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# KSA1281

## PNP Epitaxial Silicon Transistor

### Features

- Audio Power Amplifier
- 3 W Output Application

### ABSOLUTE MAXIMUM RATINGS

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

Parameter	Symbol	Value	Unit
Collector–Base Voltage	$V_{CB0}$	–50	V
Collector–Emitter Voltage	$V_{CEO}$	–50	V
Emitter–Base Voltage	$V_{EBO}$	–5	V
Collector Current	$I_C$	–2	A
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	–55 to +150	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.



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**TO-92L  
CASE 135AM**

### PIN CONNECTIONS

1. Emitter 2. Collector 3. Base

### ORDERING INFORMATION

See detailed ordering, marking and shipping information on page 2 of this data sheet.

# KSA1281

## THERMAL CHARACTERISTICS (Note 1)

Symbol	Parameter	Value	Unit
P <sub>D</sub>	Power Dissipation T <sub>C</sub> = 25°C	1000	mW
	Derate Above T <sub>A</sub> = 25°C	8.0	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction-to-Ambient	125	°C/W

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 (Note 2) Values are at T<sub>A</sub> = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV <sub>CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = -1 mA, I <sub>E</sub> = 0	-50			V
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = -10 mA, I <sub>B</sub> = 0	-50			V
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = -1 mA, I <sub>C</sub> = 0	-5			V
I <sub>CBO</sub>	Collector Cut-Off Current	V <sub>CB</sub> = -50 V, I <sub>E</sub> = 0			-100	nA
I <sub>EBO</sub>	Emitter Cut-Off Current	V <sub>EB</sub> = -5 V, I <sub>C</sub> = 0			-100	nA
h <sub>FE1</sub>	DC Current Gain	V <sub>CE</sub> = -2 V, I <sub>C</sub> = -500 mA	120		240	
h <sub>FE2</sub>		V <sub>CE</sub> = -2 V, I <sub>C</sub> = -1.5 A	40			
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = -1 A, I <sub>B</sub> = -0.05 A			-1.2	V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -1 A, I <sub>B</sub> = -0.05 A			-0.5	V
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> = -10 V, I <sub>E</sub> = 0, f = 1 MHz		40		pF
f <sub>T</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> = -2 V, I <sub>C</sub> = -500 mA		100		MHz

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2.0%.

## ORDERING INFORMATION

Part Number	Top Mark	Package	Packing Method
KSA1281YTA	A1281 Y-	TO-92 3L	Ammo

Typical Performance Characteristics

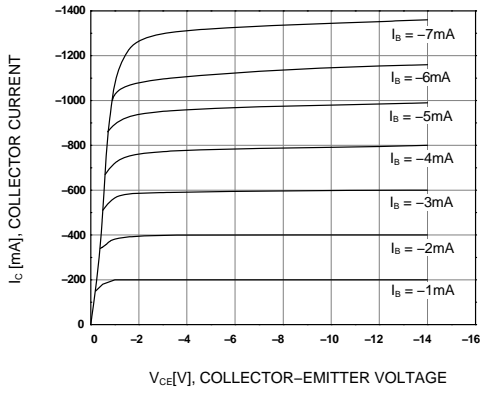


Figure 1. Static Characteristic

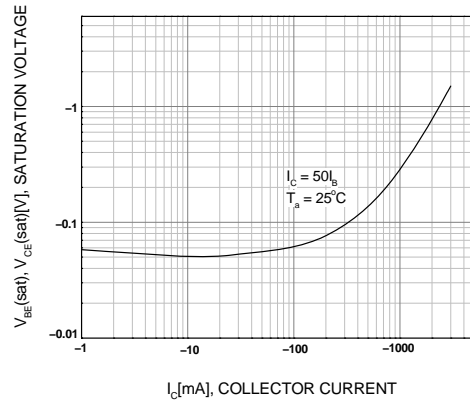


Figure 2. Base-Emitter Saturation Voltage

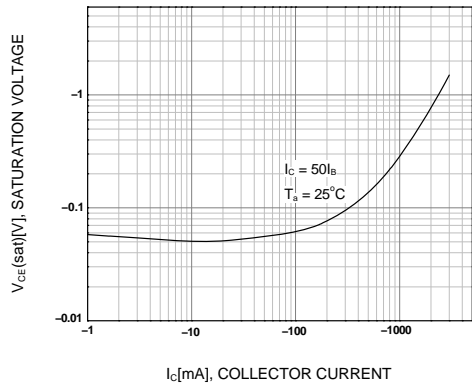


Figure 3. Collector-Emitter Saturation Voltage

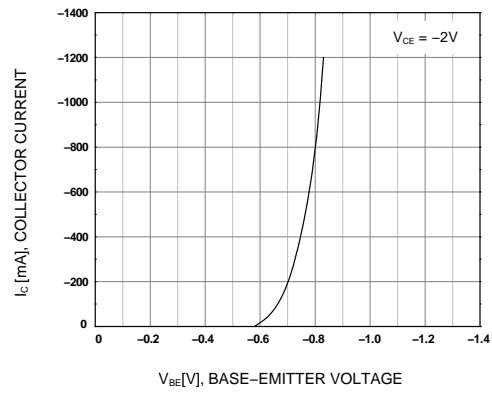


Figure 4. Base-Emitter On Voltage

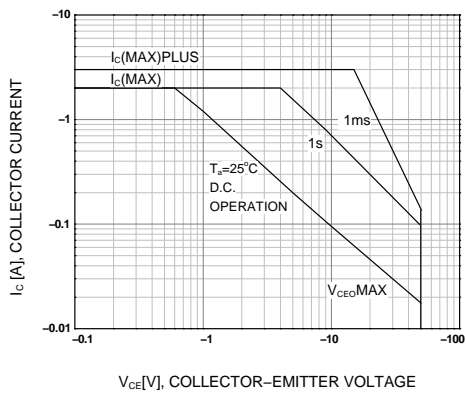


Figure 5. Safe Operating Area

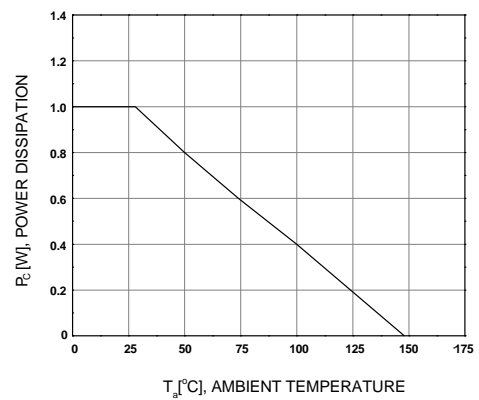
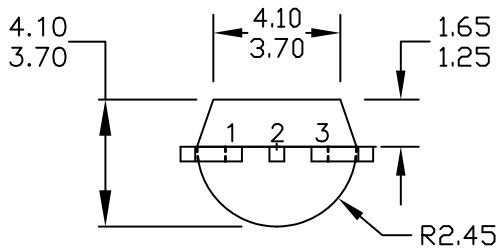
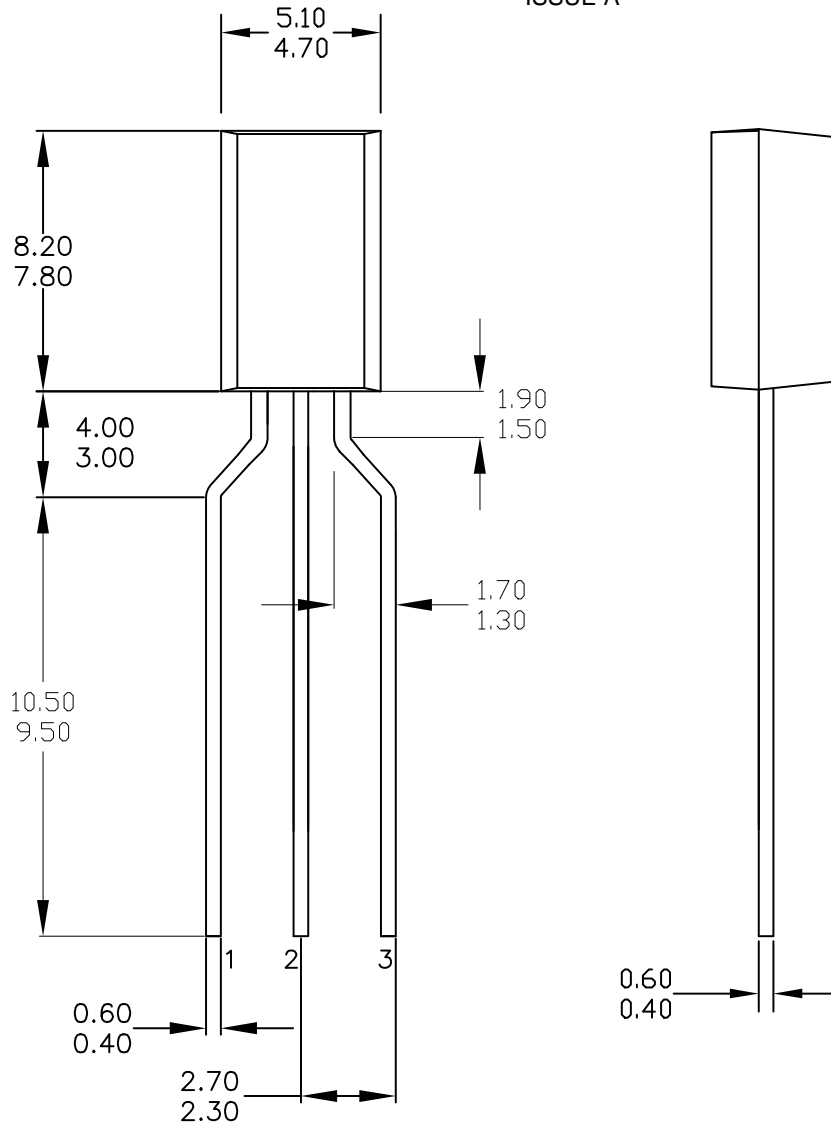


Figure 6. Power Derating

# KSA1281


## PACKAGE DIMENSIONS

TO-92 3 8.0x4.9 (LEADFORMED)  
CASE 135AM  
ISSUE A



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