

# KSH45H11

## PNP Epitaxial Silicon Transistor

### Features

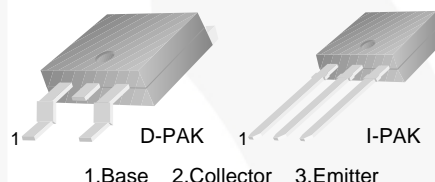
- Lead Formed for Surface Mount Application (No Suffix)
- Straight Lead (I-PAK, "-I" Suffix)
- Electrically Similar to Popular KSE45H
- Fast Switching Speeds
- Low Collector Emitter Saturation Voltage

### 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  $T_C = 25^\circ\text{C}$  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	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 to 150	$^\circ\text{C}$

## Electrical Characteristics

Values are at  $T_C = 25^\circ\text{C}$  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	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-Off Current	$V_{BE} = -5\text{ V}, I_C = 0$			-50	$\mu\text{A}$
$h_{FE}$	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
$V_{BE(on)}$	Base-Emitter Saturation Voltage	$I_C = -8\text{ A}, I_B = -0.8\text{ A}$			-1.5	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -10\text{ A}, I_C = -0.5\text{ A}$		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:  $p_w \leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$ .

## Typical Performance Characteristics

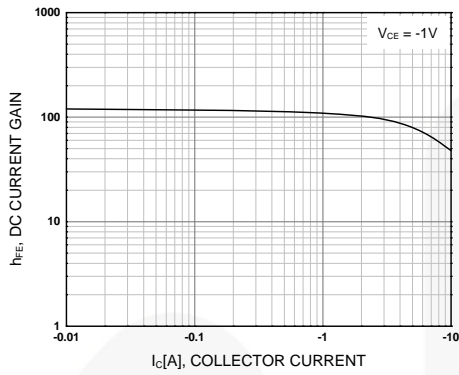


Figure 1. DC Current Gain

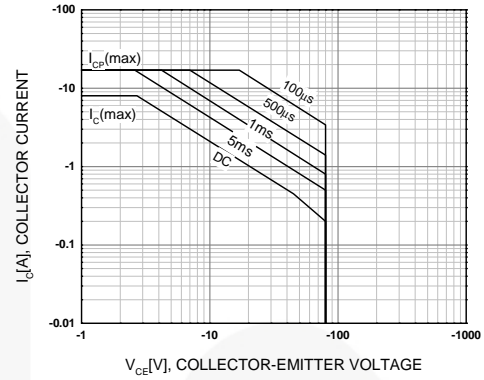


Figure 2. Safe Operating Area

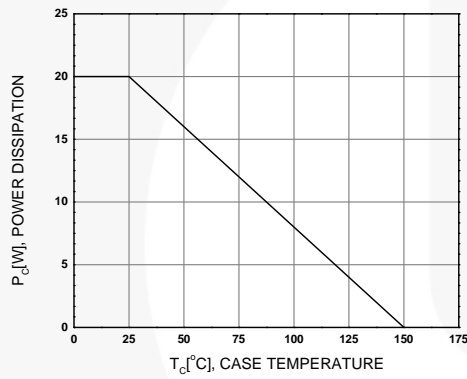
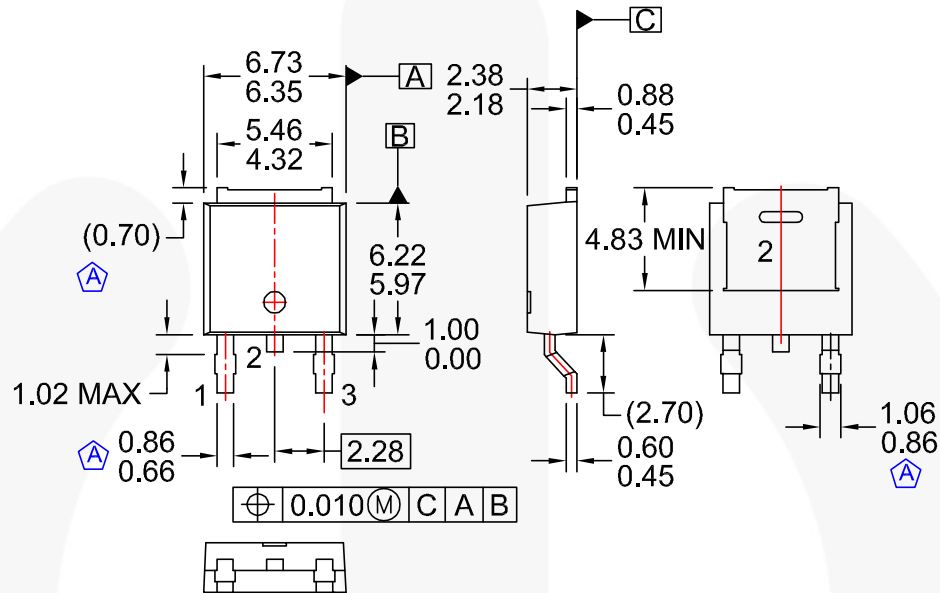


Figure 3. Power Derating

## Physical Dimensions

## TO-252 3L



- NOTES: UNLESS OTHERWISE SPECIFIED  
 (A) CONFORMS TO JEDEC TO-252 VARIATION AB EXCEPT WHERE NOTED  
 B) ALL DIMENSIONS ARE IN MILLIMETERS.  
 C) DRAWING CONFORMS TO ASME Y14.5M-1994  
 D) DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.  
 E) FORMERLY NAMED BD1733  
 F) DRAWING FILE NAME: MKT-TO252D03REV1

**Figure 4. 3-LEAD, TO-252, JEDEC TO-252 VAR. AB, SURFACE MOUNT (DPAK) (ACTIVE)**

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## Physical Dimensions (Continued)

## TO-251 3L

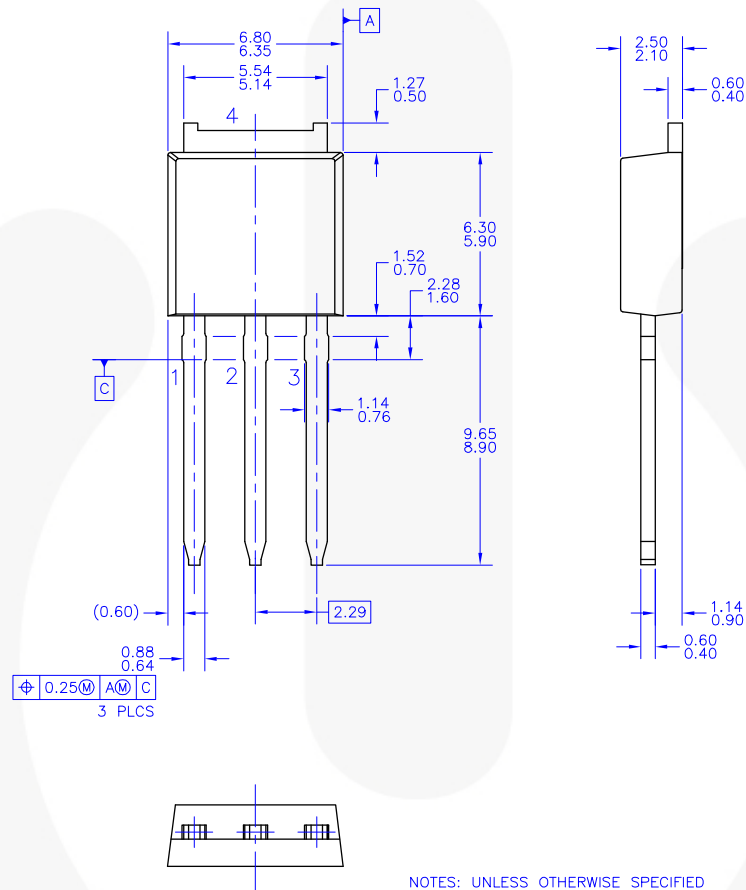


Figure 5. TO-251 (IPAK) MOLDED, 3-LEAD (ACTIVE)

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For current tape and reel specifications, visit Fairchild Semiconductor's online packaging area:

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Rev. I66