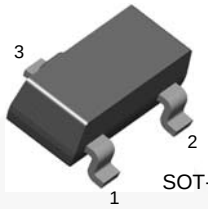
October 2014

KST10
NPN Epitaxial Silicon Transistor

Features

- VHF / UHF Transistor



SOT-23

1. Base 2. Emitter 3. Collector

Ordering Information

Part Number	Marking	Package	Packing Method
KST10MTF	3E	SOT-23 3L	Tape and Reel

Absolute Maximum Ratings(1)

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	30	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	3	V
T_{STG}	Storage Temperature	150	°C

Note:

1. Refer to KSP10 for graphs.

Thermal Characteristics(2)

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

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	350	mW
	Derate Above 25°C	2.8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	357	°C/W

Note:

2. 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.

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Electrical Characteristics

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

Symbol	Parameter	Conditions	Min.	Max.	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = 100 μA, I_E = 0	30		V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 1 mA, I_B = 0	25		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 10 μA, I_C = 0	3		V
I_{CBO}	Collector Cut-Off Current	V_{CB} = 25 V, I_E = 0		100	nA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 2 V, I_C = 0		100	nA
h_{FE}	DC Current Gain	V_{CE} = 10 V, I_C = 4 mA	60		
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 4 mA, I_B = 0.4 mA		0.5	V
V_{BE}(on)	Base-Emitter On Voltage	V_{CE} = 10 V, I_C = 4 mA		0.95	V
f_T	Current Gain Bandwidth Product	V_{CE} = 10 V, I_C = 4 mA, f = 100 MHz	650		MHz
C_{ob}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1 MHz		0.7	pF
C_{rb}	Common-Base Feedback Capacitance	V_{CB} = 10 V, I_E = 0, f = 1 MHz		0.65	pF
$C_{c\cdot rbb'}$	Collector-Base Time Constant	V_{CB} = 10 V, I_C = 4 mA, f = 31.8 MHz		9	pF

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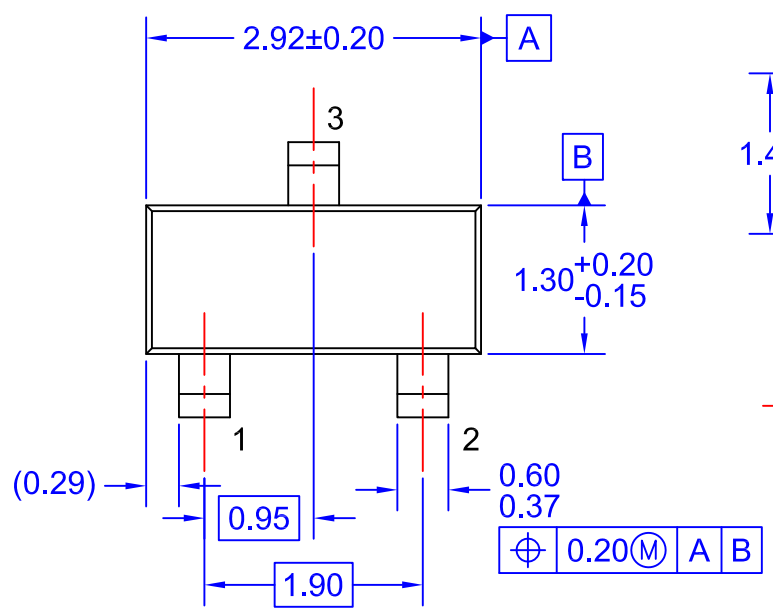
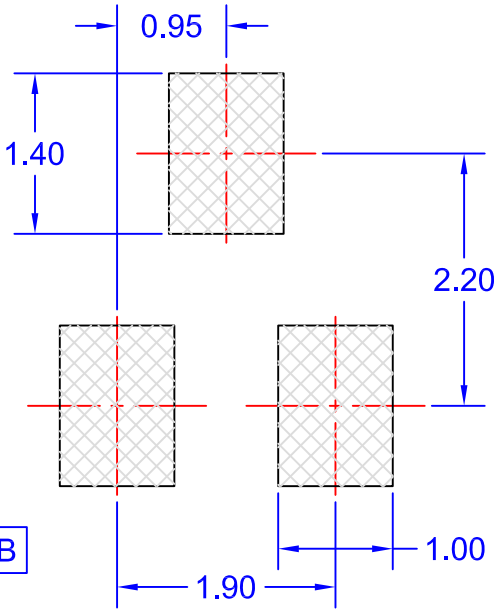
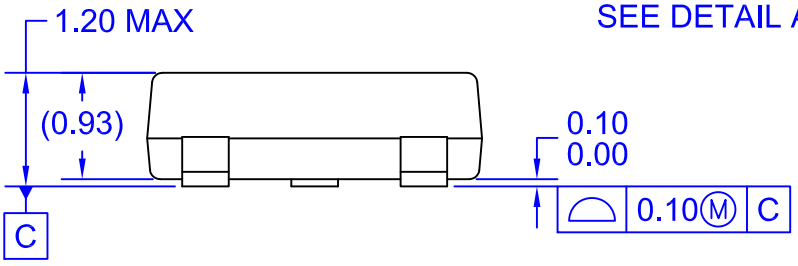
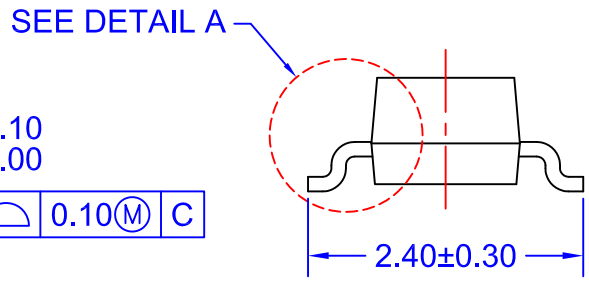
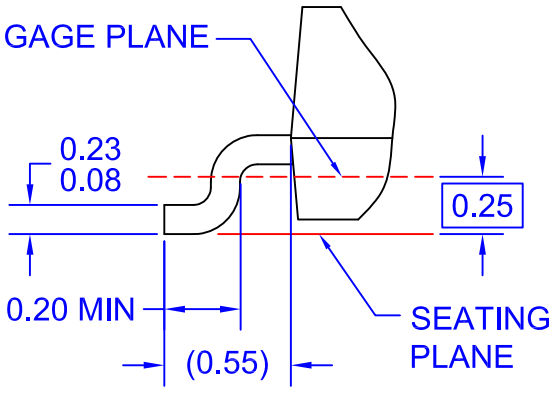




LAND PATTERN
RECOMMENDATION







DETAIL A
SCALE: 2X

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