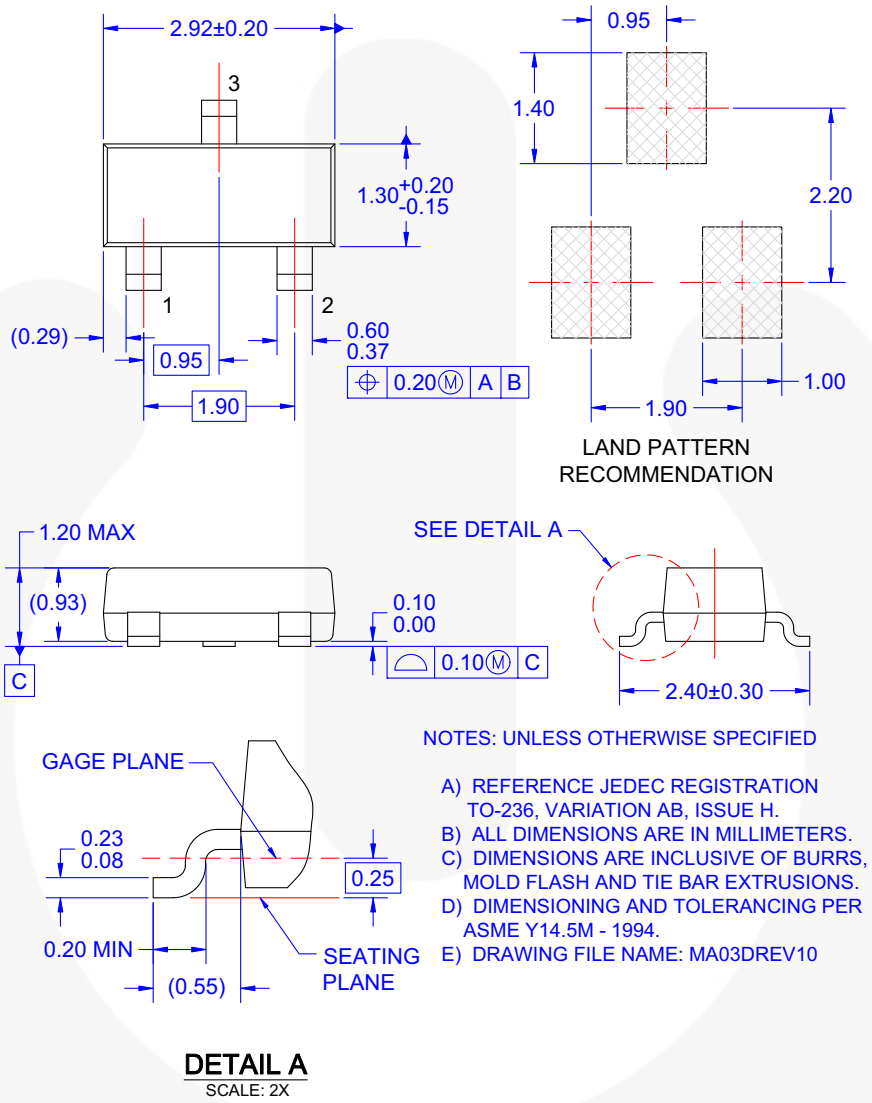


Figure 6. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE (ACTIVE)

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