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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

KSA1281

PNP Epitaxial Silicon Transistor

Features

- Audio Power Amplifier
- 3 W Output Application

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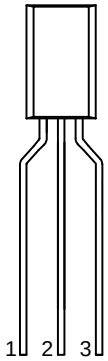
ABSOLUTE MAXIMUM RATINGS

(Values are at T_A = 25°C unless otherwise noted.)

Parameter	Symbol	Value	Unit
Collector−Base Voltage	V_{CBO}	−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	°C
Storage Temperature	T_{STG}	−55 to +150	°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.



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.

THERMAL CHARACTERISTICS (Note 1)

Symbol	Parameter	Value	Unit
P_D	Power Dissipation T_C = 25°C	1000	mW
	Derate Above T_A = 25°C	8.0	mW/°C
$R_{\theta JA}$	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_A = 25°C unless otherwise noted.

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

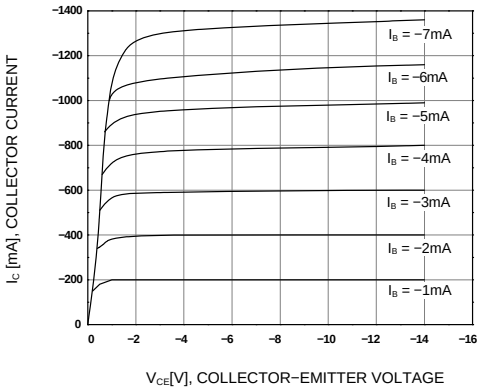


Figure 1. Static Characteristic

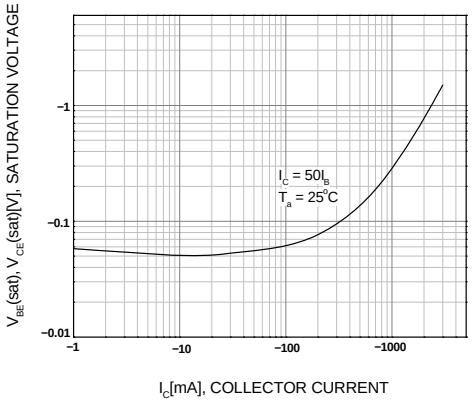


Figure 2. Base−Emitter Saturation Voltage

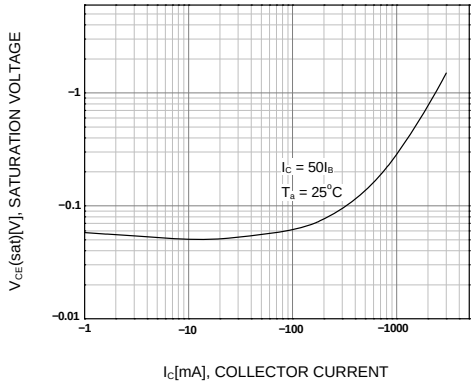


Figure 3. Collector−Emitter Saturation Voltage

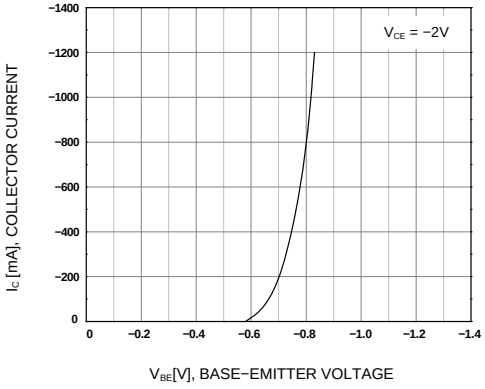


Figure 4. Base−Emitter On Voltage

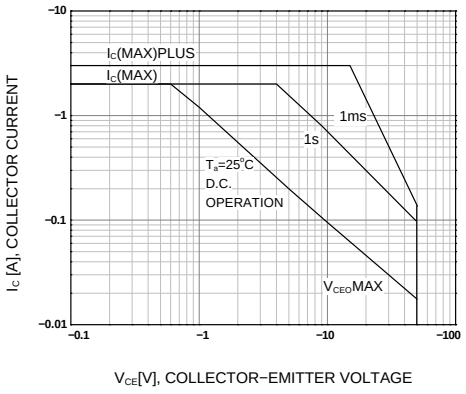


Figure 5. Safe Operating Area

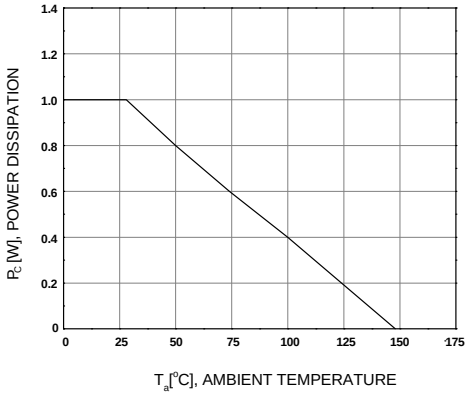
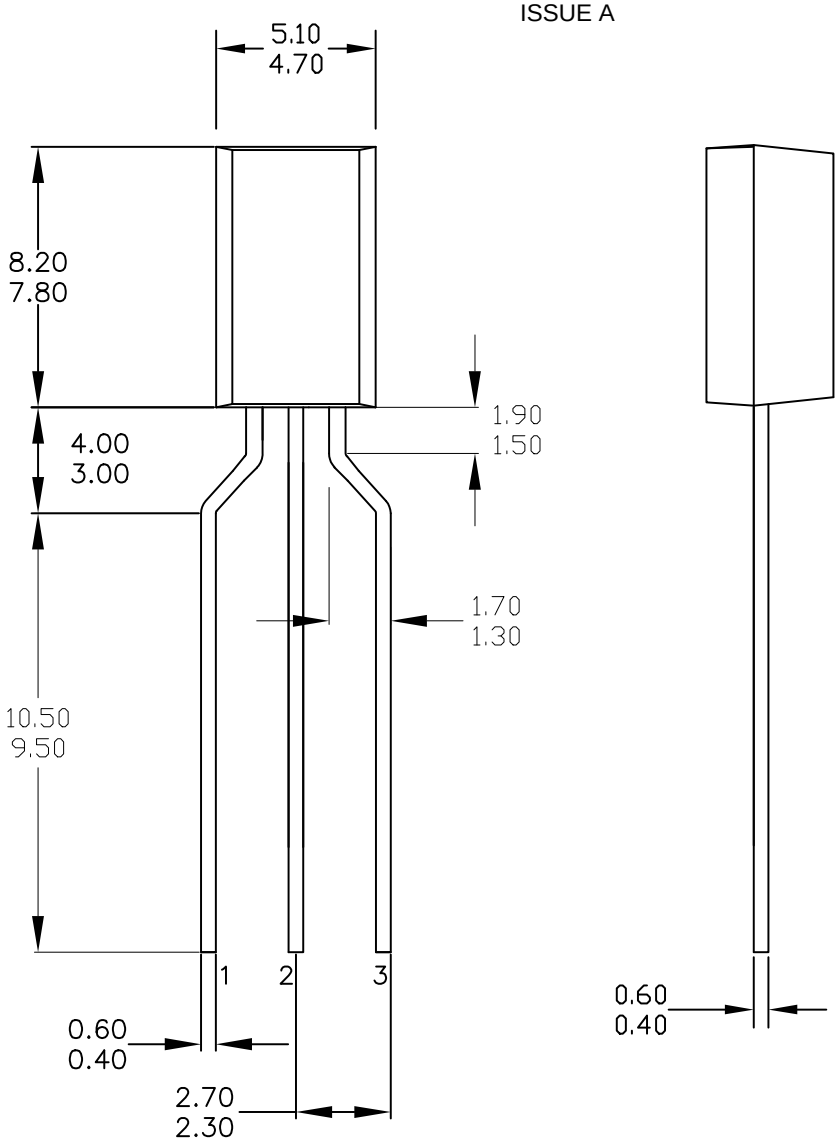
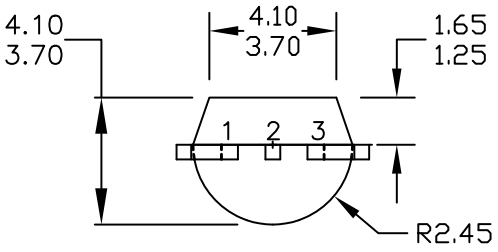


Figure 6. Power Derating

PACKAGE DIMENSIONS

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





NOTES: UNLESS OTHERWISE SPECIFIED

A. THIS PACKAGE IS NOT PRESENTLY REGISTERED WITH ANY STANDARDS COMMITTEE.
B. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS.
C. ALL DIMENSIONS ARE IN MILLIMETERS.

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