

PNP Epitaxial Silicon Transistor

KSA1281

Features

- Audio Power Amplifier
- 3 W Output Application

ABSOLUTE MAXIMUM RATINGS

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

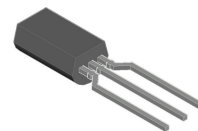
Symbol	Parameter	Value	Unit
V_{CBO}	Collector–Base Voltage	–50	V
V_{CEO}	Collector–Emitter Voltage	–50	V
V_{EBO}	Emitter–Base Voltage	–5	V
I_C	Collector Current	–2	A
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	–55 to +150	$^\circ\text{C}$

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.

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	$^\circ\text{C}/\text{W}$

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.



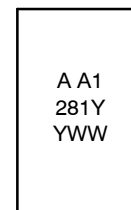
TO–92 3L
CASE 135AM

PIN CONNECTIONS



1. Emitter 2. Collector 3. Base

MARKING DIAGRAM



A = Assembly Location
A1281Y = Specific Device Code
Y = Year
WW = Work Week

ORDERING INFORMATION

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

KSA1281

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

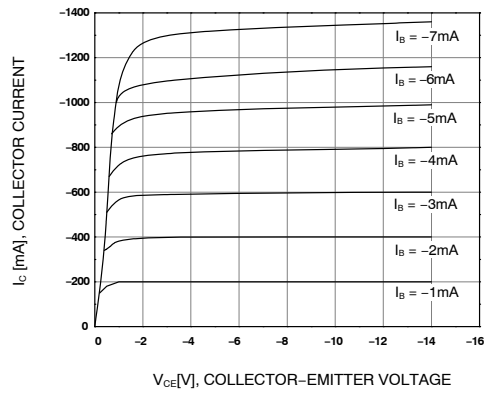


Figure 1. Static Characteristic

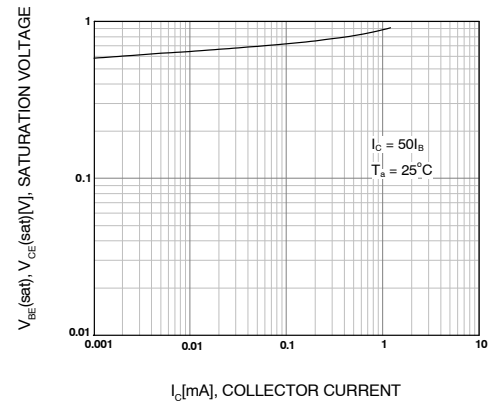


Figure 2. Base-Emitter Saturation Voltage

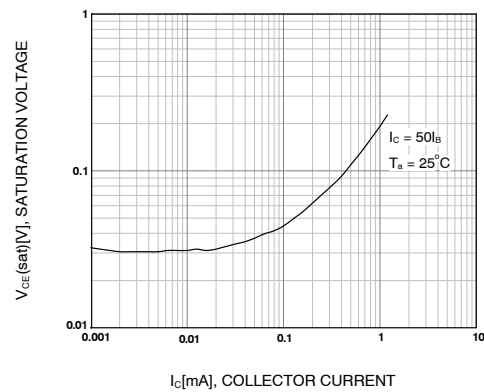


Figure 3. Collector-Emitter Saturation Voltage

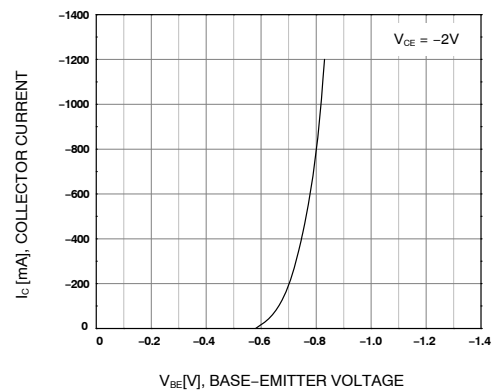


Figure 4. Base-Emitter On Voltage

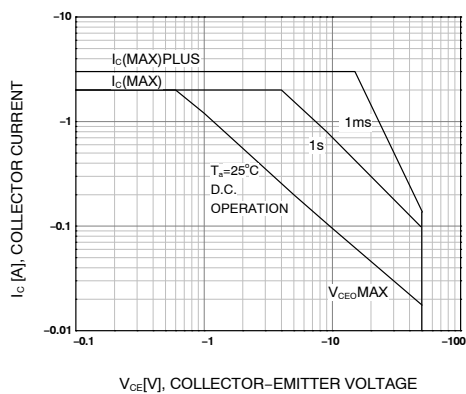


Figure 5. Safe Operating Area

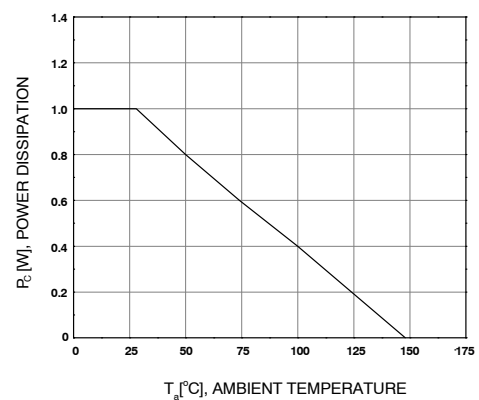
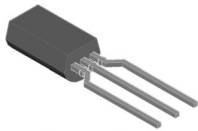
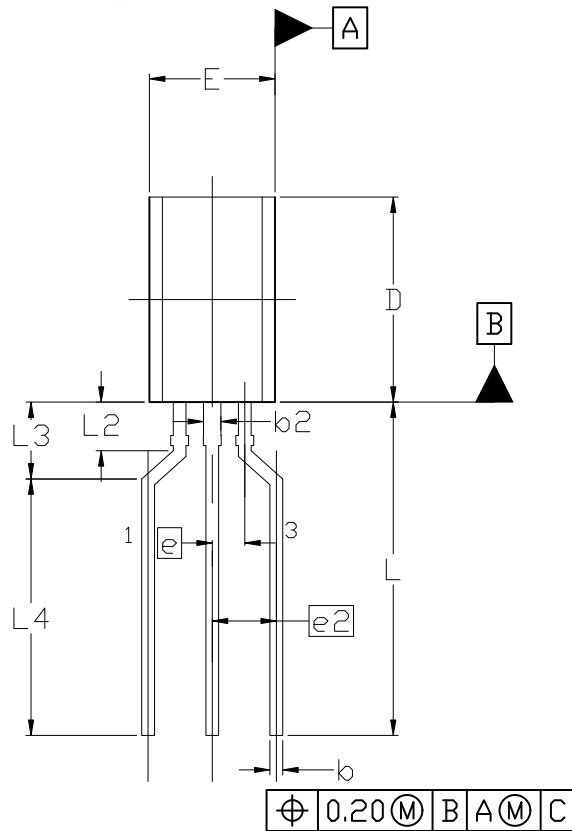


Figure 6. Power Derating

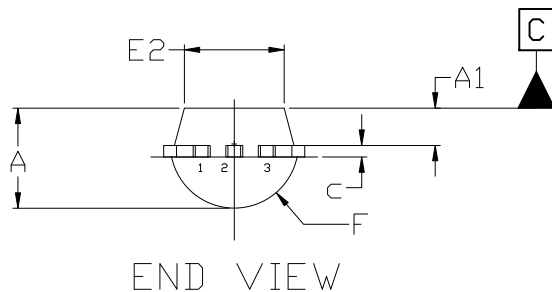


TO-92 3 8.0x4.9 (LEADFORMED)
CASE 135AM
ISSUE B

DATE 14 JAN 2021



TOP VIEW



END VIEW

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, GATE REMAINS AND TIE BAR PROTRUSIONS.
4. DIMENSION b AND b2 DOES NOT INCLUDE DAMBAR PROTRUSION. DIMENSION b2 LOCATED ABOVE THE DAMBAR PORTION OF MIDDLE LEAD.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	3.70	3.90	4.10
A1	1.25	1.45	1.65
b	0.35	0.50	0.60
b2	0.62	---	0.78
c	0.35	0.45	0.55
D	7.80	8.00	8.20
E	4.70	4.90	5.10
E2	3.70	3.90	4.10
e	1.27 BSC		
e2	2.50 BSC		
F	2.45 REF		
L	13.00 REF		
L2	1.50	---	1.90
L3	2.60	---	3.40
L4	10.40 REF		

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