



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^{(1), (2)}

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°C .
2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

Thermal Characteristics⁽³⁾

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°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

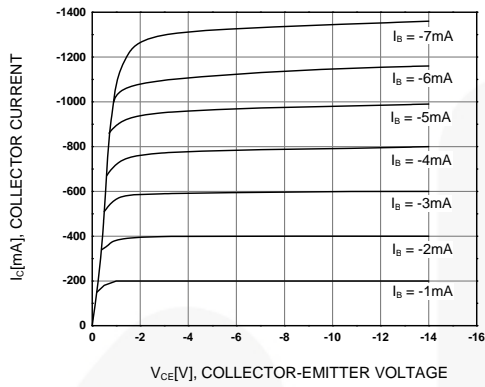


Figure 1. Static Characteristic

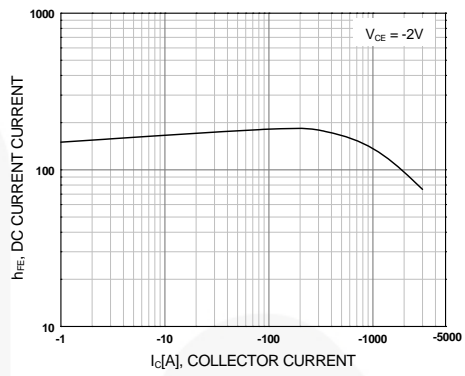


Figure 2. DC Current Gain

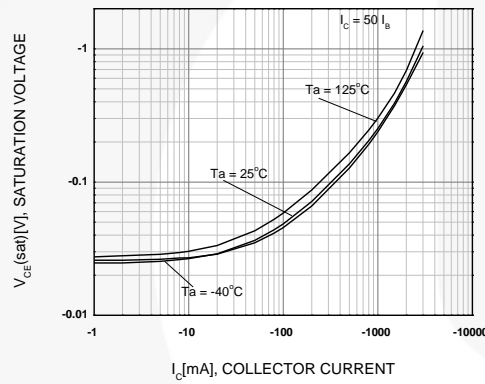


Figure 3. Collector-Emitter Saturation Voltage

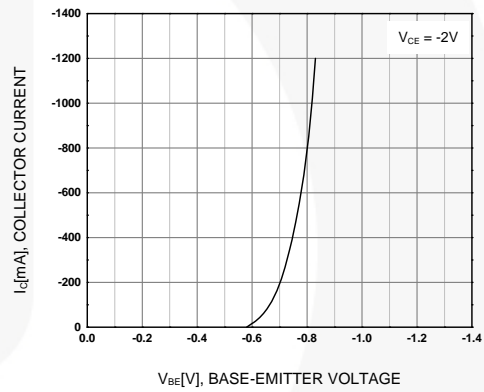


Figure 4. Base-Emitter On Voltage

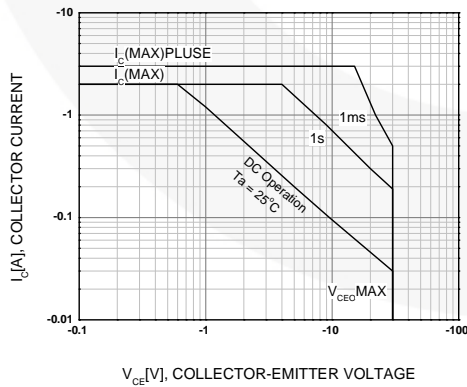


Figure 5. Safe Operating Area

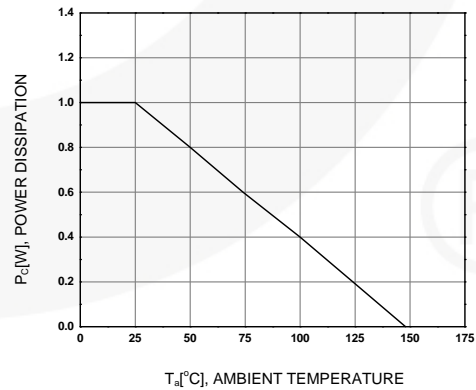
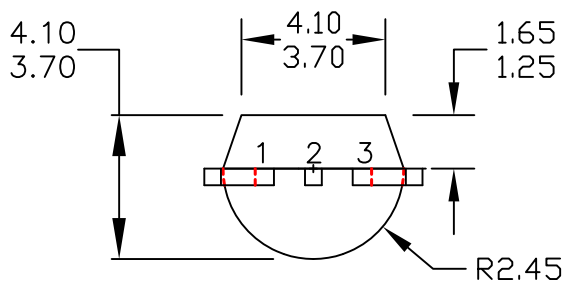
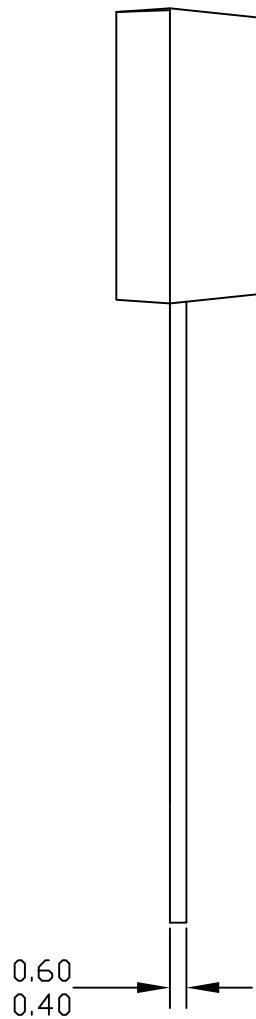
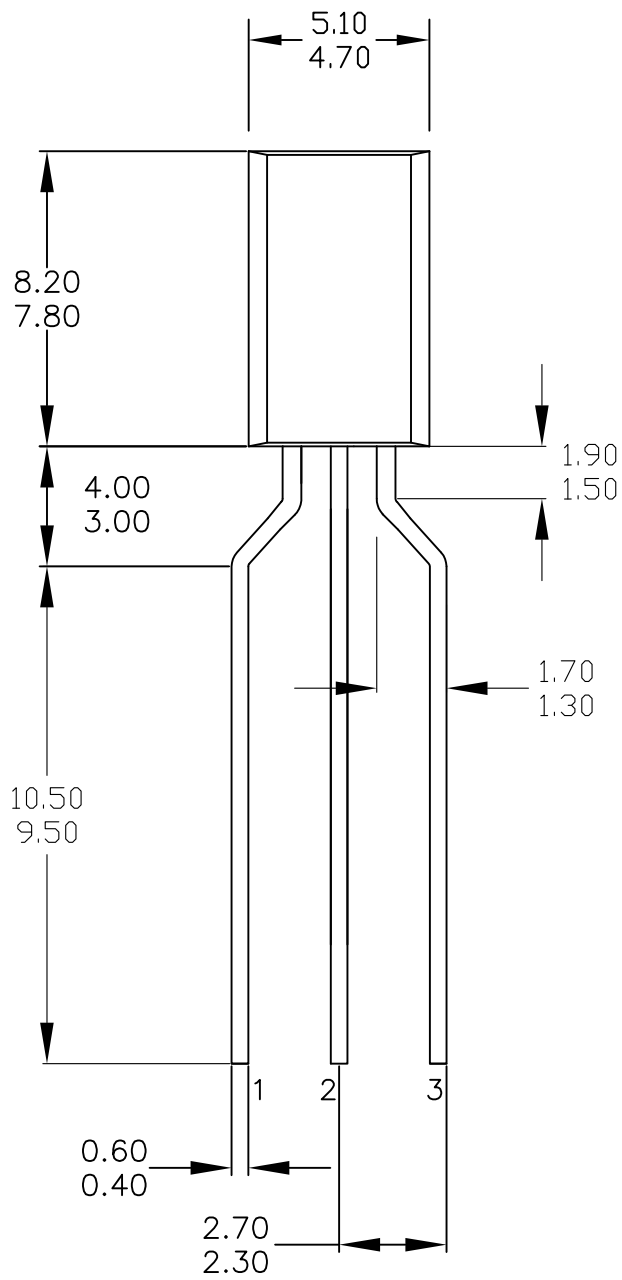


Figure 6. Power Derating



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