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September 2013

KSA1013
PNP Epitaxial Silicon Transistor

Features

- Color TV Audio Output
- Color TV Vertical Deflection Output



TO-92L

1. Emitter 2. Collector 3. Base

Ordering Information

Part Number	Top Mark	Package	Packing Method
KSA1013YBU	A1013	TO-92 3L	Bulk
KSA1013OBU			
KSA1013YTA			Ammo
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°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	°C
T_{STG}	Storage Temperature	-55 to 150	°C

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Thermal Characteristics[1]

Values are at T_A = 25°C unless otherwise noted.

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

Note:

1. PCB board size: FR-4 76 x 114 x 0.6T mm^3(3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted**.**

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	V_{CB} = -150 V, I_E = 0			-1	μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = -6 V, I_C = 0			-1	μA
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = -10 mA, I_B = 0	-160			V
h_{FE}	DC Current Gain	V_{CE} = -5 V, I_C = -200 mA	60		320	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = -500 mA, I_B = -50 mA			-1.5	V
V_{BE}(on)	Base-Emitter On Voltage	V_{CE} = -5 V, I_C = -5 mA	-0.45		-0.75	V
f_T	Current Gain Bandwidth Product	V_{CE} = -5 V, I_C = -200 mA	15	50		MHz
C_{ob}	Output Capacitance	V_{CB} = -10 V, I_E = 0, f = 1 MHz			35	pF

h_{FE} Classification

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

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Typical Performance Characteristics

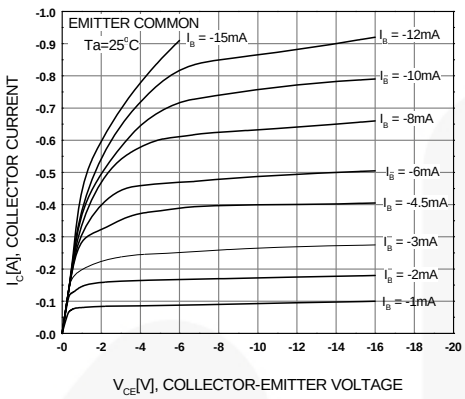


Figure 1. Static Characteristic

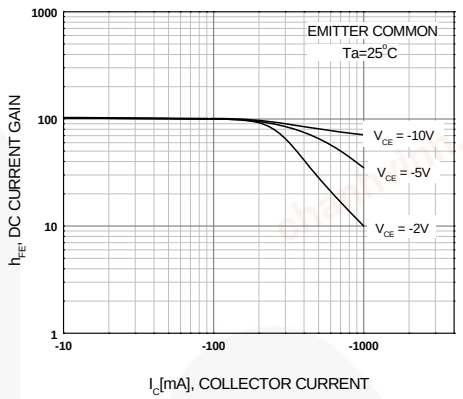


Figure 2. DC Current Gain

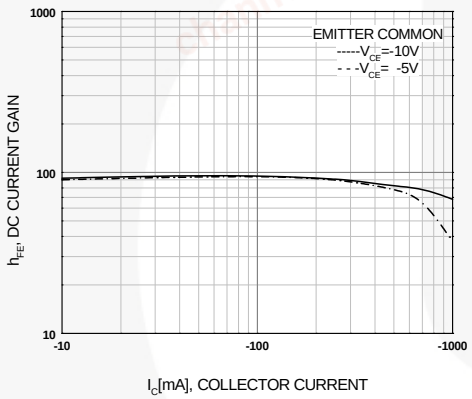


Figure 3. DC Current Gain

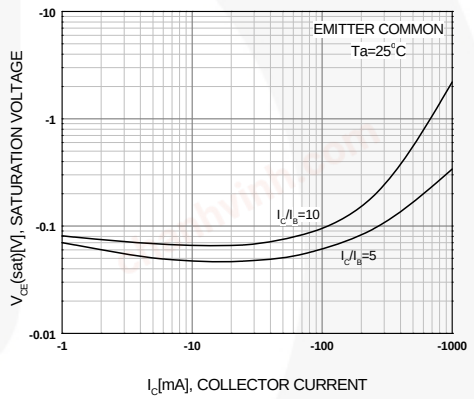


Figure 4. Collector-Emitter Saturation Voltage

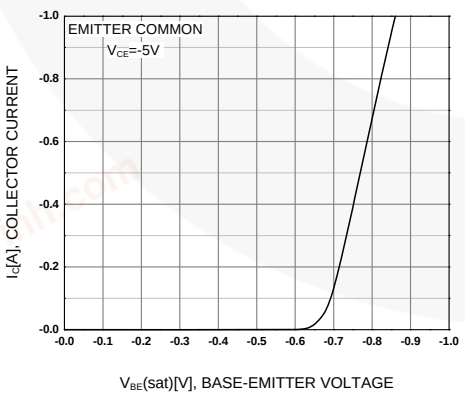


Figure 5. Base-Emitter On Voltage

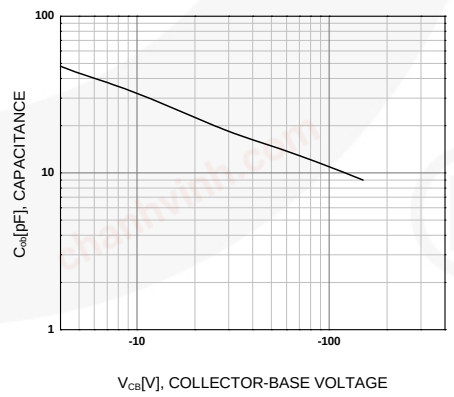


Figure 6. Collector Output Capacitance

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Typical Performance Characteristics (Continued)

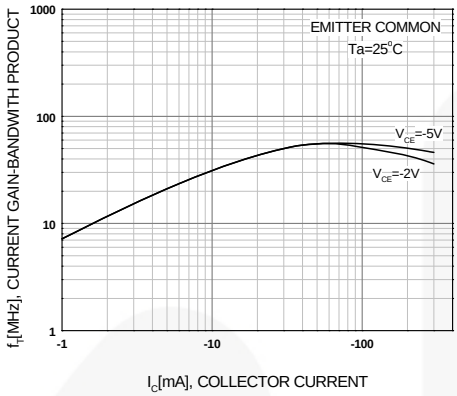


Figure7. Current Gain Bandwidth Product

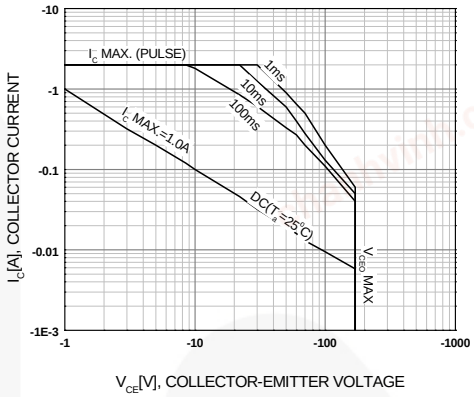


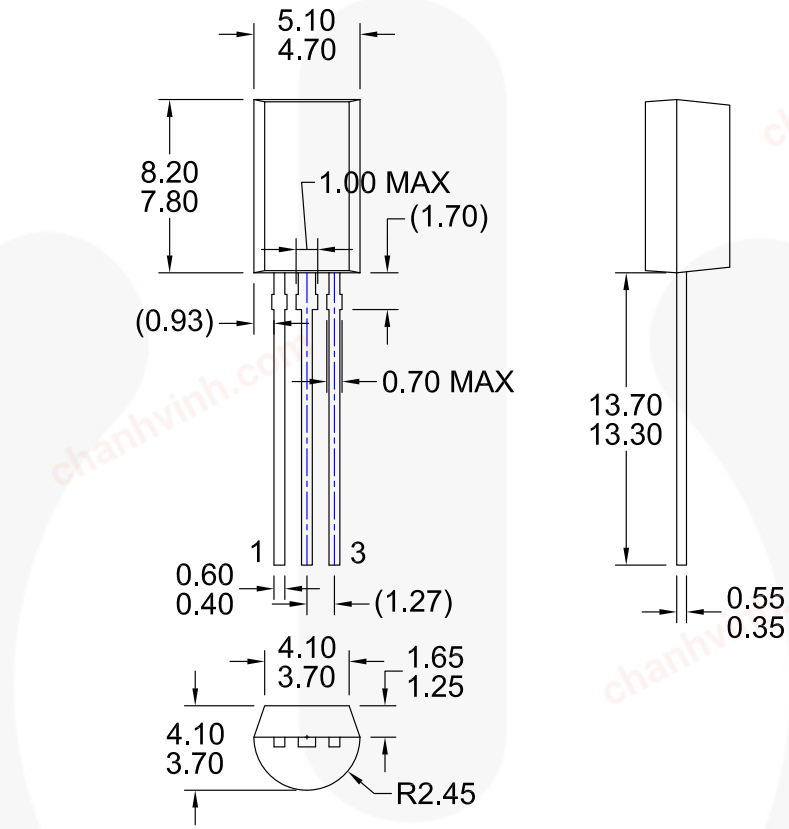
Figure 8. Safe Operating Area

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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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