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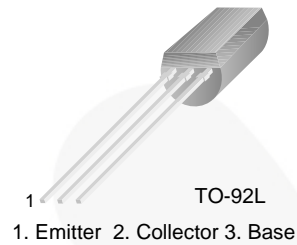


October 2014

# KSA928A PNP Epitaxial Silicon Transistor

## Features

- Audio Power Amplifier
- Complement to KSC2328A
- 3 W Output Application



## Ordering Information

Part Number	Top Mark	Package	Packing Method
KSA928AOTA	A928A O-	TO-92 3L	Ammo
KSA928AYTA	A928A Y-	TO-92 3L	Ammo

## Absolute Maximum Ratings<sup>(1), (2)</sup>

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	-30	V
$V_{CEO}$	Collector-Emitter Voltage	-30	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-2	A
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 to +150	$^\circ\text{C}$

### Notes:

1. These ratings are based on a maximum junction temperature of  $150^\circ\text{C}$ .
2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

**Thermal Characteristics<sup>(3)</sup>**

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

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	1000	mW
	Derate Above $25^\circ\text{C}$	8.0	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	125	$^\circ\text{C}/\text{W}$

**Note:**

3. 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**

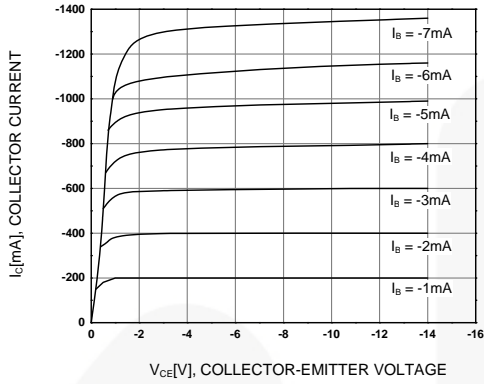
Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -100 \mu\text{A}$ , $I_E = 0$	-30			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10 \text{ mA}$ , $I_B = 0$	-30			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -1 \text{ mA}$ , $I_C = 0$	-5			V
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = -30 \text{ V}$ , $I_E = 0$			-100	nA
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = -5 \text{ V}$ , $I_C = 0$			-100	nA
$h_{FE}$	DC Current Gain	$V_{CE} = -2 \text{ V}$ , $I_C = -500 \text{ mA}$	100		320	
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -2 \text{ V}$ , $I_C = -500 \text{ mA}$			-1.0	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -1.5 \text{ A}$ , $I_B = -30 \text{ mA}$			-2.0	V
$C_{ob}$	Output Capacitance	$V_{CB} = -10 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$		48		pF
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -2 \text{ V}$ , $I_C = -500 \text{ mA}$		120		MHz

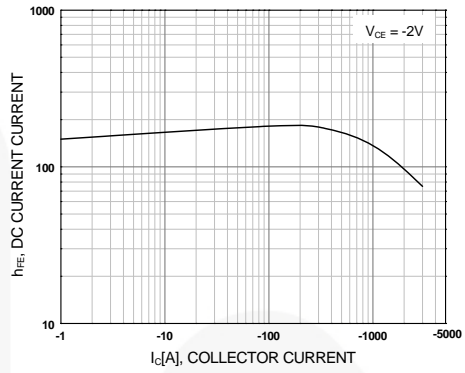
 **$h_{FE}$  Classification**

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

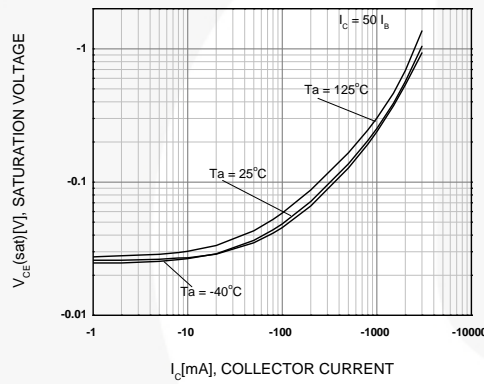
## Typical Performance Characteristics



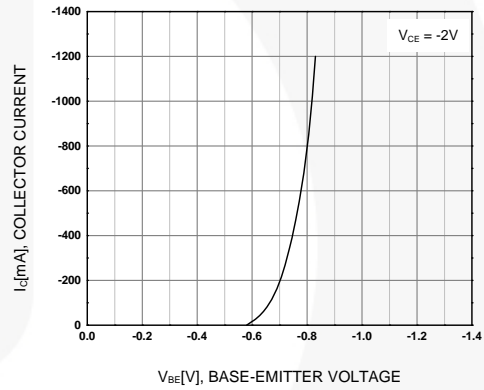
**Figure 1. Static Characteristic**



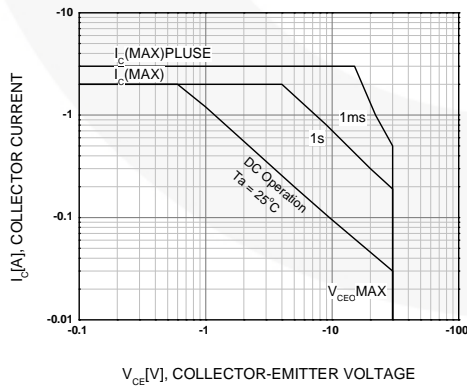
**Figure 2. DC Current Gain**



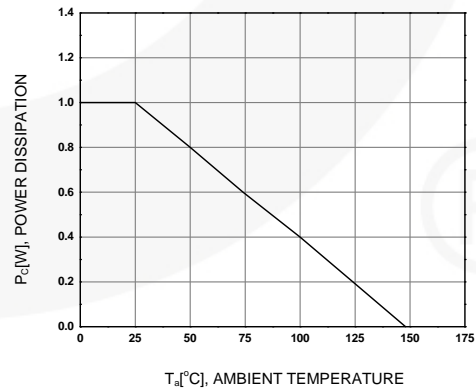
**Figure 3. Collector-Emitter Saturation Voltage**



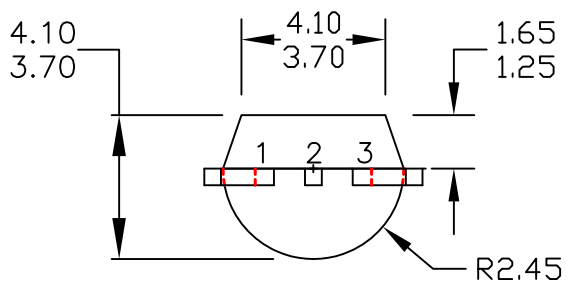
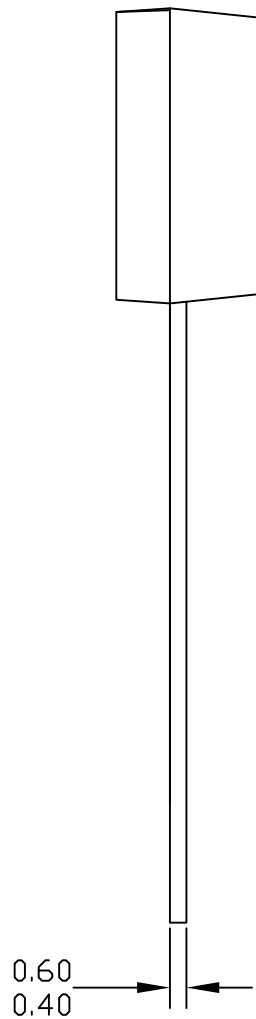
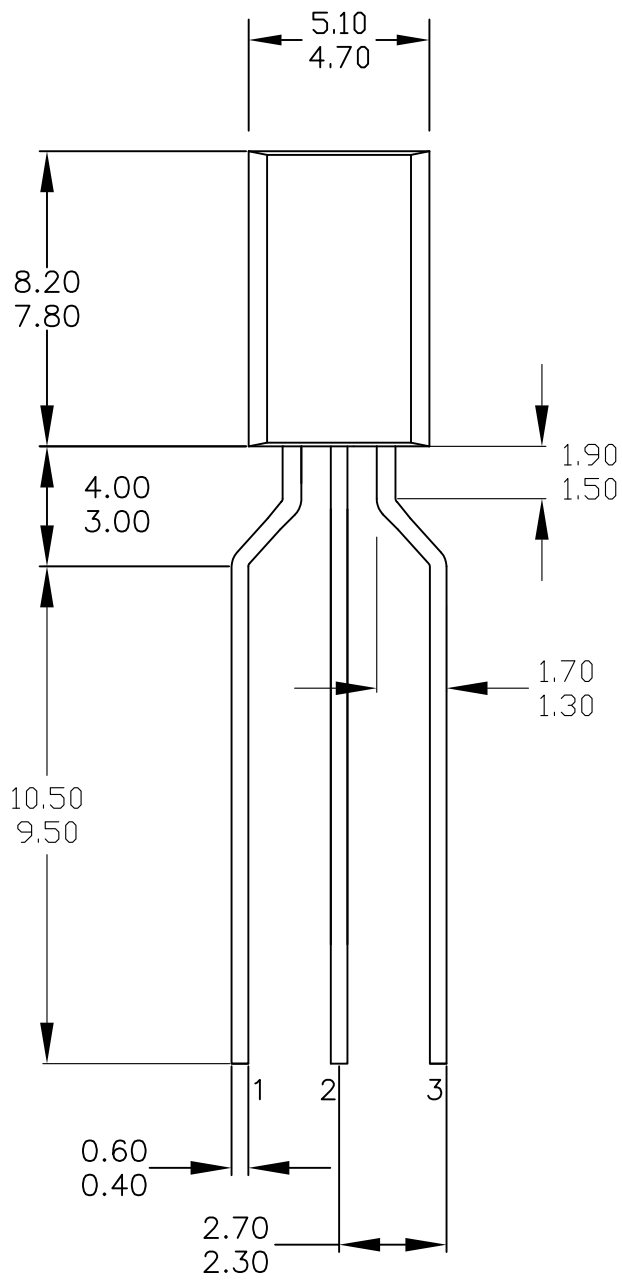
**Figure 4. Base-Emitter On Voltage**



**Figure 5. Safe Operating Area**



**Figure 6. Power Derating**



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