

January 2007

KSA3010 PNP Epitaxial Silicon Transistor

- Audio Power Amplifier
- High Current Capability: I_C = 6A
- High Power Dissipation
- · Wide S.O.A
- Complement to KSC4010



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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-120	V
V _{CEO}	Collector-Emitter Voltage	-120	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current (DC)	-6	Α
I _{CP}	Collector Current (Pulse)	-12	А
P _C	Collector Dissipation (T _C =25°C)	60	W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	- 50 ~ 150	°C

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

- 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.

Thermal Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	2.0	°C/W

^{*} Device mounted on the minimum pad size.

Electrical Characteristics* T_a = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Units
BV _{CEO}	Collector-Emitter Breakdown Voltage	I _C = -5A, I _B = 0	-120	-	-	V
I _{CBO}	Collector Cut-off Current	V _{CB} = -120V, I _E = 0	-	-	-10	μА
I _{EBO}	Emitter Cut-off Current	V _{EB} = -5V, I _C = 0	-	-	-10	μА
h _{FE}	DC Current Gain	V _{CE} = -5V, I _C = -1A,	55	-	160	
V _{CE} (sat)	Collector-Emitter Saturation Voltage	I _C = -5A, I _B = -0.5A	-	-	-2.5	V
V _{BE} (on)	Base-Emitter ON Voltage	V _{CE} = -5V, I _C = -5A	-	-	-1.5	V
f _T	Current Gain Bandwidth Product	V _{CE} = -5V, I _C = -1A	-	30	-	MHz
C _{ob}	Output Capacitance	V _{CB} =-10V, I _E =0, f=1MHz	-	180	-	pF

^{*} Pulse Test: Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2.0\%$

h_{FF} Classification

Classification	R	0
h _{FE}	55 ~ 110	80 ~ 160

Package Marking and Ordering Information

Device Item (note)	Device Marking	Package	Packing Method	Qty(pcs)
KSA3010RTU	A3010R	TO-3P	TUBE	450
KSA3010OTU	A3010O	TO-3P	TUBE	450

Note: The Suffix "-TU" means the Tube packing method, which can be on fairchildsemi website at http://www.fairchildsemi.com/packaging

Typical Characteristics

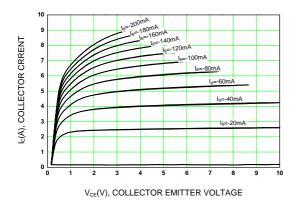


Figure 1. Static Characteristic

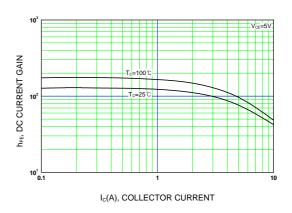


Figure 2. DC current Gain

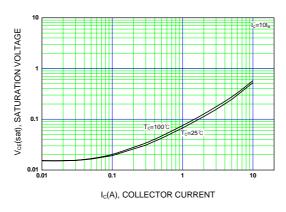


Figure 3. Collector-Emitter Saturation Voltage

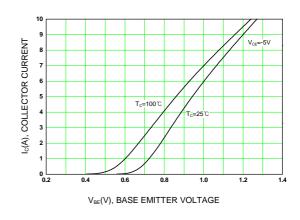


Figure 4. Base-Emitter On Voltage

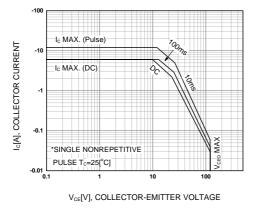


Figure 5. Safe Operating Area

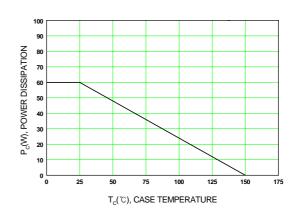
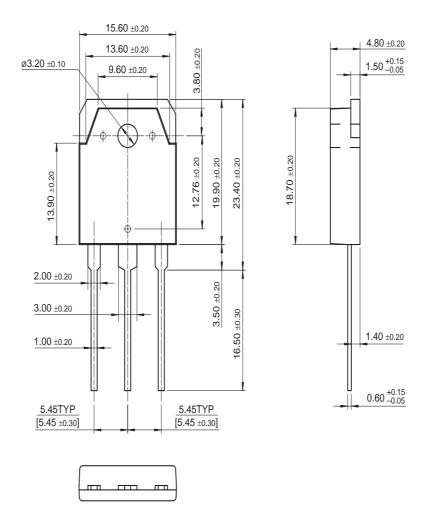


Figure 6. Power Derating

3

Mechanical Dimensions

TO-3P



Dimensions in Millimeters

UniFET™

 VCX^{TM}

Wire™



FAIRCHILD SEMICONDUCTOR TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

 $ACEx^{TM}$ FACT Quiet Series™ OCX^{TM} SILENT SWITCHER® OCXPro[™] ActiveArray™ GlobalOptoisolator™ SMART START™ OPTOLOGIC® GTO™ SPM™ Bottomless™ OPTOPLANAR™ HiSeC™ Build it Now™ Stealth™ I^2C^{TM} PACMANTM CoolFET™ SuperFET™ РОР™ $CROSSVOLT^{\rm TM}$ i-Lo™ SuperSOT™-3 Power247™ DOME™ ImpliedDisconnect™ SuperSOT™-6 EcoSPARK™ PowerEdge™ SuperSOT™-8 IntelliMAX™ E²CMOS™ ISOPLANAR™ PowerSaver™ SyncFET™ PowerTrench® ТСМ™ EnSigna™ LittleFET™ FACT[®] $\mathsf{MICROCOUPLER}^{\mathsf{TM}}$ QFET® TinyBoost™ $\mathsf{FAST}^{\mathbb{R}}$ QSTM TinyBuck™ MicroFET™ FASTr™ QT Optoelectronics™ TinyPWM™ MicroPak™ Quiet Series™ FPS™ MICROWIRE™ TinyPower™ RapidConfigure™ FRFET™ TinyLogic[®] MSX™ MSXPro™ RapidConnect™ TINYOPTO™ μSerDes™ Across the board. Around the world.™ TruTranslation™ ScalarPump™ **UHC®** The Power Franchise®

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

Programmable Active Droop™

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

Rev. I22