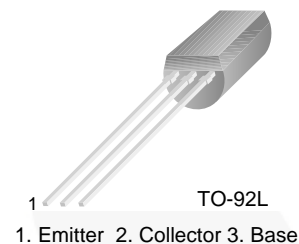


# KSA1013

## PNP Epitaxial Silicon Transistor

### Features

- Color TV Audio Output
- Color TV Vertical Deflection Output



### Ordering Information

Part Number	Top Mark	Package	Packing Method
KSA1013YBU	A1013	TO-92 3L	Bulk
KSA1013OBU			Ammo
KSA1013YTA			
KSA1013OTA			

### 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	Ratings	Units
$V_{CBO}$	Collector-Base Voltage	-160	V
$V_{CEO}$	Collector-Emitter Voltage	-160	V
$V_{EBO}$	Emitter-Base Voltage	-6	V
$I_C$	Collector Current	-1	A
$I_B$	Base Current	-0.5	A
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 to 150	$^\circ\text{C}$

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

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

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	900	mW
	Derate Above $T_A = 25^\circ\text{C}$	7.2	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	139	$^\circ\text{C/W}$

**Note:**

1. PCB board size: FR-4 76 x 114 x 0.6T mm<sup>3</sup> (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	Test Condition	Min.	Typ.	Max.	Units
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -150\text{ V}, I_E = 0$			-1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = -6\text{ V}, I_C = 0$			-1	$\mu\text{A}$
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{ mA}, I_B = 0$	-160			V
$h_{FE}$	DC Current Gain	$V_{CE} = -5\text{ V}, I_C = -200\text{ mA}$	60		320	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -500\text{ mA}, I_B = -50\text{ mA}$			-1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -5\text{ V}, I_C = -5\text{ mA}$	-0.45		-0.75	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -5\text{ V}, I_C = -200\text{ mA}$	15	50		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$			35	pF

 **$h_{FE}$  Classification**

Classification	R	O	Y
$h_{FE}$	60 ~ 120	100 ~ 200	160 ~ 320

## Typical Performance Characteristics

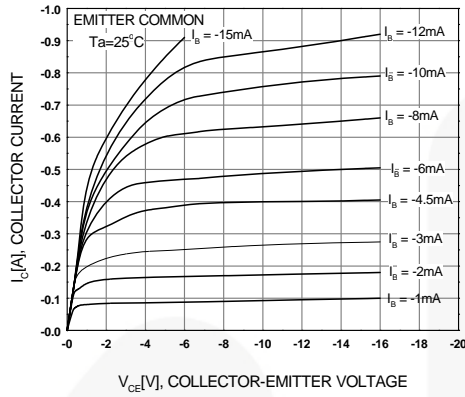


Figure 1. Static Characteristic

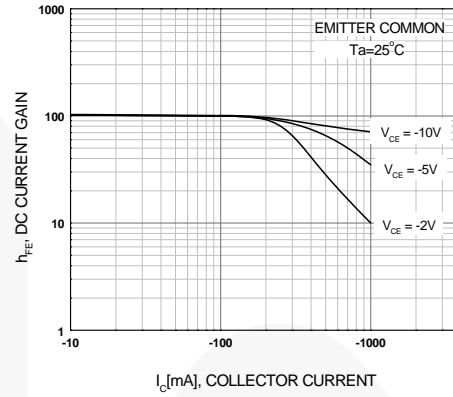


Figure 2. DC Current Gain

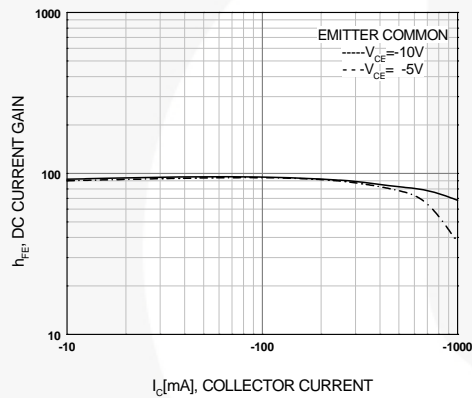


Figure 3. DC Current Gain

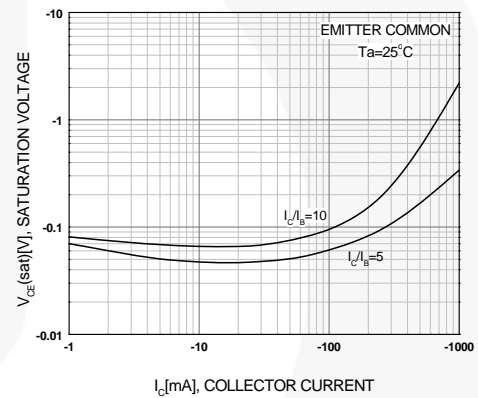


Figure 4. Collector-Emitter Saturation Voltage

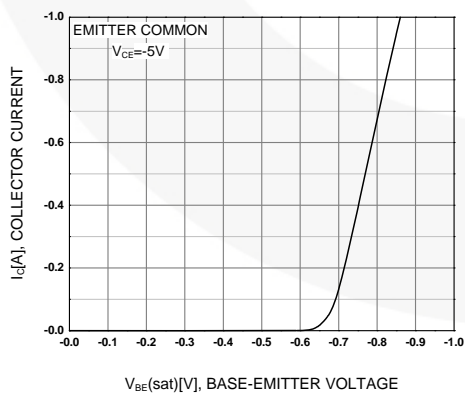


Figure 5. Base-Emitter On Voltage

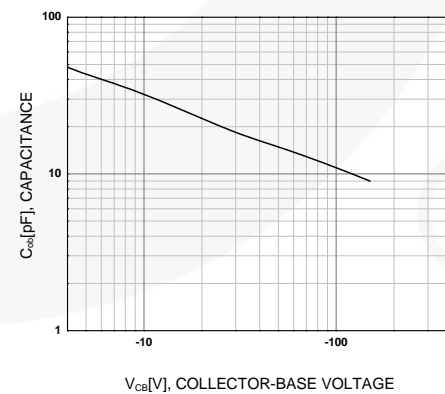


Figure 6. Collector Output Capacitance

# Typical Performance Characteristics (Continued)

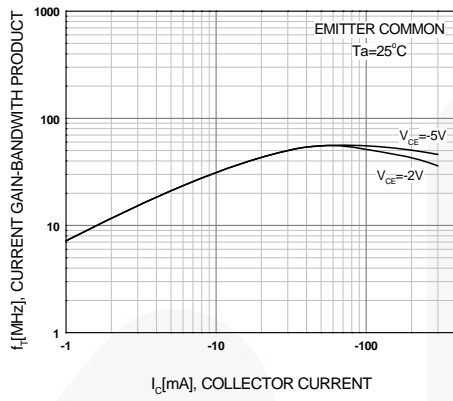


Figure7. Current Gain Bandwidth Product

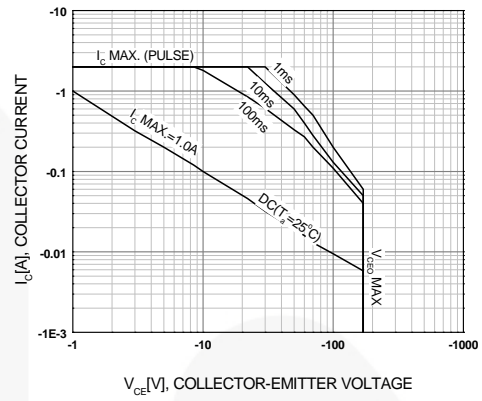
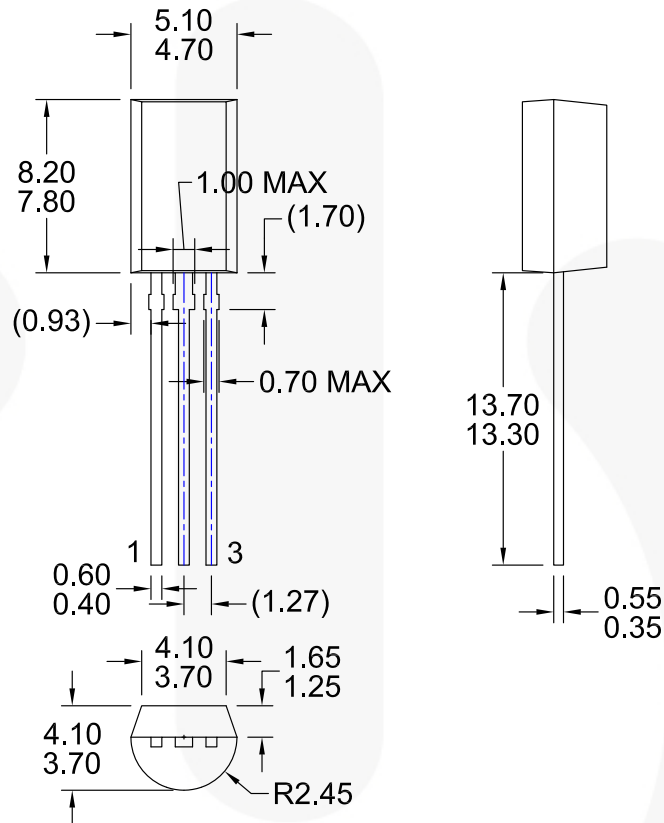


Figure 8. Safe Operating Area

## Physical Dimensions

## TO-92



- NOTES: UNLESS OTHERWISE SPECIFIED
- A) THIS PACKAGE DOES NOT CONFORM TO ANY STANDARD
  - B) ALL DIMENSIONS ARE IN MILLIMETERS.
  - C) DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.
  - D) FORMERLY NAMED BD1409
  - E) DRAWING FILE NAME: MKT-ZA03HREV1

Figure 9. 3-LEAD, TO-92L, 8 MM LONG BODY

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	MicroPak™	SPM®	
Fairchild®	MicroPak2™	STEALTH™	UHC®
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FACT Quiet Series™	MotionMax™	SuperSOT™-3	UniFET™
FACT®	mWSaver®	SuperSOT™-6	VCX™
FAST®	OptoHiT™	SuperSOT™-8	VisualMax™
FastvCore™	OPTOLOGIC®	SupreMOS®	VoltagePlus™
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