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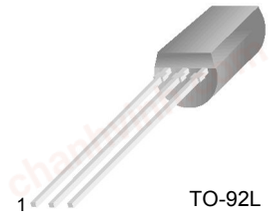
FAIRCHILD SEMICONDUCTOR®

January 2009

KSA1281
Audio Power Amplifier

- Collector Power Dissipation : PC=1W
- 3 Watt Output Application



TO-92L

1. Emitter 2. Collector 3. Base

Absolute Maximum Ratings* T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
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 (DC)	-2	A
P_C	Collector Dissipation (T_C=25°C)	1	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:
1) These ratings are based on a maximum junction temperature of 150°C.
2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Electrical Characteristics* T_a = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	I_C= -100, I_E=0	-50			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C= -10mA, I_B=0	-50			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E= -1mA, I_C=0	-5			V
I_{CBO}	Collector Cut-off Current	V_{CB}= -50V, I_E=0			-100	nA
I_{EBO}	Emitter Cut-off Current	V_{EB}= -5V, I_C=0			-100	nA
h_{FE1} h_{FE2}	DC Current Gain	V_{CE}= -2V, I_C= -500mA V_{CE}= -2V, I_C= -1.5A	70 40		240	
V_{BE} (sat)	Base-Emitter Saturation Voltage	I_C= -1A, I_B= -0.05A			-1.2	V
V_{CE} (sat)	Collector-Emitter Saturation Voltage	I_C= -1A, I_B= -0.05A			-0.5	V
C_{ob}	Output Capacitance	V_{CB}= -10V, I_E=0, f=1MHz		40		pF
f_T	Current Gain Bandwidth Product	V_{CE}= -2V, I_C= -500mA		100		MHz

* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%

h_{FE} Classification

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

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Typical Characteristics

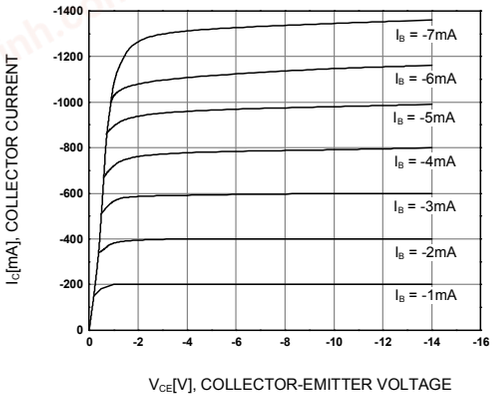

Figure 1. Static Characteristic

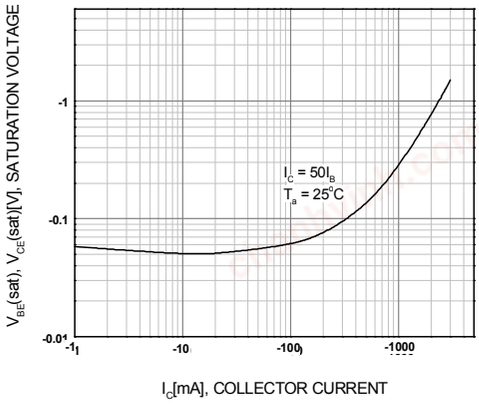

Figure 2. Base-Emitter Saturation Voltage

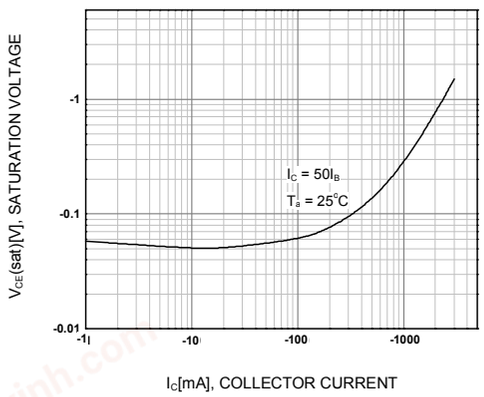

Figure 3. Collector-Emitter Saturation Voltage

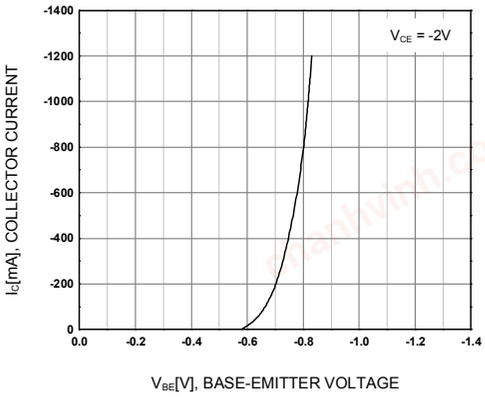

Figure 4. Base-Emitter On Voltage

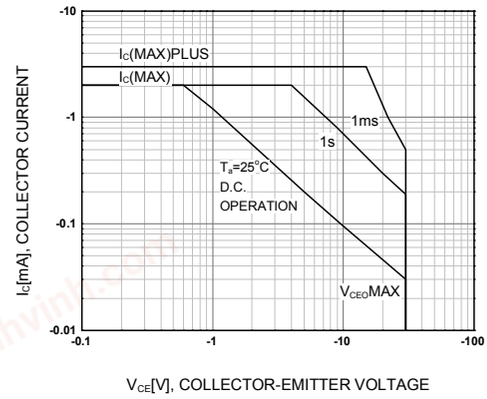

Figure 5. Safe Operating Area

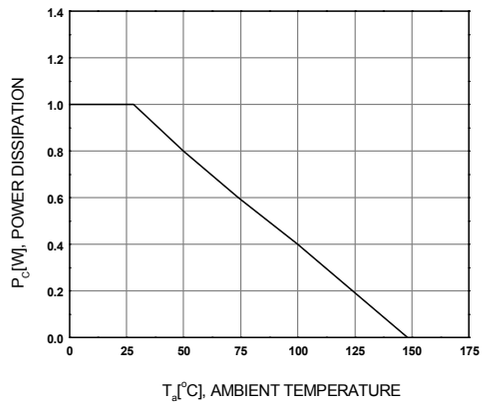

Figure 6. Power Derating

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Power247®
POWEREDGE®
Power-SPM™
PowerTrench®
Programmable Active Droop™
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