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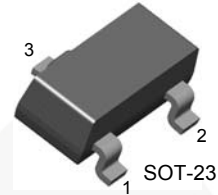


February 2015

# KST2907A PNP Epitaxial Silicon Transistor

## Features

- General-Purpose Transistor



1. Base 2. Emitter 3. Collector

## Ordering Information

Part Number	Marking	Package	Packing Method
KST2907AMTF	2F	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  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	-60	V
$V_{CEO}$	Collector-Emitter Voltage	-60	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-600	mA
$T_{STG}$	Storage Temperature	150	$^\circ\text{C}$

## Thermal Characteristics<sup>(1)</sup>

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

Symbol	Parameter	Max.	Unit
$P_D$	Total Device 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:

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

Symbol	Parameter	Conditions	Min.	Max.	Unit
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -10\ \mu\text{A}, I_E = 0$	-60		V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage <sup>(2)</sup>	$I_C = -10\ \text{mA}, I_B = 0$	-60		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -10\ \mu\text{A}, I_C = 0$	-5		V
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = -50\ \text{V}, I_E = 0$		-0.01	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE} = -10\ \text{V}, I_C = -0.1\ \text{mA}$	75		
		$V_{CE} = -10\ \text{V}, I_C = -1.0\ \text{mA}$	100		
		$V_{CE} = -10\ \text{V}, I_C = -10\ \text{mA}$	100		
		$V_{CE} = -10\ \text{V}, I_C = -150\ \text{mA}^{(2)}$	100	300	
		$V_{CE} = -10\ \text{V}, I_C = -500\ \text{mA}^{(2)}$	50		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage <sup>(2)</sup>	$I_C = -150\ \text{mA}, I_B = -15\ \text{mA}$		-0.4	V
		$I_C = -500\ \text{mA}, I_B = -50\ \text{mA}$		-1.6	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage <sup>(2)</sup>	$I_C = -150\ \text{mA}, I_B = -15\ \text{mA}$		-1.3	V
		$I_C = -500\ \text{mA}, I_B = -50\ \text{mA}$		-2.6	
$f_T$	Current Gain Bandwidth Product	$I_C = -50\ \text{mA}, V_{CE} = -20\ \text{V}, f = 100\ \text{MHz}$	200		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10\ \text{V}, I_E = 0, f = 1.0\ \text{MHz}$		8	pF
$t_{ON}$	Turn-On Time	$V_{CC} = -30\ \text{V}, I_C = -150\ \text{mA}, I_{B1} = -15\ \text{mA}$		50	ns
$t_{OFF}$	Turn-Off Time	$V_{CC} = -6\ \text{V}, I_C = -150\ \text{mA}, I_{B1} = I_{B2} = -15\ \text{mA}$		110	ns

### Note:

2. Pulse test: pulse width  $\leq 300\ \mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

## Typical Performance Characteristics

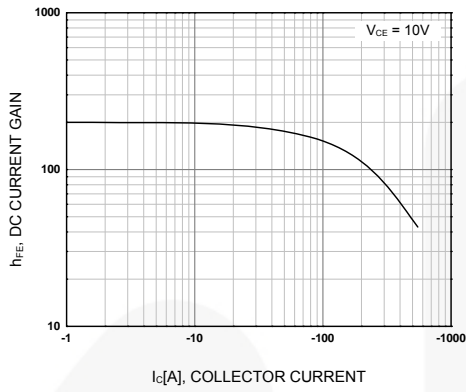


Figure 1. DC Current Gain

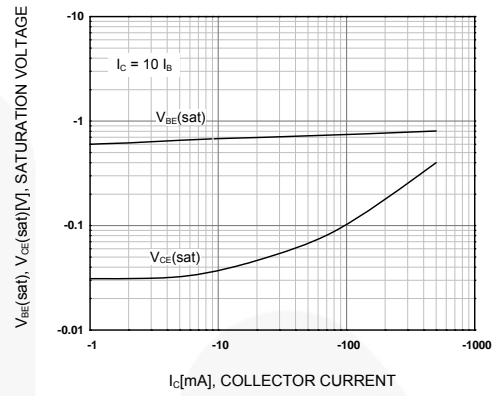


Figure 2. Collector-Emitter Saturation Voltage and Base-Emitter Saturation Voltage

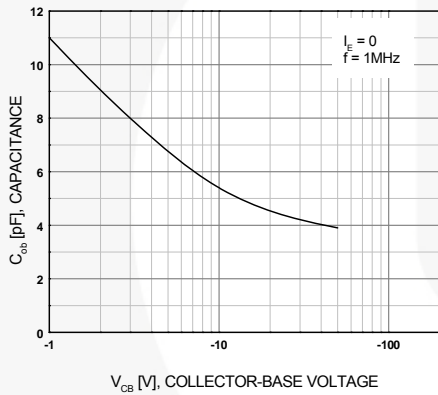


Figure 3. Output Capacitance

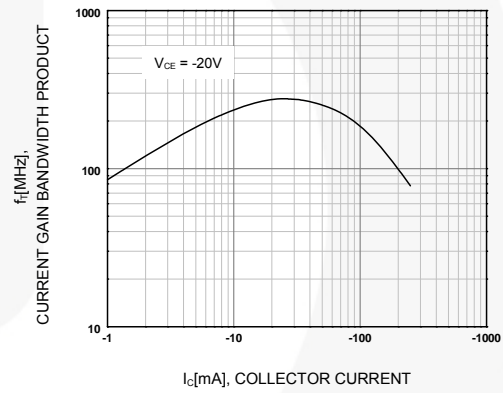
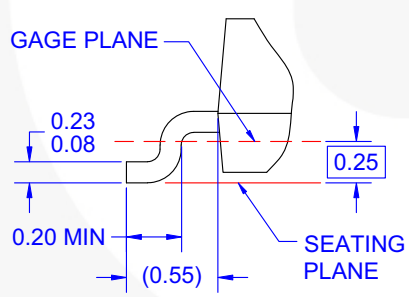
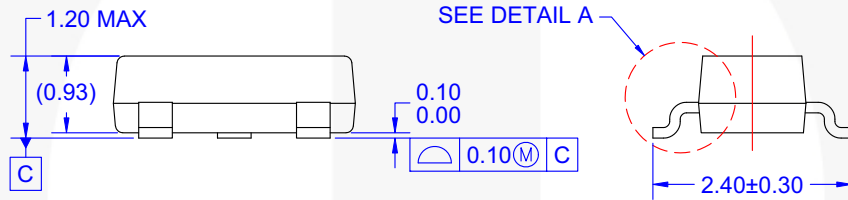
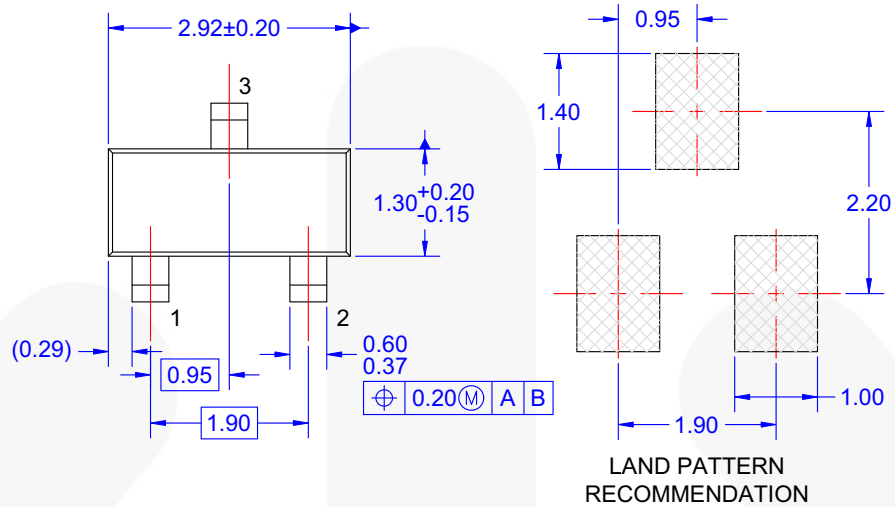


Figure 4. Current Gain Bandwidth Product

Physical Dimensions



- 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

**DETAIL A**  
SCALE: 2X

Figure 5. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE





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