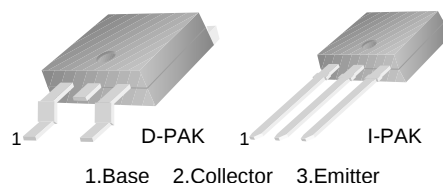


KSH200

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	$V_{CE} = 1\text{V}$, $I_C = 500\text{mA}$ $V_{CE} = 1\text{V}$, $I_C = 2\text{A}$ $V_{CE} = 2\text{V}$, $I_C = 5\text{A}$	70 45 10	180	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 500\text{mA}$, $I_B = 50\text{mA}$ $I_C = 2\text{A}$, $I_B = 200\text{mA}$ $I_C = 5\text{A}$, $I_B = 1\text{A}$		0.3 0.75 1.8	V V 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

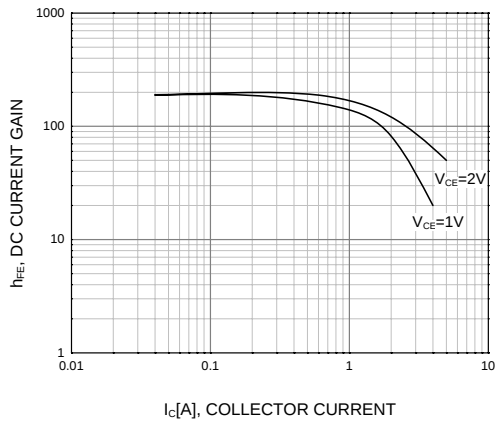


Figure 1. DC current Gain

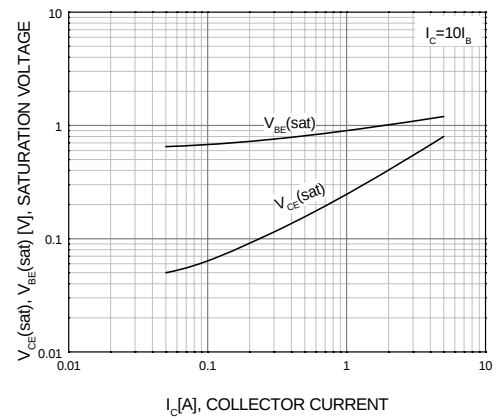


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

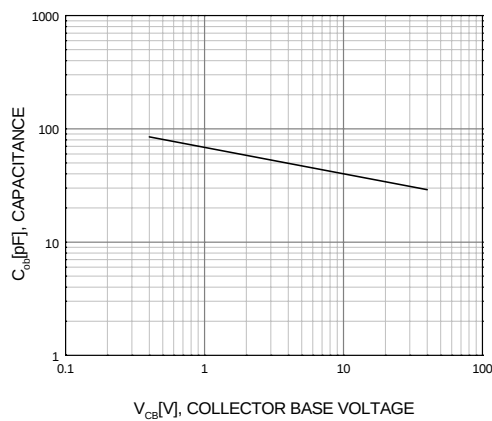


Figure 3. Collector Output Capacitance

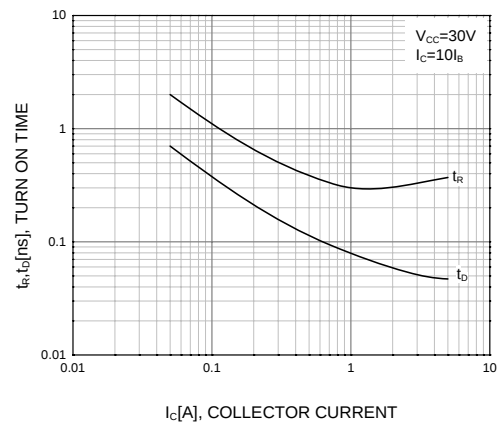


Figure 4. Turn On Time

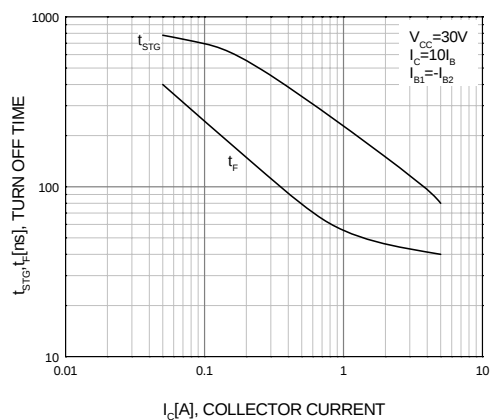


Figure 5. Turn Off Time

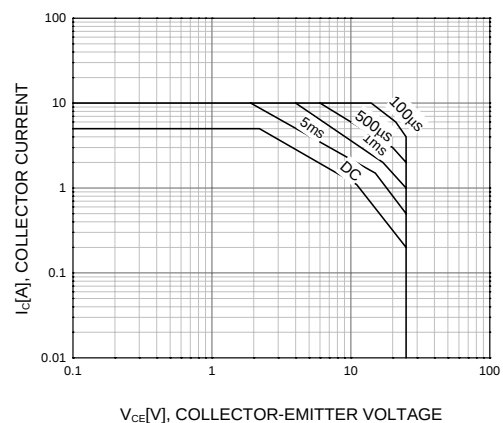
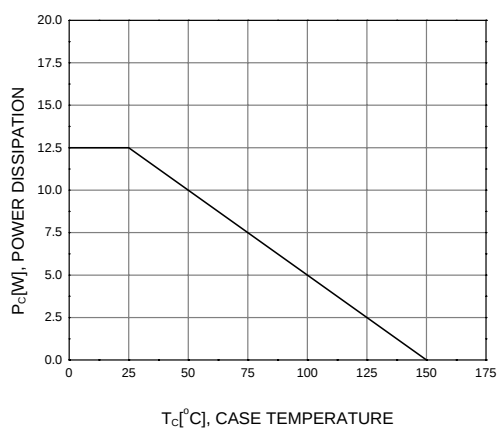
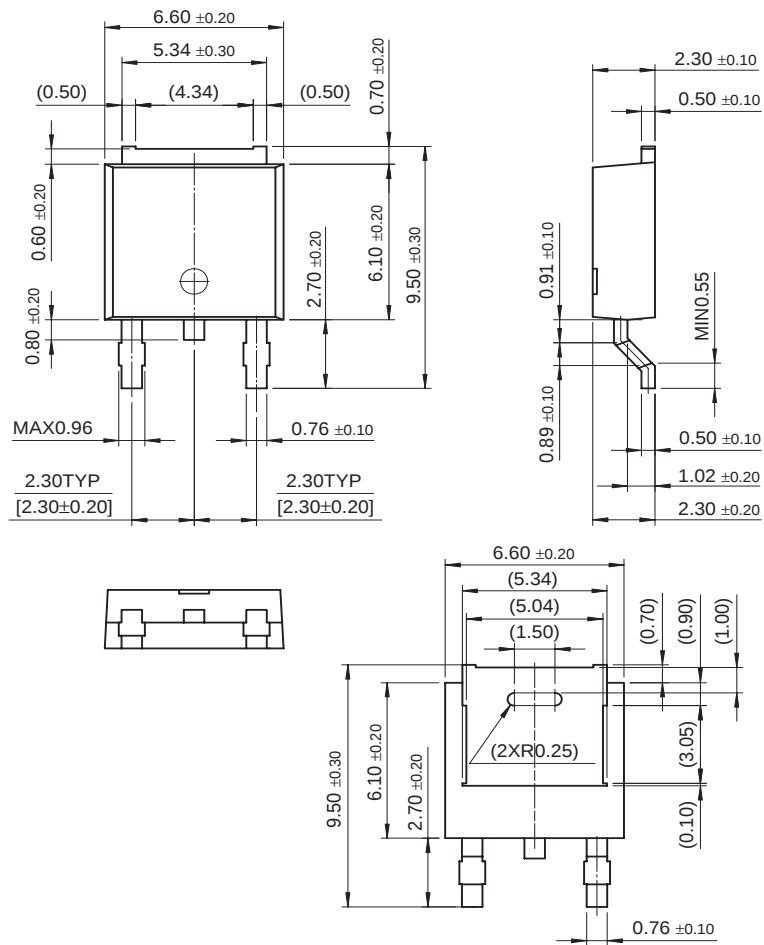


Figure 6. Safe Operating Area

Typical Performance Characteristics (Continued)**Figure 7. Power Derating**

Physical Dimensions

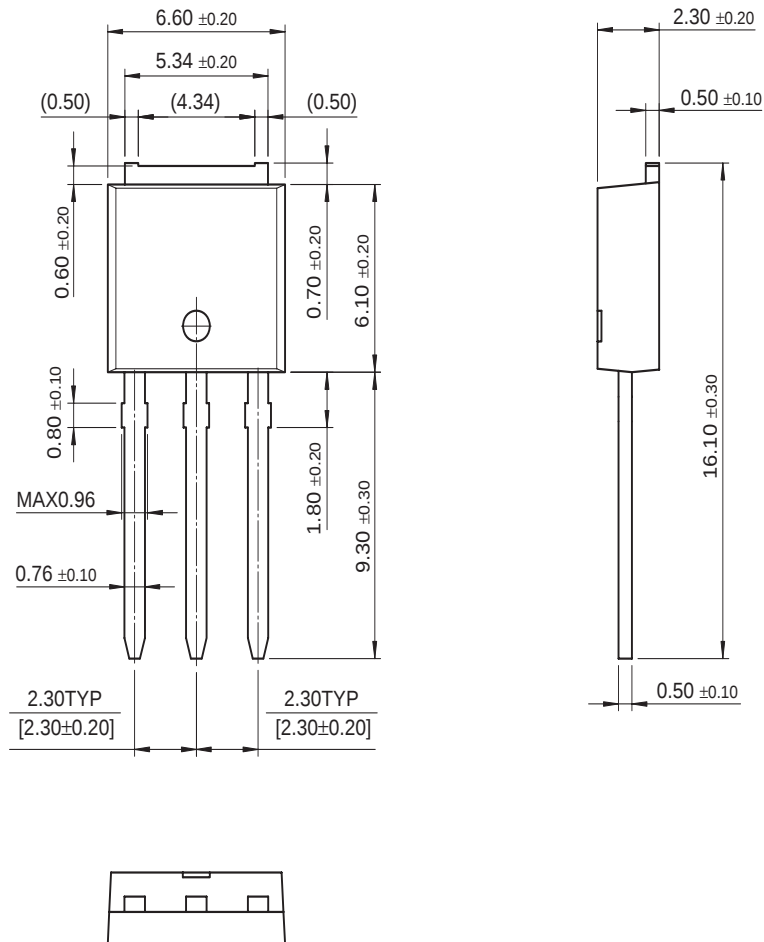
D-PAK



Dimensions in Millimeters

Physical Dimensions (Continued)

I-PAK



Dimensions in Millimeters



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Rev. I49

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