April 2015

KSH45H11
PNP Epitaxial Silicon Transistor

Features

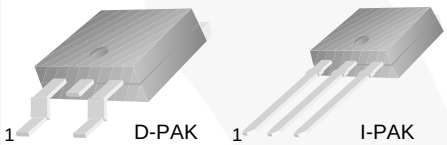
- Lead Formed for Surface Mount Application (No Suffix)
- Straight Lead (I-PAK, “- I” Suffix)
- Electrically Similar to Popular KSE45H
- Fast Switching Speeds
- Low Collector Emitter Saturation Voltage

Applications

- Switching Regulators
- Converters
- Power Amplifiers

Description

General-purpose power and switching such as output or driver stages in applications D-PAK for surface mount applications.



1.Base 2.Collector 3.Emitter

Ordering Information

Part Number	Top Mark	Package	Packing Method
KSH45H11TF	KSH45H11	TO-252 3L (DPAK)	Tape and Reel
KSH45H11TM	KSH45H11	TO-252 3L (DPAK)	Tape and Reel
KSH45H11ITU	KSH45H11-I	TO-251 3L (IPAK)	Rail

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_{CEO}	Collector-Emitter Voltage	- 80	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 8	A
I_{CP}	Collector Current (Pulse)	- 16	A
P_C	Collector Dissipation (T_C = 25°C)	20	W
	Collector Dissipation (T_A = 25°C)	1.75	
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 to +150	°C

© 2002 Fairchild Semiconductor Corporation

Electrical Characteristics[1]

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{CEO}(sus)	Collector-Emitter Sustaining Voltage	I_C = - 30 mA, I_B = 0	- 80			V
I_{CEO}	Collector Cut-Off Current	V_{CE} = - 80 V, I_B = 0			- 10	μA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = - 5 V, I_C = 0			- 50	μA
h_{FE}	DC Current Gain	V_{CE} = - 1 V, I_C = - 2 A	60			
		V_{CE} = - 1 V, I_C = - 4 A	40			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = - 8 A, I_B = - 0.4 A			- 1	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = - 8 A, I_B = - 0.8 A			- 1.5	V
f_T	Current Gain Bandwidth Product	V_{CE} = - 10 V, I_C = - 0.5 A		40		MHz
C_{ob}	Collector Capacitance	V_{CB} = - 10 V, f = 1 MHz		230		pF
t_{ON}	Turn-On Time	I_C = - 5 A, I_{B1} = - I_{B2} = - 0.5 A		135		ns
t_{STG}	Storage Time			500		ns
t_F	Fall Time			100		ns

Note:

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

© 2002 Fairchild Semiconductor Corporation

Typical Performance Characteristics

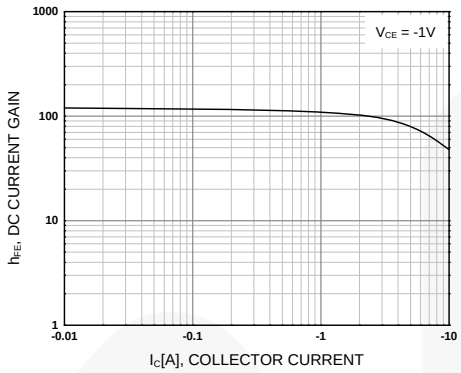


Figure 1. DC Current Gain

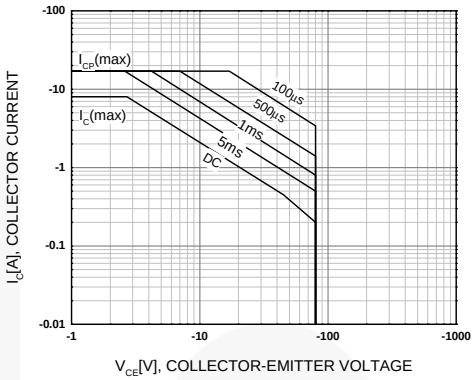


Figure 2. Safe Operating Area

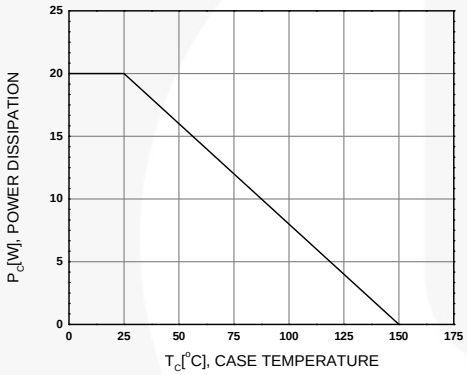
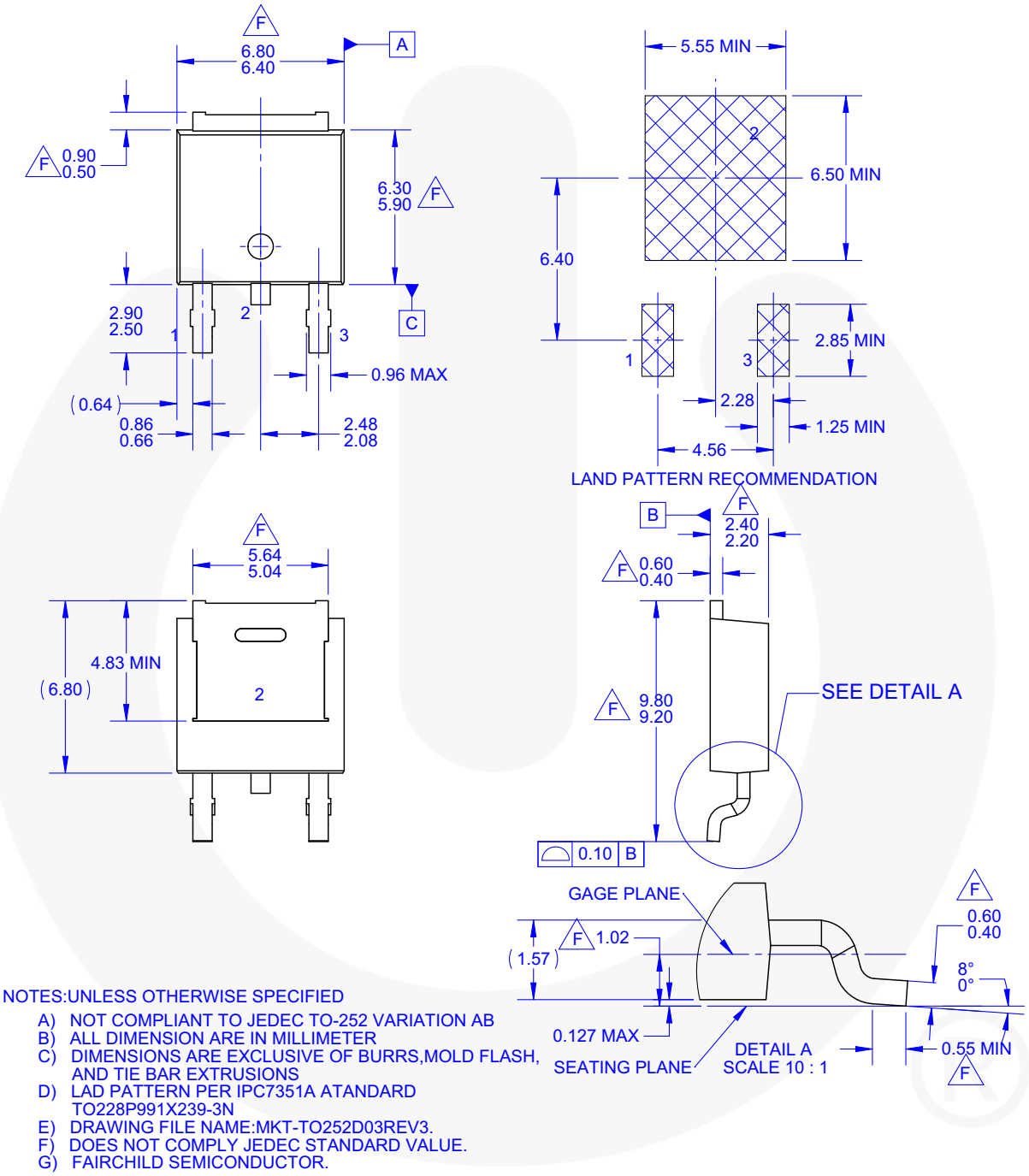


Figure 3. Power Derating

© 2002 Fairchild Semiconductor Corporation

Physical Dimensions



NOTES:UNLESS OTHERWISE SPECIFIED

A) NOT COMPLIANT TO JEDEC TO-252 VARIATION AB
B) ALL DIMENSION ARE IN MILLIMETER
C) DIMENSIONS ARE EXCLUSIVE OF BURRS,MOLD FLASH, AND TIE BAR EXTRUSIONS
D) LAD PATTERN PER IPC7351A ATANDARD TO228P991X239-3N
E) DRAWING FILE NAME:MKT-TO252D03REV3.
F) DOES NOT COMPLY JEDEC STANDARD VALUE.
G) FAIRCHILD SEMICONDUCTOR.

Figure 4. 3-LEAD, TO-252, NOT COMPLIANT TO JEDEC TO-252 VAR. AB, SURFACE MOUNT (DPAK)

© 2002 Fairchild Semiconductor Corporation

Physical Dimensions (Continued)

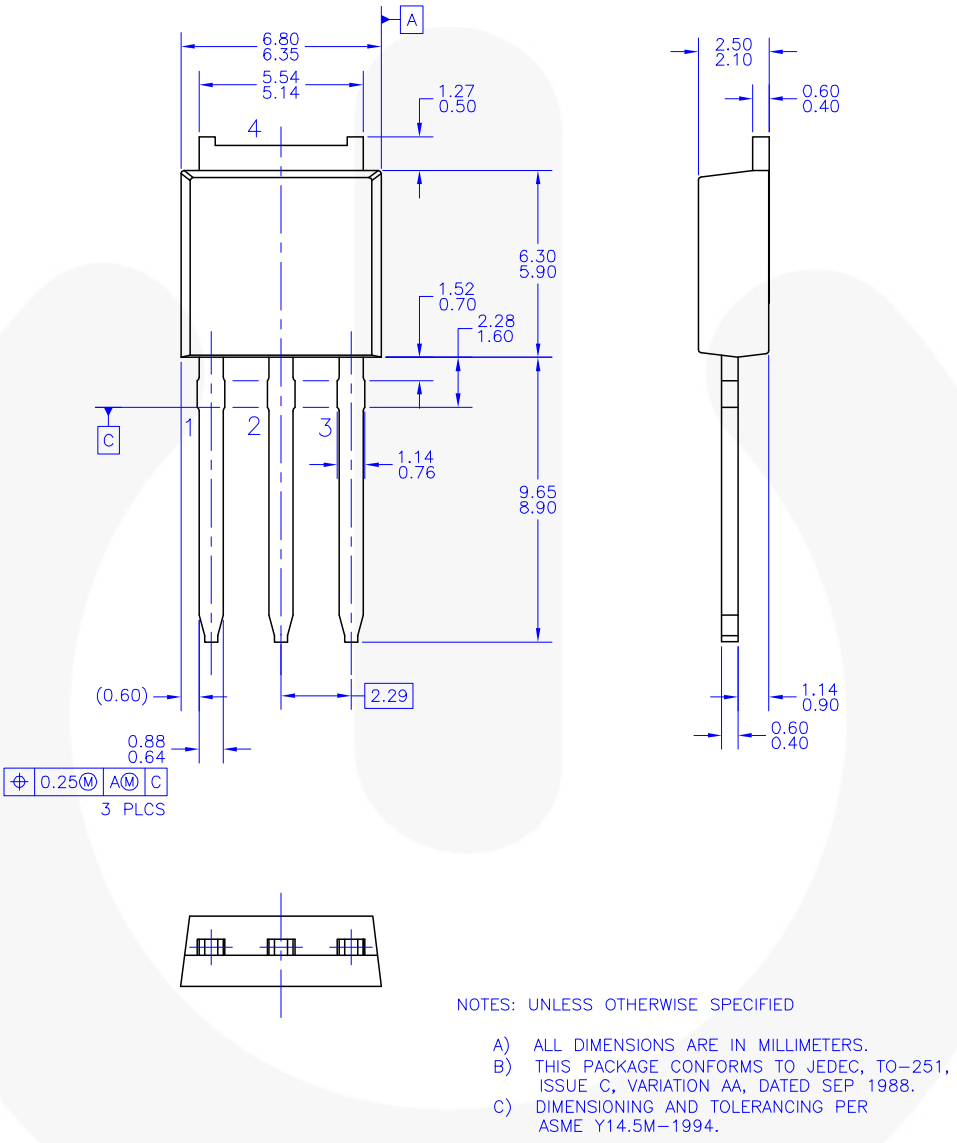


Figure 5. TO-251 (IPAK) MOLDED, 3-LEAD

TRADEMARKS

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

AccuPower™
AttitudeEngine™
Awinda®
AX-CAP®*
BitSiC™
Build it Now™
CorePLUS™
CorePOWER™
CROSSVOLT™
CTL™
Current Transfer Logic™
DEUXPEED®
Dual Cool™
EcoSPARK®
EfficientMax™
ESBC™
F®
Fairchild®
Fairchild Semiconductor®
FACT Quiet Series™
FACT®
FAST®
FastvCore™
FETBench™
FPS™
F-PFS™
FRFET®
Global Power Resource SM
GreenBridge™
Green FPS™
Green FPS™ e-Series™
G*max*™
GTO™
IntelliMAX™
ISOPLANAR™
Making Small Speakers Sound Louder and Better™
MegaBuck™
MICROCOUPLER™
MicroFET™
MicroPak™
MicroPak2™
MillerDrive™
MotionMax™
MotionGrid®
MTi®
MTx®
MVN®
mWSaver®
OptoHiT™
OPTOLOGIC®
OPTOPLANAR®
®
Power Supply WebDesigner™
PowerTrench®
PowerXS™
Programmable Active Droop™
QFET®
QS™
Quiet Series™
RapidConfigure™
™
Saving our world, 1mW/W/kW at a time™
SignalWise™
SmartMax™
SMART START™
Solutions for Your Success™
SPM®
STEALTH™
SuperFET®
SuperSOT™-3
SuperSOT™-6
SuperSOT™-8
SupreMOS®
SyncFET™
Sync-Lock™
SYSTEM GENERAL®*
TinyBoost®
TinyBuck®
TinyCalc™
TinyLogic®
TINYOPTO™
TinyPower™
TinyPWM™
TinyWire™
TranSiC™
TriFault Detect™
TRUECURRENT®*
µSerDes™
SerDes™
UHC®
Ultra FRFET™
UniFET™
VCX™
VisualMax™
VoltagePlus™
XS™
Xsens™
仙童™

* Trademarks of System General Corporation, used under license by Fairchild Semiconductor.

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. TO OBTAIN THE LATEST, MOST UP-TO-DATE DATASHEET AND PRODUCT INFORMATION, VISIT OUR WEBSITE AT HTTP://WWW.FAIRCHILDSEMI.COM. 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

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, and (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 a significant injury of the user.
2. A critical component in 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.

ANTI-COUNTERFEITING POLICY

Fairchild Semiconductor Corporation's Anti-Counterfeiting Policy. Fairchild's Anti-Counterfeiting Policy is also stated on our external website, www.fairchildsemi.com, under Sales Support.

Counterfeiting of semiconductor parts is a growing problem in the industry. All manufacturers of semiconductor products are experiencing counterfeiting of their parts. Customers who inadvertently purchase counterfeit parts experience many problems such as loss of brand reputation, substandard performance, failed applications, and increased cost of production and manufacturing delays. Fairchild is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. Fairchild strongly encourages customers to purchase Fairchild parts either directly from Fairchild or from Authorized Fairchild Distributors who are listed by country on our web page cited above. Products customers buy either from Fairchild directly or from Authorized Fairchild Distributors are genuine parts, have full traceability, meet Fairchild's quality standards for handling and storage and provide access to Fairchild's full range of up-to-date technical and product information. Fairchild and our Authorized Distributors will stand behind all warranties and will appropriately address any warranty issues that may arise. Fairchild will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. Fairchild is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

PRODUCT STATUS DEFINITIONS

Definition of Terms

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

Rev. I74