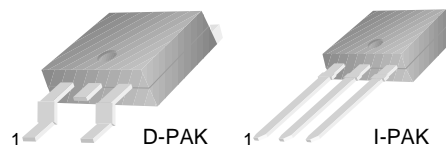


## KSH29/29C

### General Purpose Amplifier Low Speed Switching Applications

- Lead Formed for Surface Mount Application (No Suffix)
- Straight Lead (I-PAK, "- I" Suffix)
- Electrically Similar to Popular TIP29 and TIP29C



1.Base 2.Collector 3.Emitter

### NPN Epitaxial Silicon Transistor

#### Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage		
	: KSH29	40	V
	: KSH29C	100	V
$V_{CEO}$	Collector-Emitter Voltage		
	: KSH29	40	V
	: KSH29C	100	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current (DC)	1	A
$I_{CP}$	Collector Current (Pulse)	3	A
$I_B$	Base Current	0.4	A
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	15	W
	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	1.56	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

#### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage				
	: KSH29	$I_C = 30\text{mA}, I_B = 0$	40		V
	: KSH29C		100		V
$I_{CEO}$	Collector Cut-off Current				
	: KSH29	$V_{CE} = 40\text{V}, I_B = 0$		50	$\mu\text{A}$
	: KSH29C	$V_{CE} = 60\text{V}, I_B = 0$		50	$\mu\text{A}$
$I_{CES}$	Collector Cut-off Current				
	: KSH29	$V_{CE} = 40\text{V}, V_{BE} = 0$		20	$\mu\text{A}$
	: KSH29C	$V_{CE} = 100\text{V}, V_{BE} = 0$		20	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{BE} = 5\text{V}, I_C = 0$		1	mA
$h_{FE}$	DC Current Gain	$V_{CE} = 4\text{V}, I_C = 0.2\text{A}$	40		
		$V_{CE} = 4\text{V}, I_C = 1\text{A}$	15	75	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 1\text{A}, I_B = 125\text{mA}$		0.7	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 4\text{A}, I_C = 1\text{A}$		1.3	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 200\text{mA}$	3		MHz

# Typical Characteristics

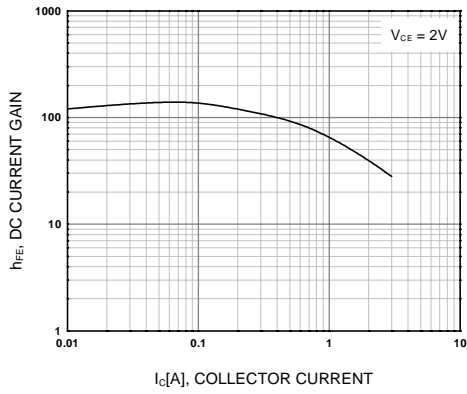


Figure 1. DC current Gain

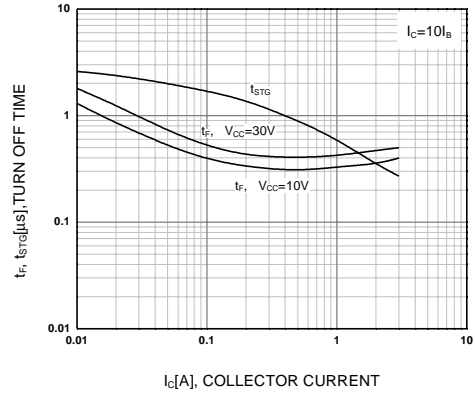


Figure 2. Turn Off Time

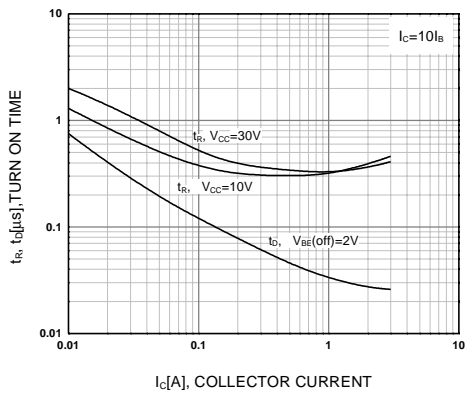


Figure 3. Turn On Time

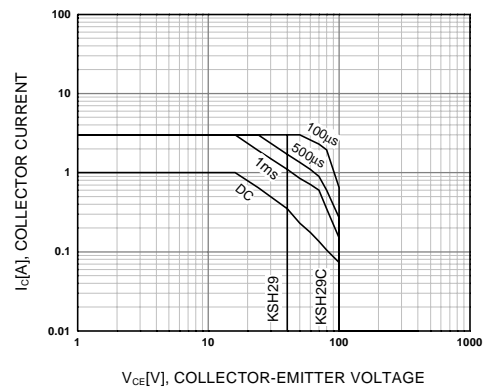


Figure 4. Safe Operating Area

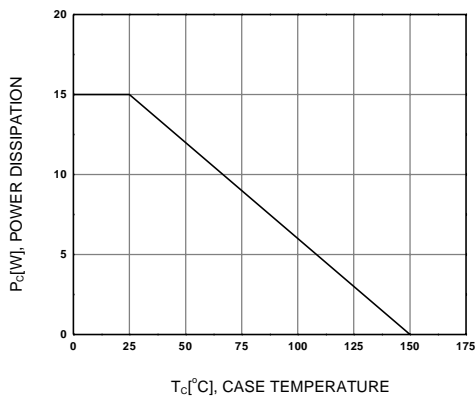
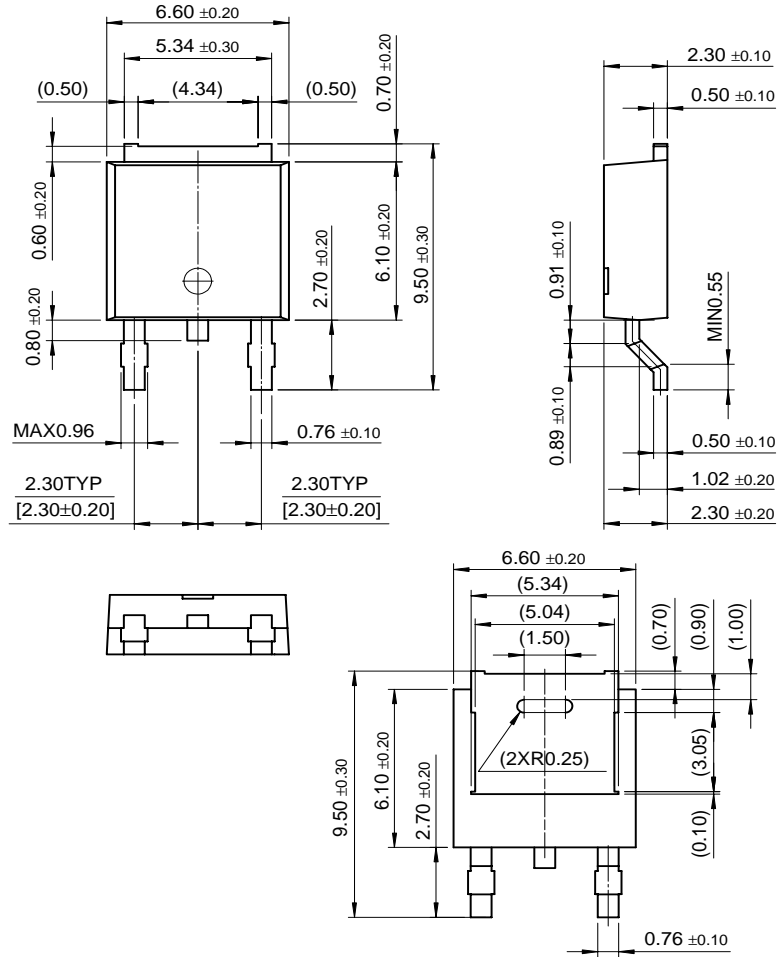


Figure 5. Power Derating

# Package Dimensions

KSH29/29C

## D-PAK

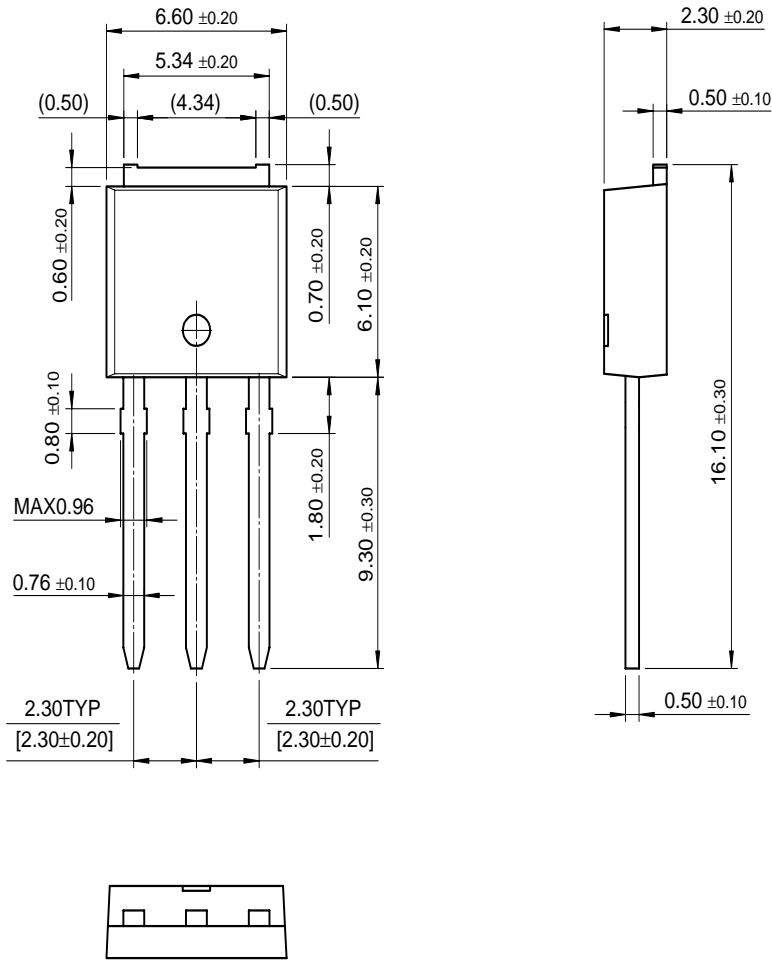


Dimensions in Millimeters

# Package Dimensions (Continued)

KSH29/29C

## I-PAK



Dimensions in Millimeters

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CoolFET <sup>™</sup>	FAST <sup>™</sup>	MicroFET <sup>™</sup>	PowerTrench <sup>®</sup>	SuperSOT <sup>™</sup> -6
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