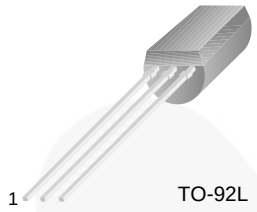
October 2014

KSA1281
PNP Epitaxial Silicon Transistor

Features

- Audio Power Amplifier
- 3 W Output Application



TO-92L

1. Emitter 2. Collector 3. Base

Ordering Information

Part Number	Top Mark	Package	Packing Method
KSA1281YTA	A1281 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°C unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-2	A
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Thermal Characteristics[1]

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

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

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[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 = -100 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	70		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

Note:

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

h_{FE} Classification

Classification	O	Y
h_{FE1}	70 ~ 140	120 ~ 240

Typical Performance Characteristics

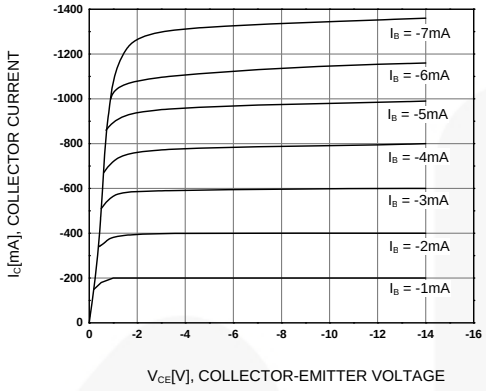


Figure 1. Static Characteristic

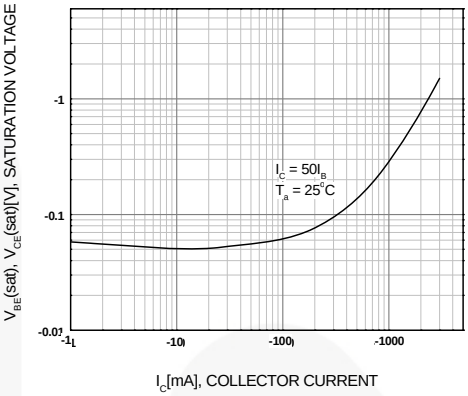


Figure 2. Base-Emitter Saturation Voltage

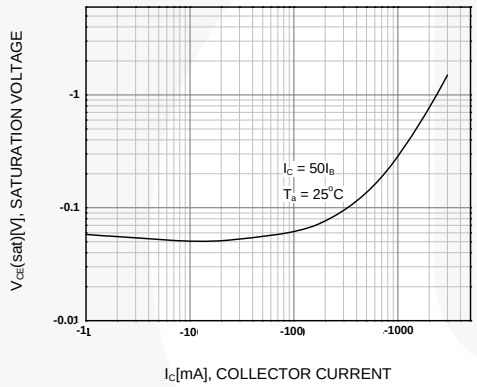


Figure 3. Collector-Emitter Saturation Voltage

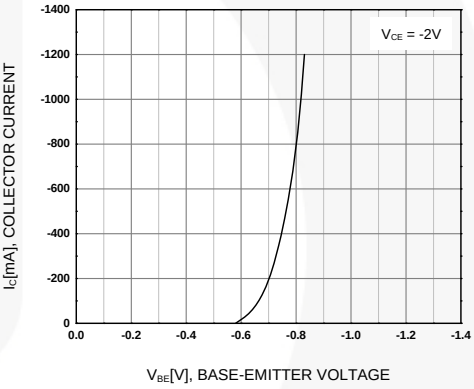


Figure 4. Base-Emitter On Voltage

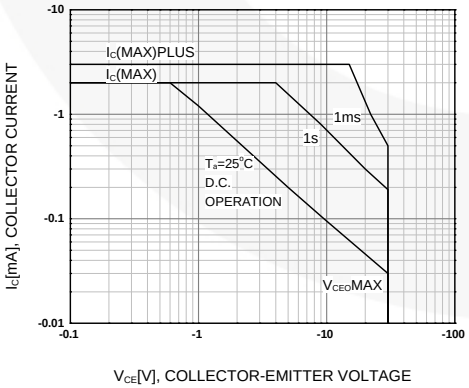


Figure 5. Safe Operating Area

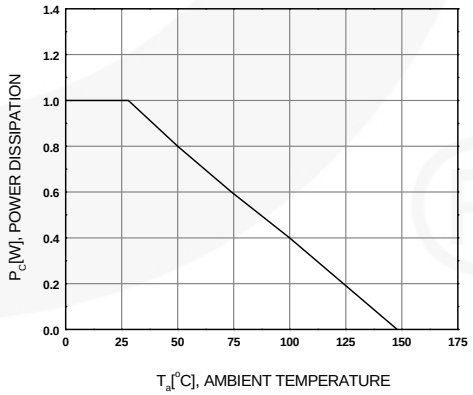
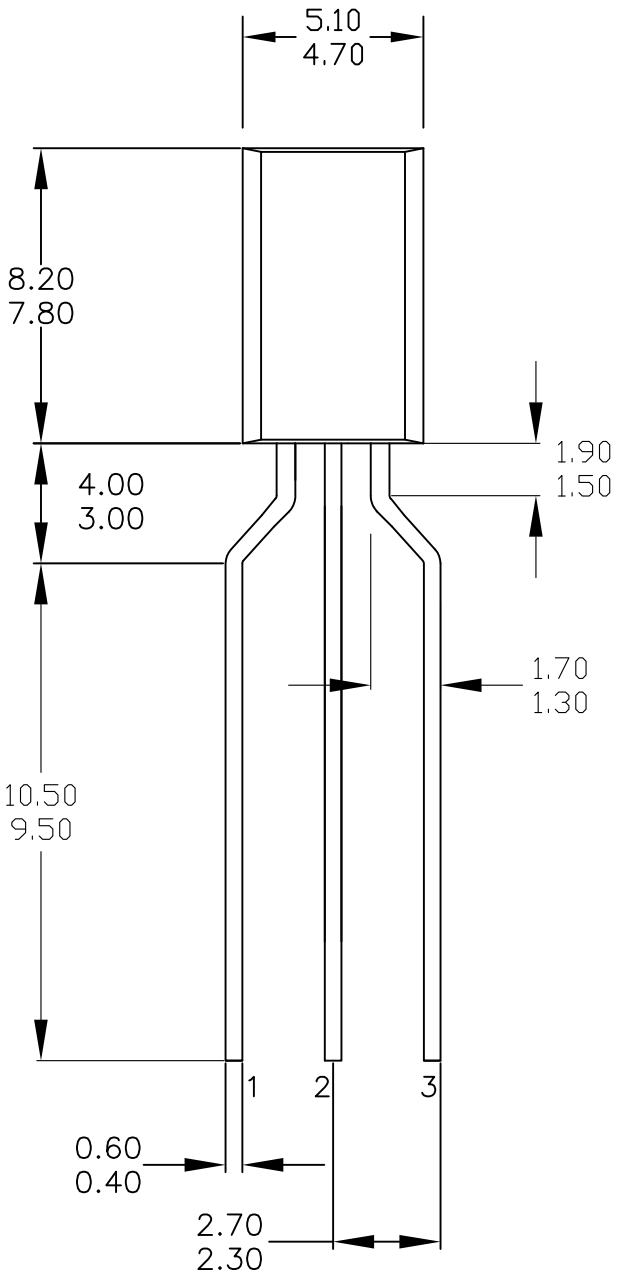
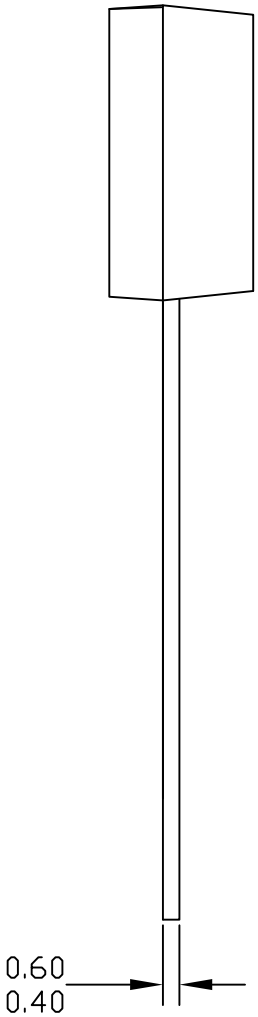
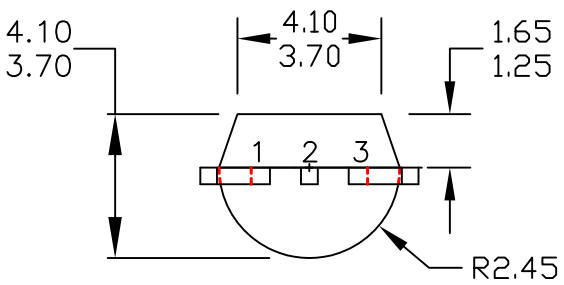


Figure 6. Power Derating







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