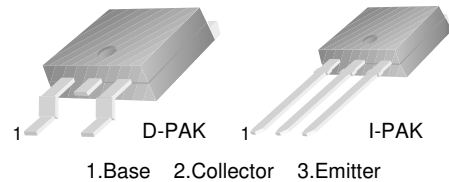


# KSH200

## NPN Epitaxial Silicon Transistor

### Features

- D-PAK for Surface Mount Applications
- High DC Current Gain
- Lead Formed for Surface Mount Applications (No Suffix)
- Straight Lead (I-PAK, “ - I “ Suffix)



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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{EBO}$	Emitter-Base Voltage	8	V
$I_C$	Collector Current (DC)	5	A
$I_{CP}$	Collector Current (Pulse)	10	A
$I_B$	Base Current	1	A
$P_C$	Collector Dissipation ( $T_c = 25^\circ\text{C}$ )	12.5	W
	Collector Dissipation ( $T_a = 25^\circ\text{C}$ )	1.4	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 to 150	$^\circ\text{C}$

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

Symbol	Parameter	Conditions	Min.	Max.	Units
$BV_{CEO(sus)}$	* Collector Emitter Sustaining Voltage	$I_C = 100\text{mA}, I_B = 0$	25		V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = 40\text{V}, I_E = 0$		100	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 8\text{V}, I_C = 0$		100	nA
$h_{FE}$	* DC Current Gain	$V_{CE} = 1\text{V}, I_C = 500\text{mA}$	70		
		$V_{CE} = 1\text{V}, I_C = 2\text{A}$	45	180	
		$V_{CE} = 2\text{V}, I_C = 5\text{A}$	10		
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 500\text{mA}, I_B = 50\text{mA}$		0.3	V
		$I_C = 2\text{A}, I_B = 200\text{mA}$		0.75	V
		$I_C = 5\text{A}, I_B = 1\text{A}$		1.8	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = 5\text{A}, I_B = 1\text{A}$		2.5	V
$V_{BE(on)}$	* Base-Emitter On Voltage	$V_{CE} = 1\text{V}, I_C = 2\text{A}$		1.6	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 100\text{mA}$	65		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$		80	pF

\* Pulse test:  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$  Pulsed

Typical Performance Characteristics

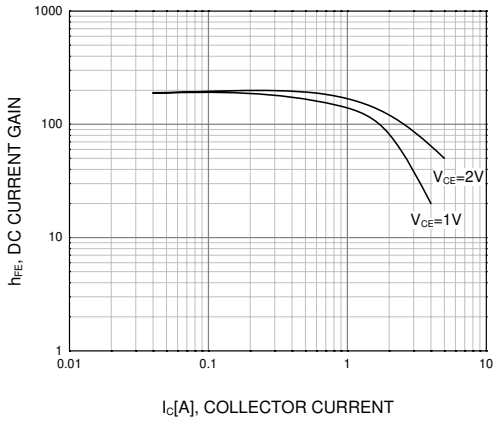


Figure 1. DC current Gain

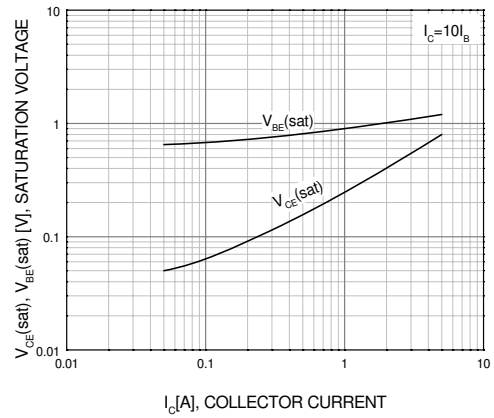


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

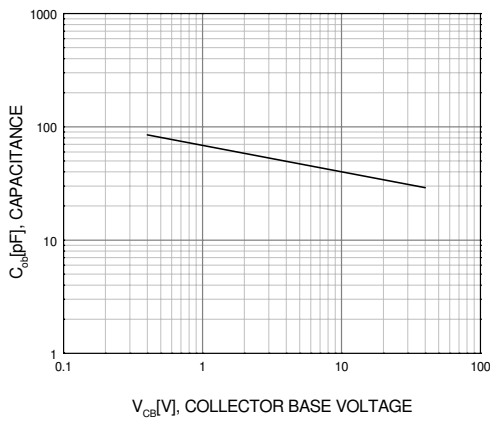


Figure 3. Collector Output Capacitance

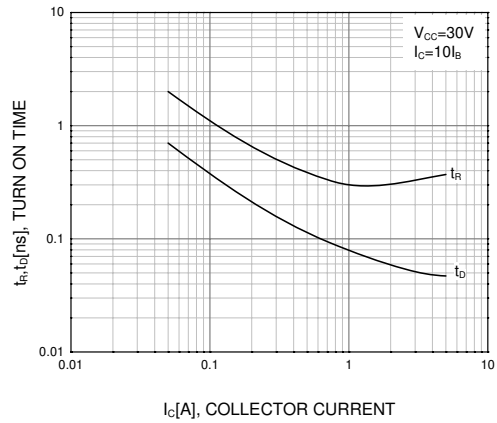


Figure 4. Turn On Time

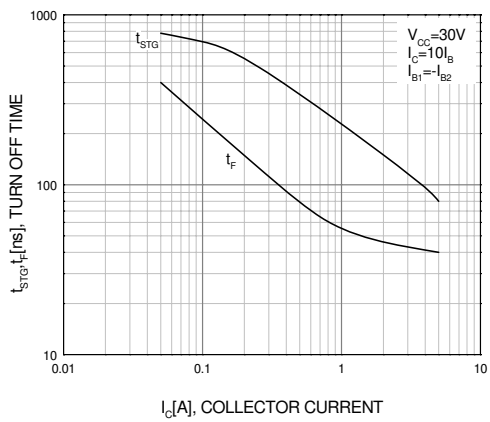


Figure 5. Turn Off Time

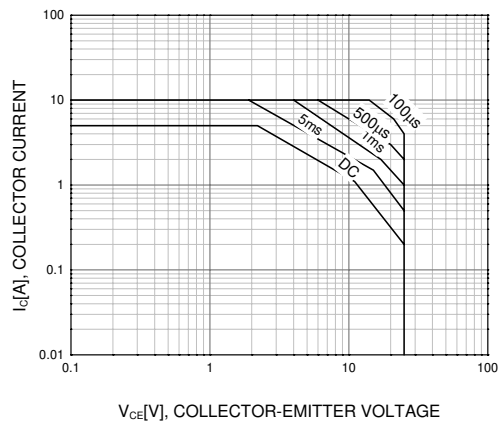


Figure 6. Safe Operating Area

Typical Performance Characteristics (Continued)

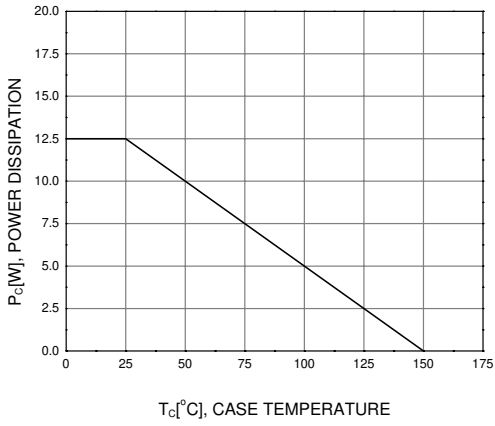
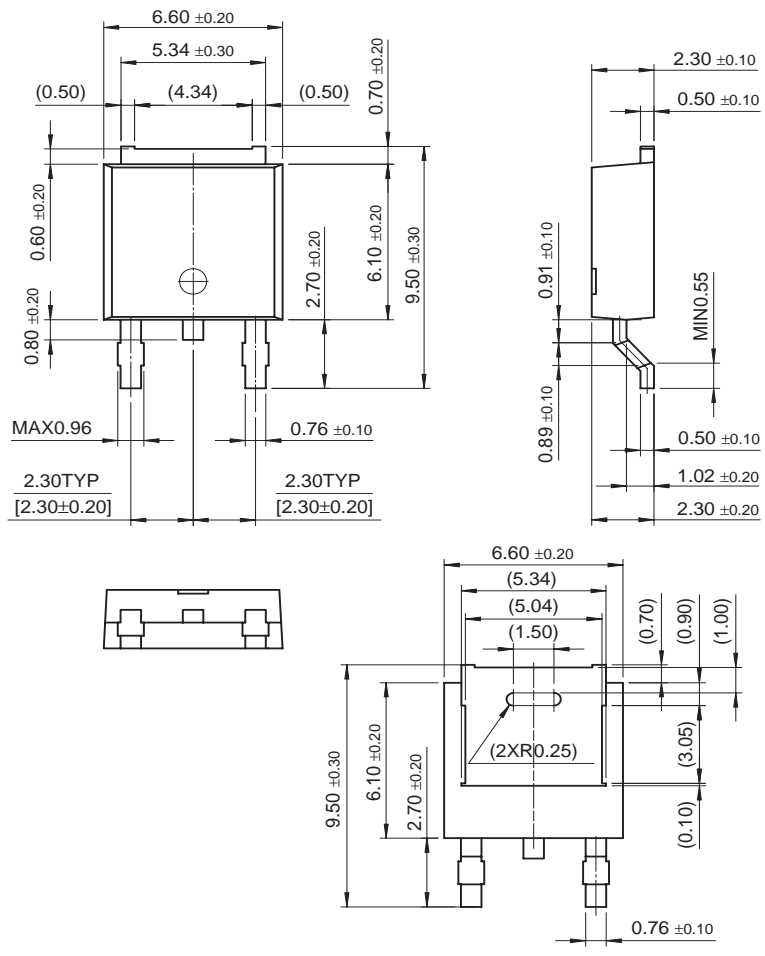


Figure 7. Power Derating

Physical Dimensions

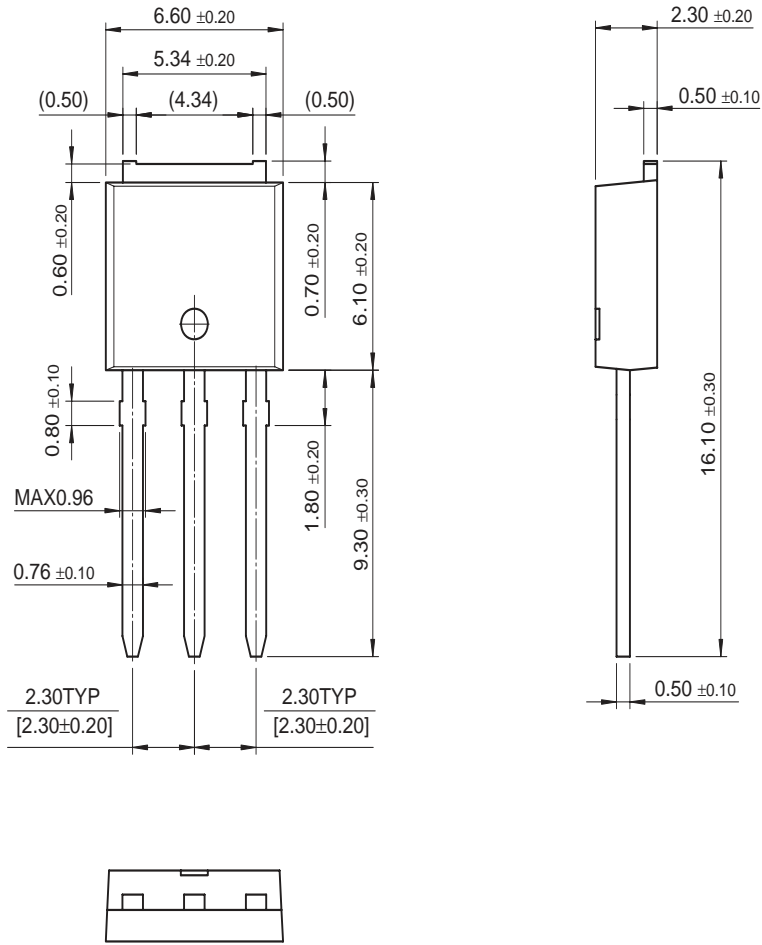
D-PAK



Dimensions in Millimeters

Physical Dimensions (Continued)

I-PAK



Dimensions in Millimeters



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| FACT®                    | Motion-SPM™                         | SuperSOT™-3                           |   |
| FAST®                    | OptoHit™                            | SuperSOT™-6                           |   |
| FastvCore™               | OPTOLOGIC®                          | SuperSOT™-8                           |   |
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| FlashWriter®*            | ™                                   | SyncFET™                              |   |
| FPS™                     | PDP SPM™                            | Sync-Lock™                            |   |

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