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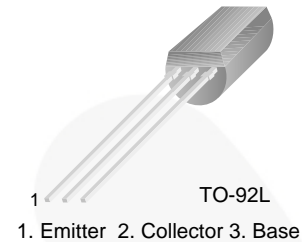
October 2014

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	Value	Unit
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	$^\circ\text{C}$

KSA1013 — PNP Epitaxial Silicon Transistor

Thermal Characteristics⁽¹⁾

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	$^\circ\text{C}/\text{W}$

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.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-Off Current	$V_{CB} = -150\text{ V}, I_E = 0$			-1	μA
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = -6\text{ V}, I_C = 0$			-1	μA
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

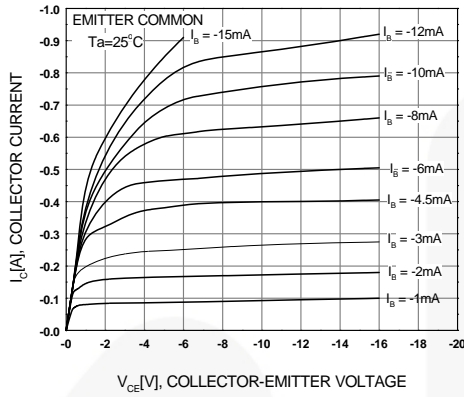


Figure 1. Static Characteristic

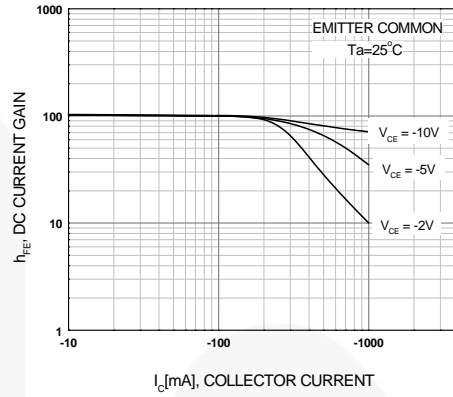


Figure 2. DC Current Gain

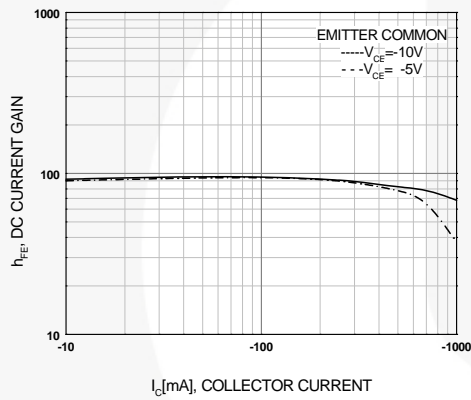


Figure 3. DC Current Gain

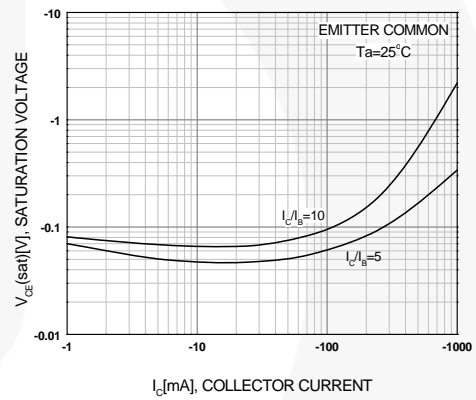


Figure 4. Collector-Emitter Saturation Voltage

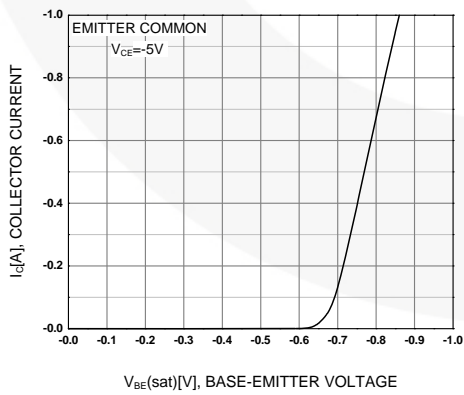


Figure 5. Base-Emitter On Voltage

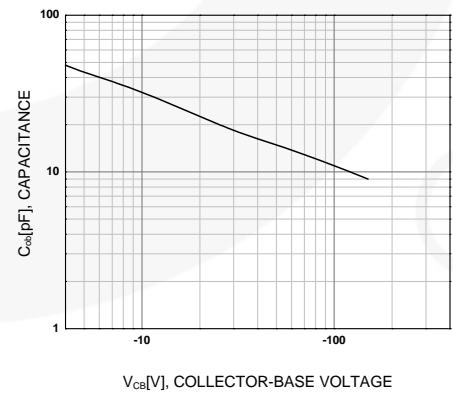


Figure 6. Collector Output Capacitance

Typical Performance Characteristics (Continued)

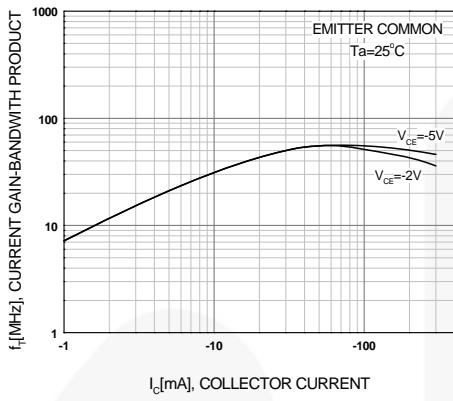


Figure 7. Current Gain Bandwidth Product

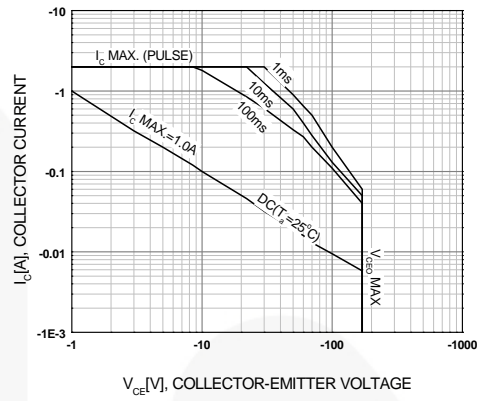
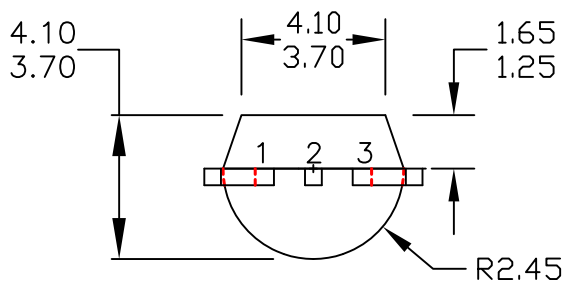
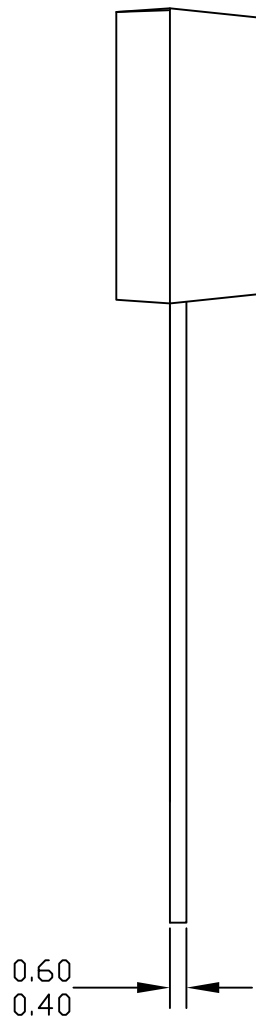
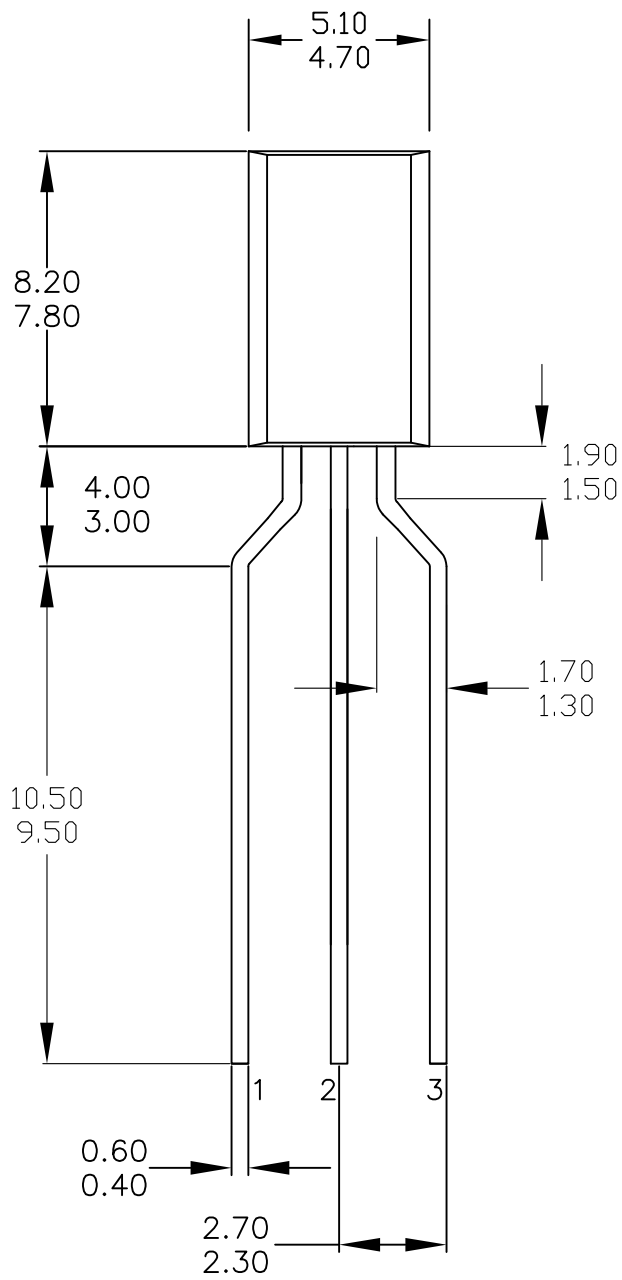


Figure 8. Safe Operating Area

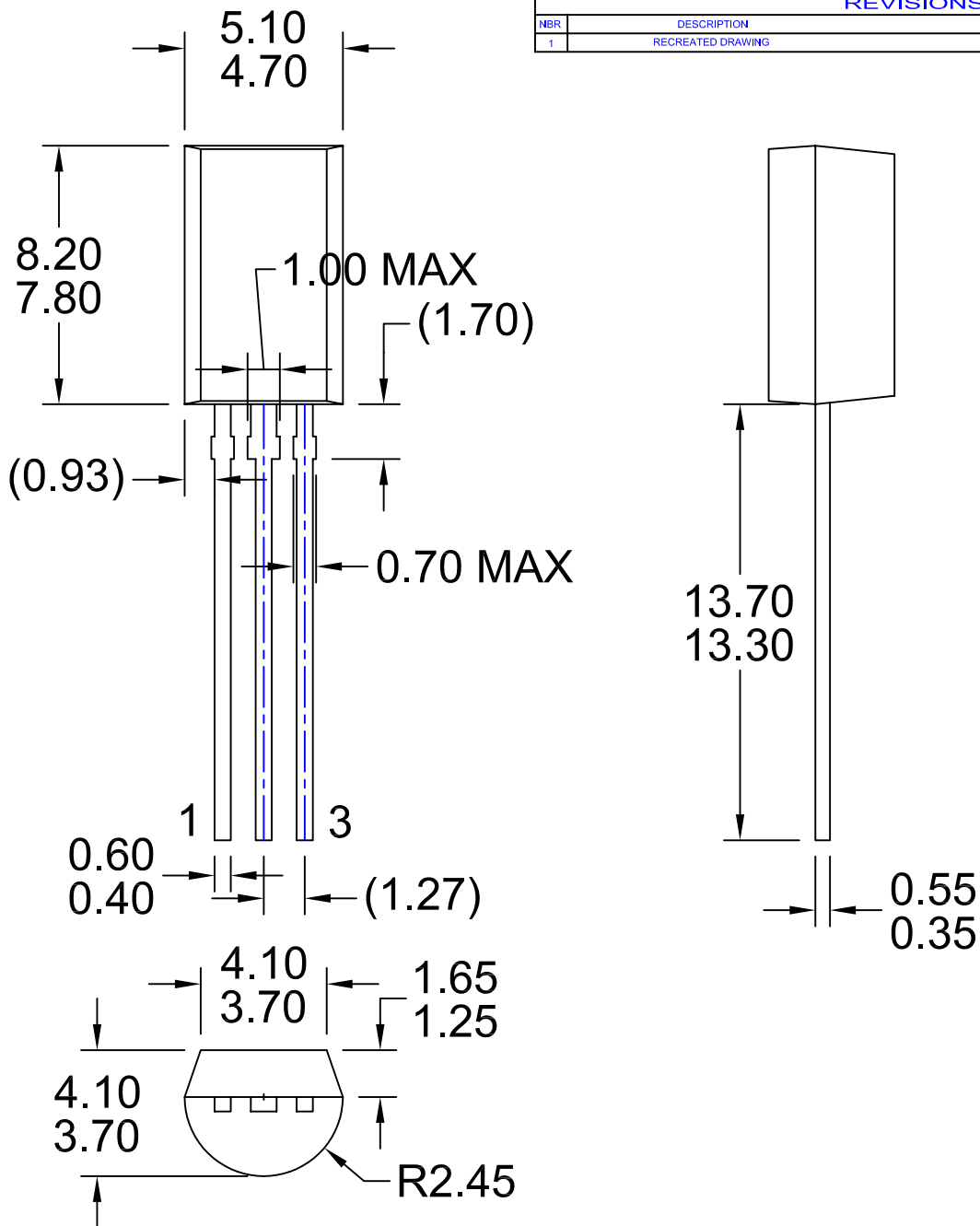


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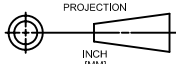
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CHECKED: H.ALLEN		10 DEC 08			
APPROVED:					
			3LD, TO92L, 8MM TALL BODY		
		SCALE	SIZE	DRAWING NUMBER	REV
		1:1	N/A	MKT-ZA03H	1
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