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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_{CE0}	–50	V
Emitter–Base Voltage	V_{EB0}	–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_D	Power Dissipation $T_C = 25^\circ\text{C}$	1000	mW
	Derate Above $T_A = 25^\circ\text{C}$	8.0	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	125	$^\circ\text{C/W}$

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = -1\text{ mA}, I_E = 0$	-50			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = -10\text{ mA}, I_B = 0$	-50			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = -1\text{ mA}, I_C = 0$	-5			V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = -50\text{ V}, I_E = 0$			-100	nA
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = -5\text{ V}, I_C = 0$			-100	nA
h_{FE1}	DC Current Gain	$V_{CE} = -2\text{ V}, I_C = -500\text{ mA}$	120		240	
h_{FE2}		$V_{CE} = -2\text{ V}, I_C = -1.5\text{ A}$	40			
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -1\text{ A}, I_B = -0.05\text{ A}$			-1.2	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -1\text{ A}, I_B = -0.05\text{ A}$			-0.5	V
C_{ob}	Output Capacitance	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$		40		pF
f_T	Current Gain Bandwidth Product	$V_{CE} = -2\text{ V}, I_C = -500\text{ mA}$		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 $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2.0\%$.

ORDERING INFORMATION

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

Typical Performance Characteristics

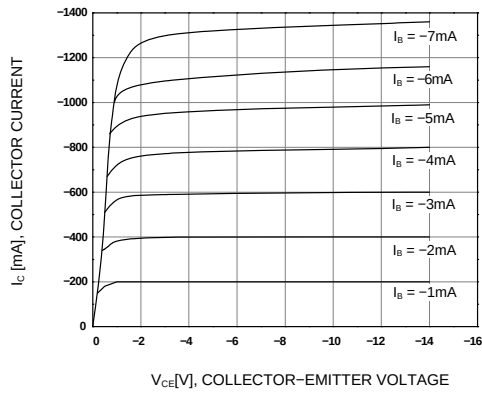


Figure 1. Static Characteristic

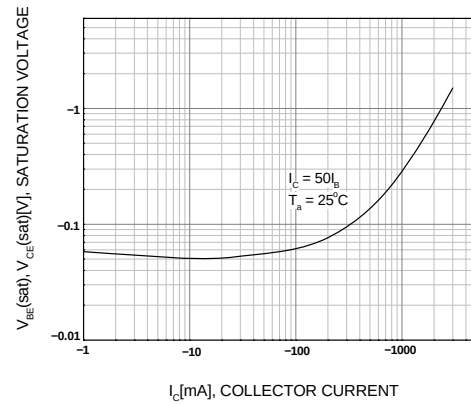


Figure 2. Base-Emitter Saturation Voltage

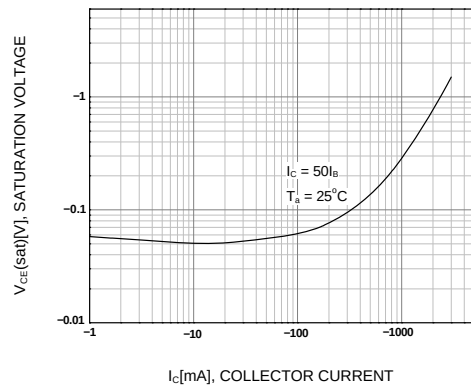


Figure 3. Collector-Emitter Saturation Voltage

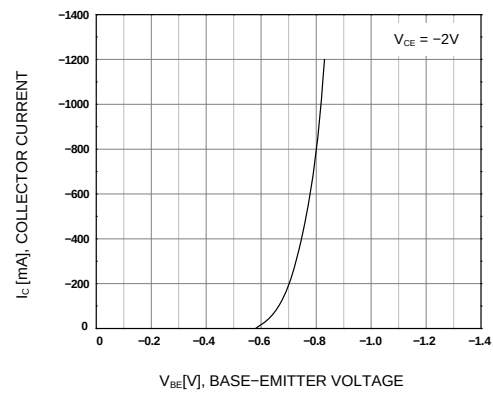


Figure 4. Base-Emitter On Voltage

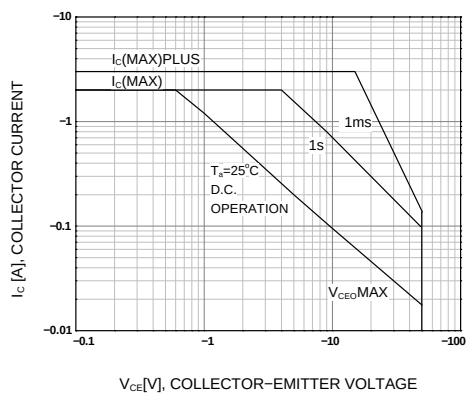


Figure 5. Safe Operating Area

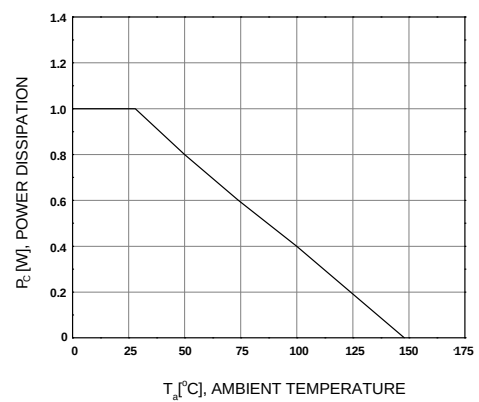
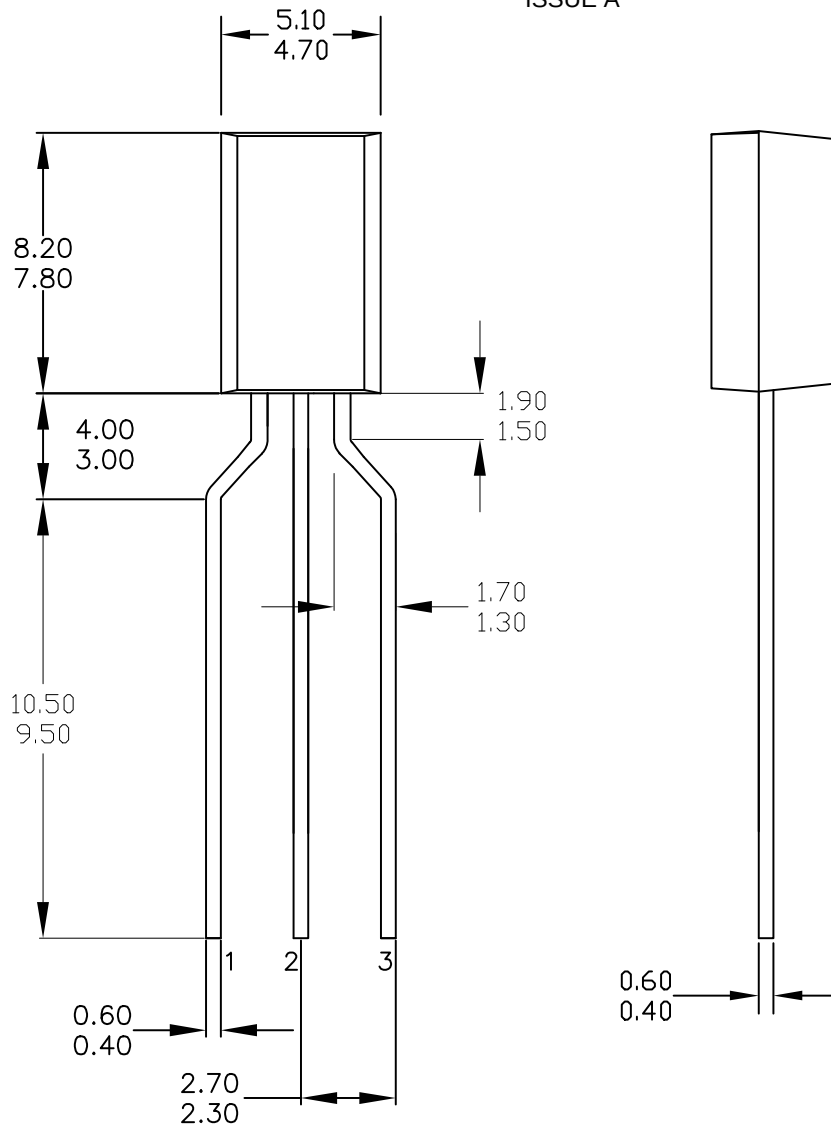


Figure 6. Power Derating

KSA1281

PACKAGE DIMENSIONS

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



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