

## **KSA1013**

**Color TV Audio Output**  
**Color TV Vertical Deflection Output**



### **PNP EPITAXIAL SILICON TRANSISTOR**

**Absolute Maximum Ratings**  $T_a=25^\circ\text{C}$  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
$P_C$	Collector Power Dissipation	900	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

**Electrical Characteristics**  $T_a=25^\circ\text{C}$  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	$V_{EB} = -6\text{mA}$ , $I_C = 0$			-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	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = -500\text{mA}$ , $I_B = -50\text{mA}$			-1.5	V
$V_{BE}(\text{on})$	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	$\text{pF}$

### **$h_{FE}$ Classification**

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

## Typical Characteristics

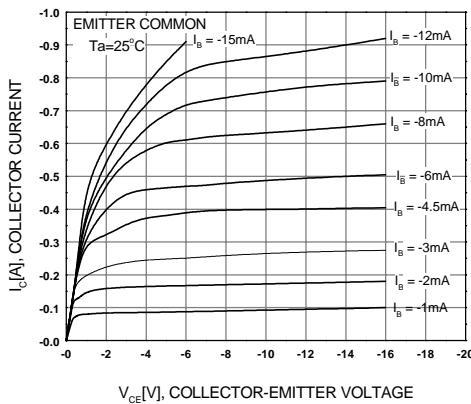


Figure 1. Static Characteristic

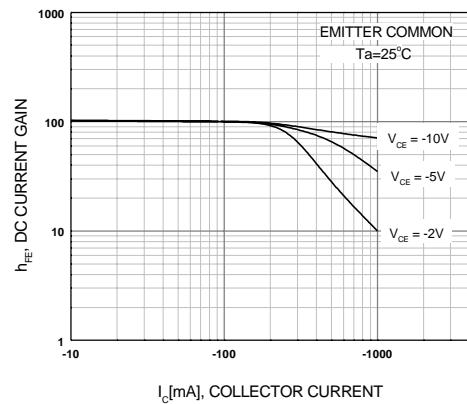


Figure 2. DC current Gain

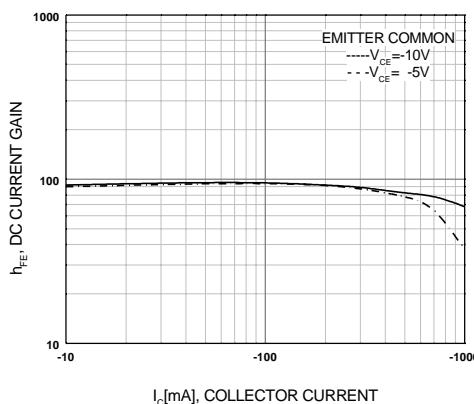


Figure 3. DC current Gain

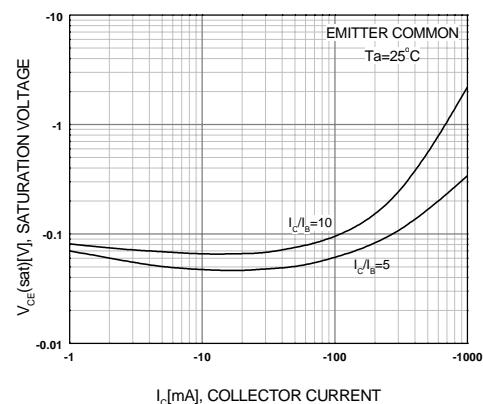


Figure 4. Collector-Emitter Saturation Voltage

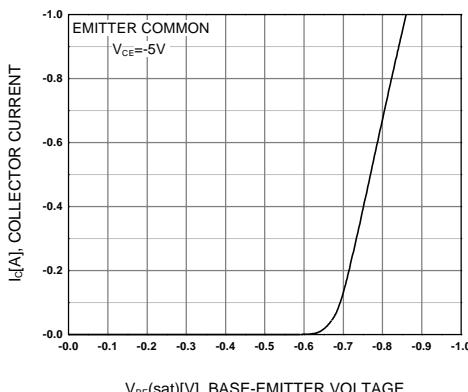


Figure 5. Base-Emitter On Voltage

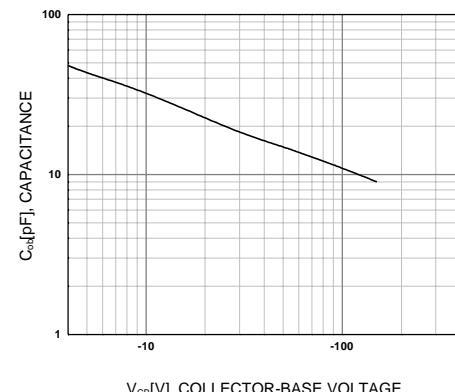


Figure 6. Collector Output Capacitance

## Typical Characteristics (Continued)

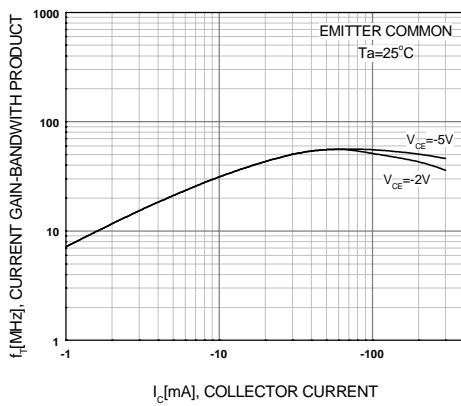


Figure 7. Current Gain Bandwidth Product

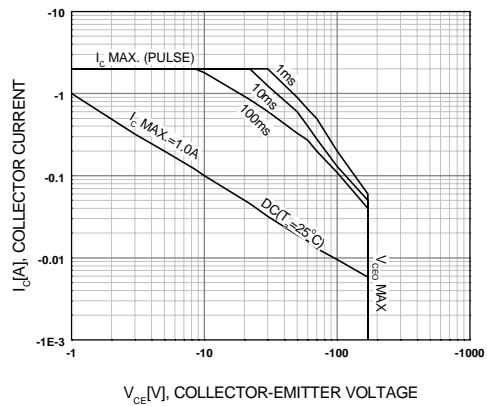
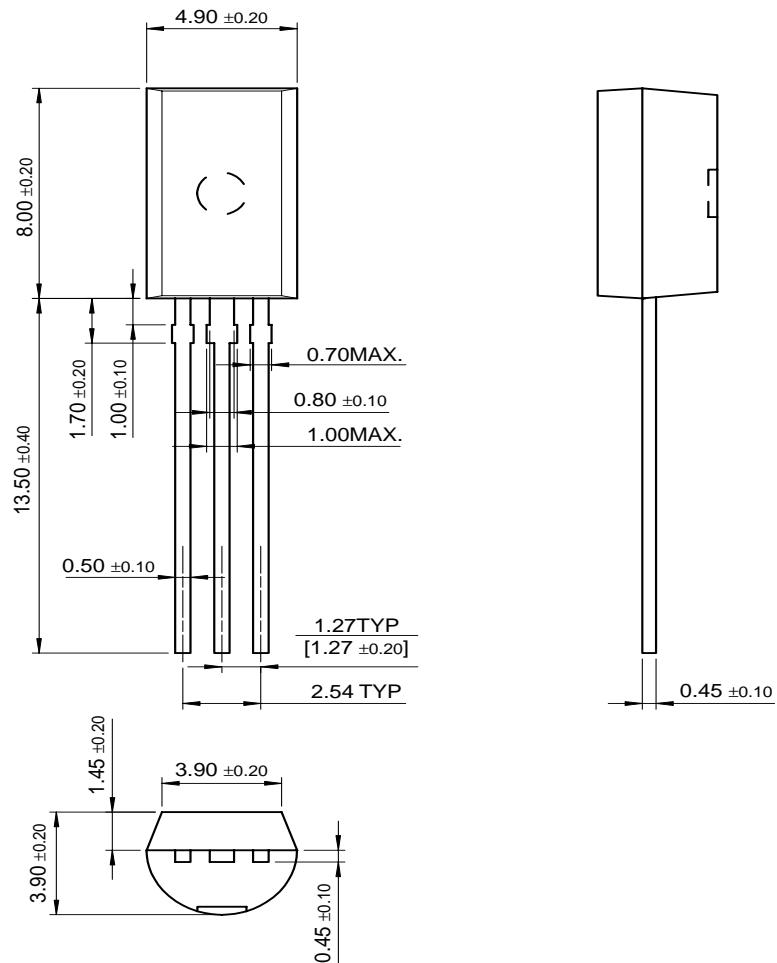


Figure 8. Safe Operating Area

## Package Dimensions

TO-92L



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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