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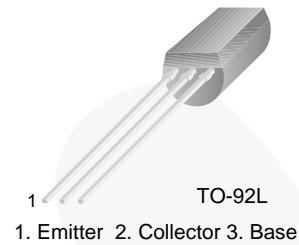
October 2014

# KSC2328A

## NPN Epitaxial Silicon Transistor

### Features

- Audio Power Amplifier Application
- Complement to KSA928A
- 3 W Output Application



### Ordering Information

Part Number	Top Mark	Package	Packing Method
KSC2328AOTA	C2328A O-	TO-92 3L	Ammo
KSC2328AYBU	C2328A Y-	TO-92 3L	Bulk
KSC2328AYTA	C2328A Y-	TO-92 3L	Ammo

### 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	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	$^\circ\text{C}$

KSC2328A — NPN Epitaxial Silicon Transistor

**Thermal Characteristics<sup>(1)</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:**

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
$BV_{CBO}$	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	$I_C = 1.5 \text{ A}$ , $I_B = 0.03 \text{ A}$			2.0	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 2 \text{ V}$ , $I_C = 500 \text{ mA}$		120		MHz
$C_{ob}$	Collector Output Capacitance	$V_{CB} = 10 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$		30		pF

 **$h_{FE}$  Classification**

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

## Typical Performance Characteristics

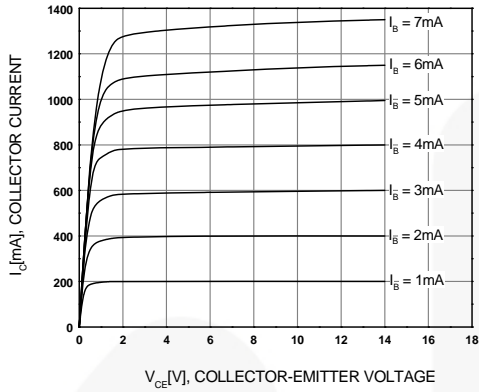


Figure 1. Static Characteristic

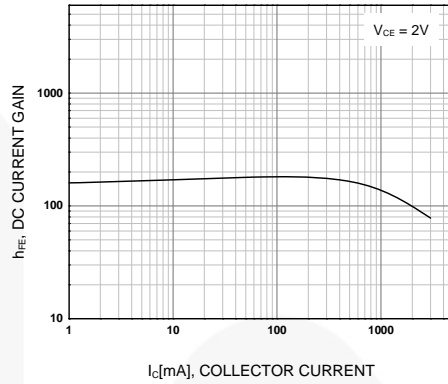


Figure 2. DC Current Gain

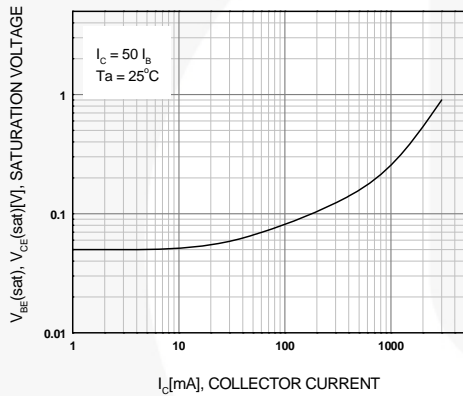


Figure 3. Collector-Emitter Saturation Voltage

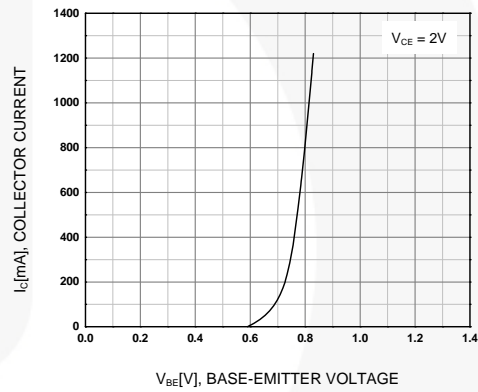


Figure 4. Base-Emitter On Voltage

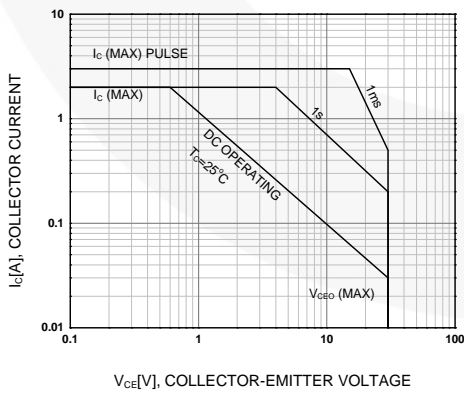


Figure 5. Safe Operating Area

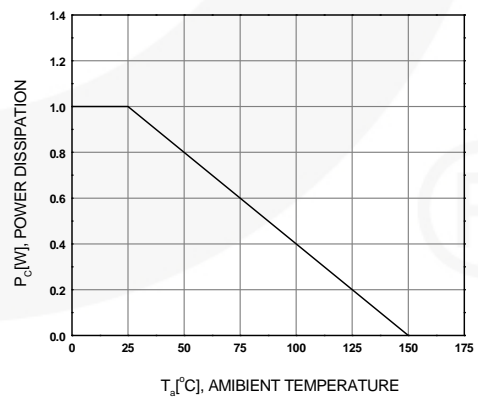
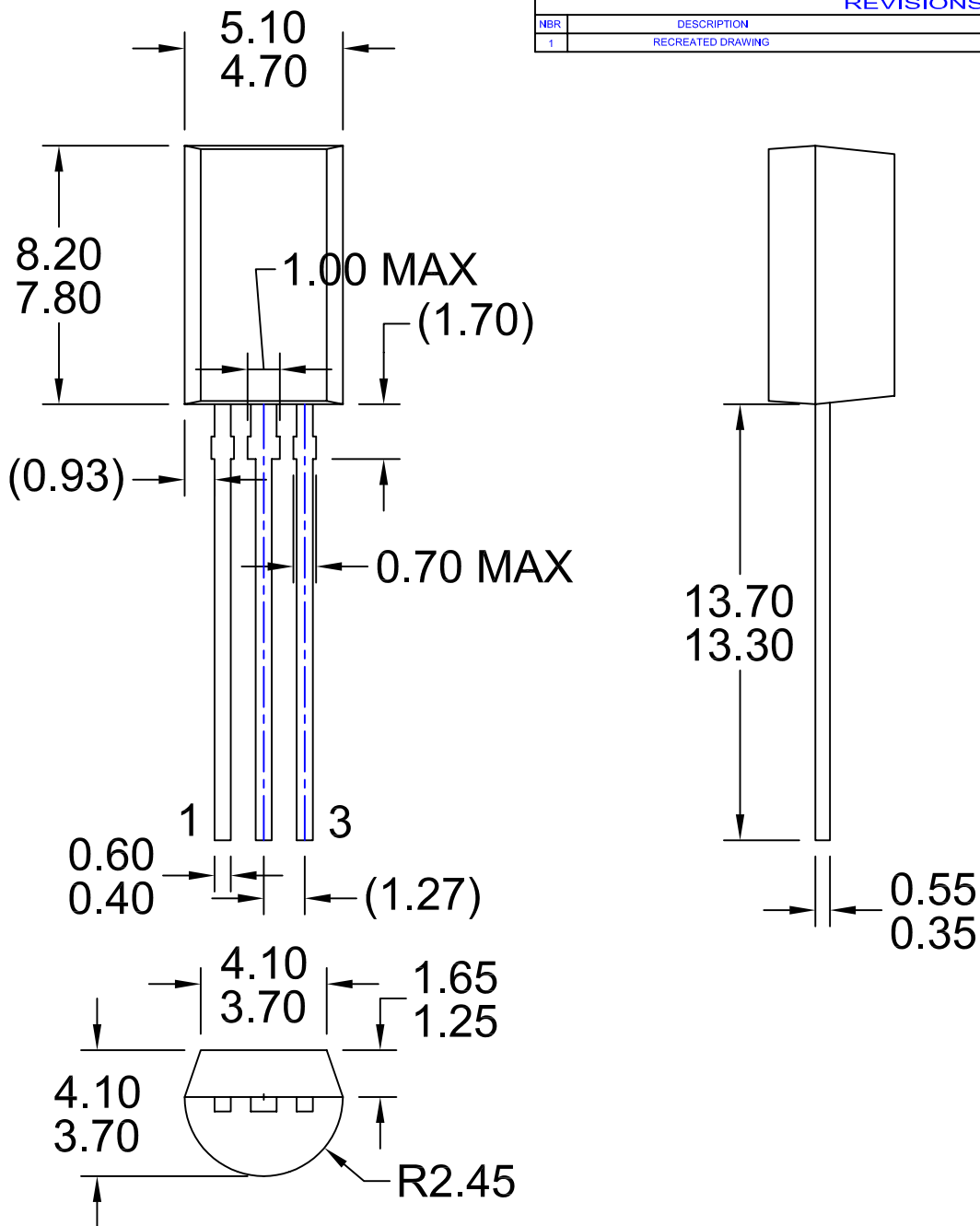


Figure 6. Power Derating


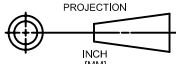
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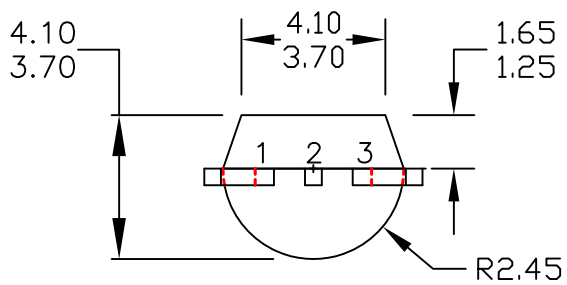
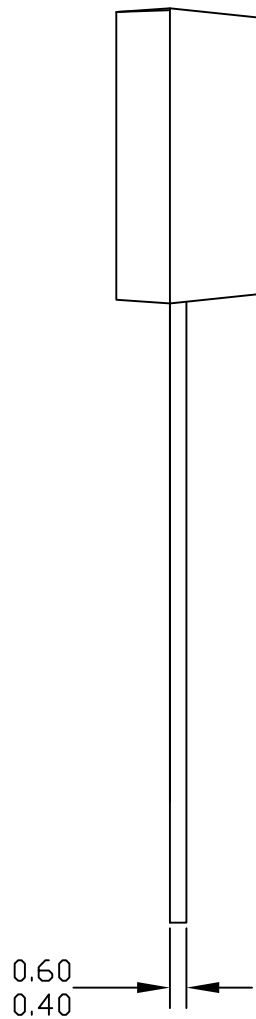
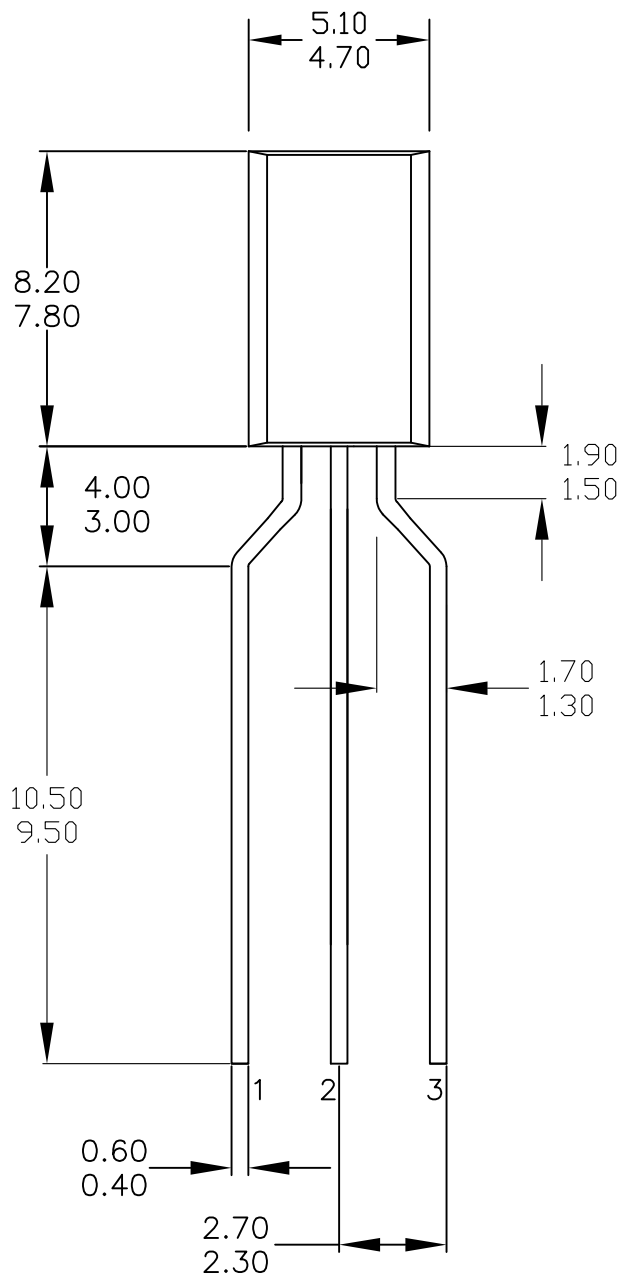
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