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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.



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 $T_A = 25^\circ\text{C}$ 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 ($T_C = 25^\circ\text{C}$)	20	W
	Collector Dissipation ($T_A = 25^\circ\text{C}$)	1.75	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 to +150	$^\circ\text{C}$

Electrical Characteristics⁽¹⁾

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

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

Note:

1. Pulse test: pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.

Typical Performance Characteristics

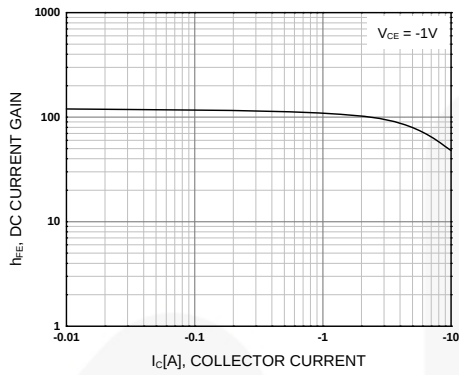


Figure 1. DC Current Gain

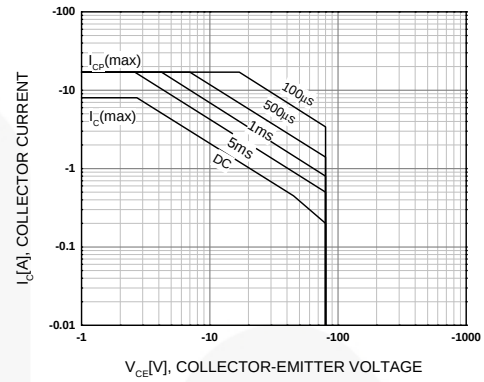


Figure 2. Safe Operating Area

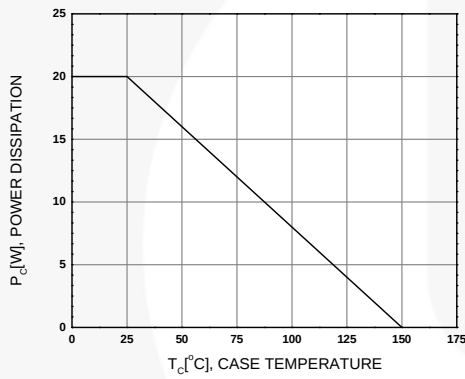


Figure 3. Power Derating

Physical Dimensions

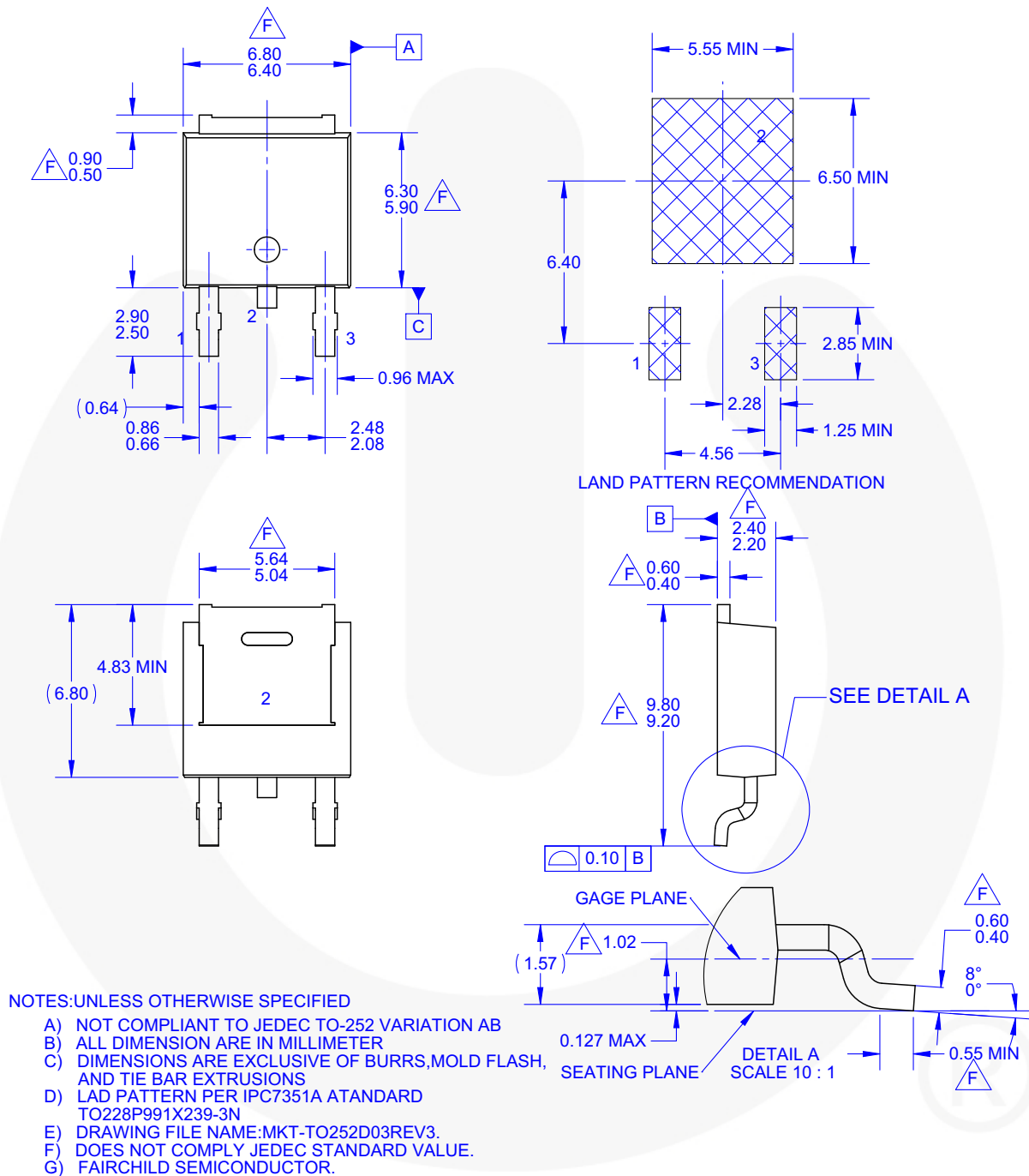


Figure 4. 3-LEAD, TO-252, NOT COMPLIANT TO JEDEC TO-252 VAR. AB, SURFACE MOUNT (DPAK)

Physical Dimensions (Continued)

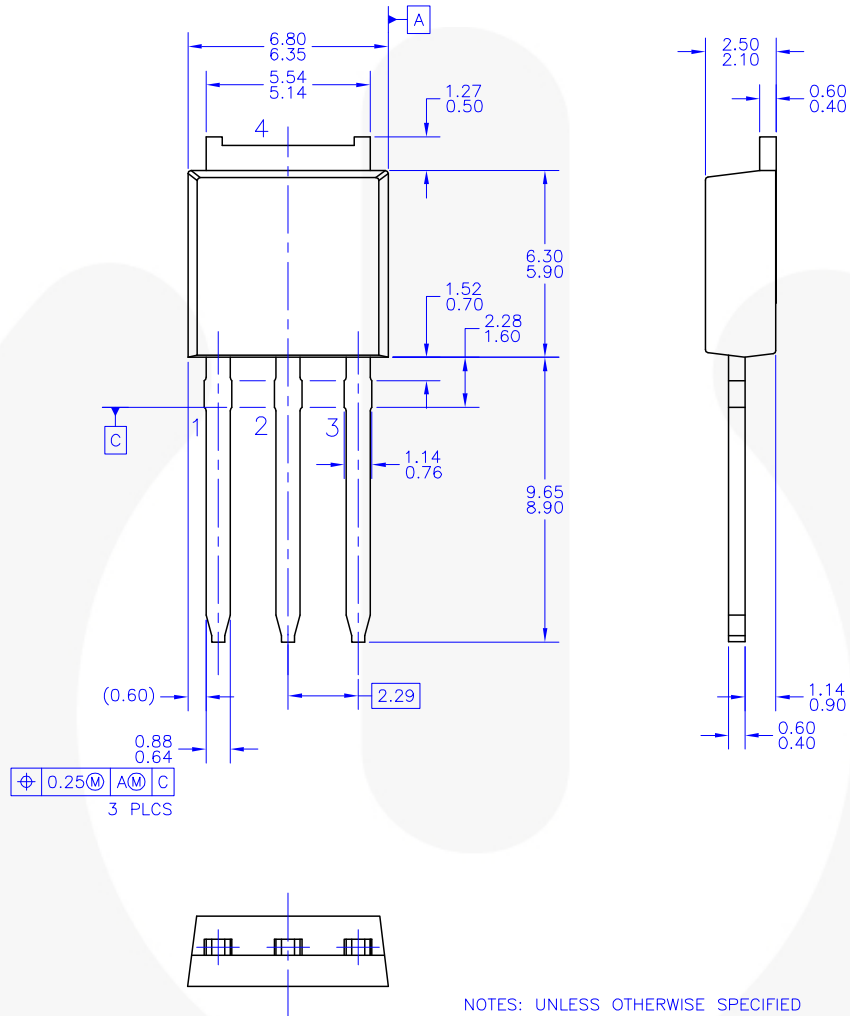


Figure 5. TO-251 (IPAK) MOLDED, 3-LEAD



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