

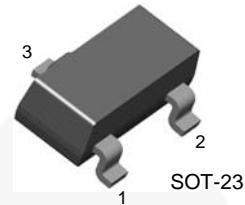


October 2014

# KST10 NPN Epitaxial Silicon Transistor

## Features

- VHF / UHF Transistor



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<sup>(1)</sup>

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  $T_A = 25^\circ\text{C}$  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	$^\circ\text{C}$

### Note:

- Refer to KSP10 for graphs.

## Thermal Characteristics<sup>(2)</sup>

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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

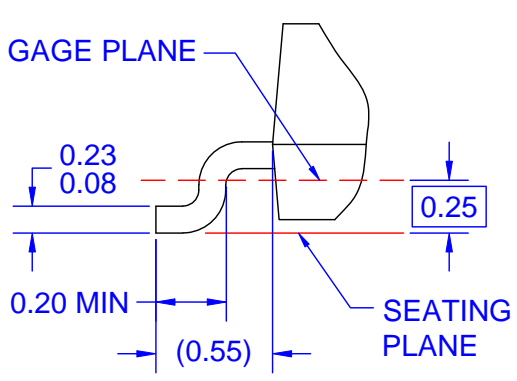
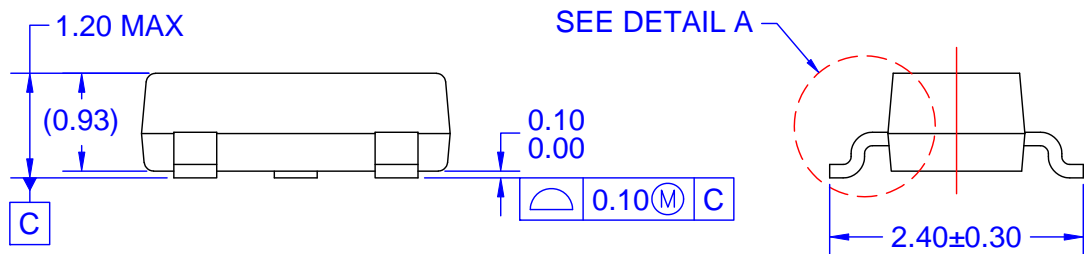
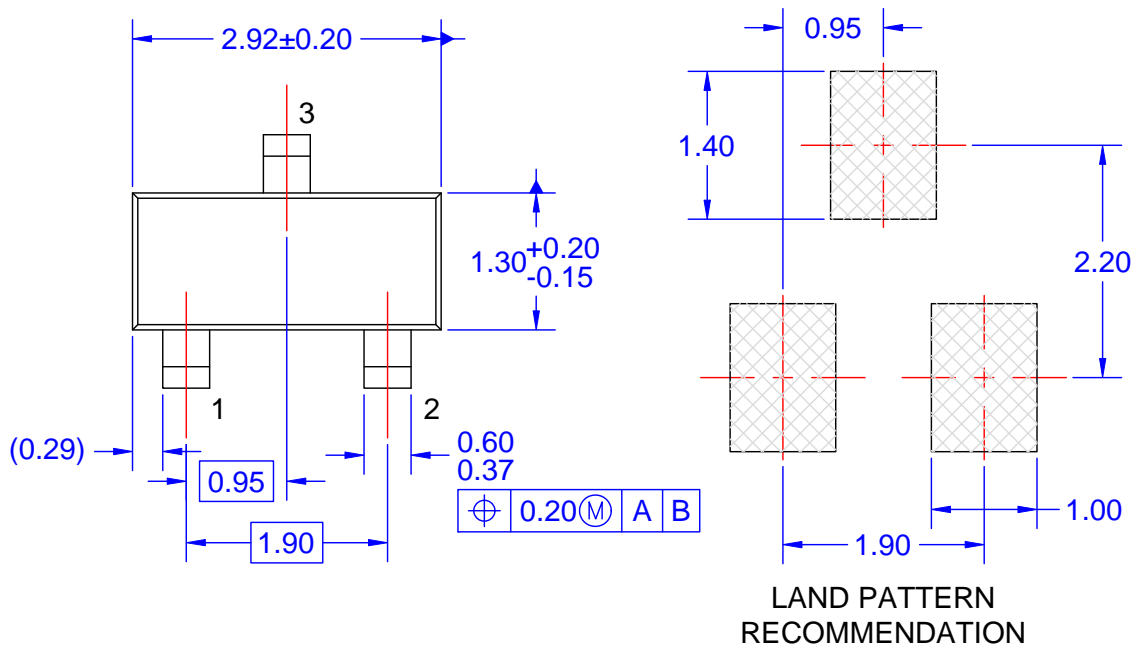
### Note:

- 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  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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



**DETAIL A**  
SCALE: 2X

NOTES: UNLESS OTHERWISE SPECIFIED

- A) REFERENCE JEDEC REGISTRATION TO-236, VARIATION AB, ISSUE H.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS ARE INCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR EXTRUSIONS.
- D) DIMENSIONING AND TOLERANCING PER ASME Y14.5M - 1994.
- E) DRAWING FILE NAME: MA03DREV10



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