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KSH200TF

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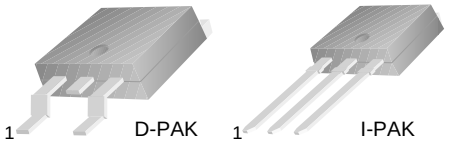
FAIRCHILD SEMICONDUCTOR®

August 2010

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)



1.Base 2.Collector 3.Emitter

Absolute Maximum Ratings T_a = 25°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°C)	12.5	W
	Collector Dissipation (T_a = 25°C)	1.4	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 to 150	°C

Electrical Characteristics T_a = 25°C unless otherwise noted

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

* Pulse test: PW ≤ 300μs, Duty Cycle ≤ 2% Pulsed

Typical Performance Characteristics

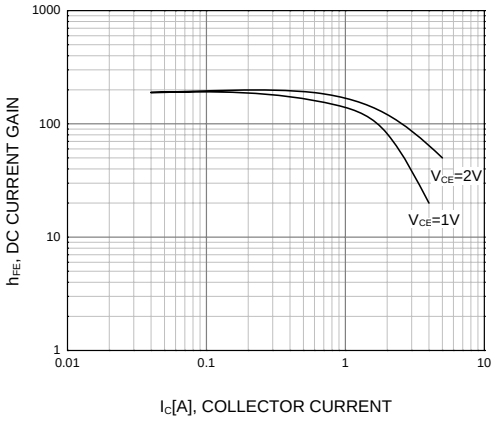


Figure 1. DC current Gain

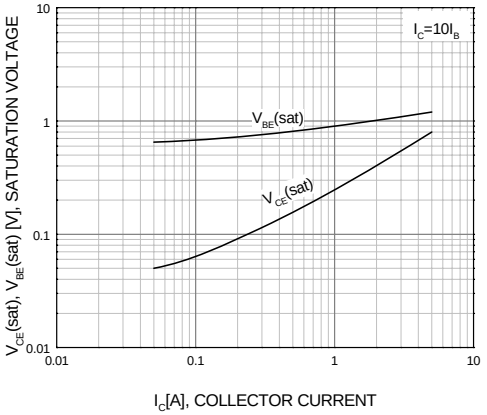


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

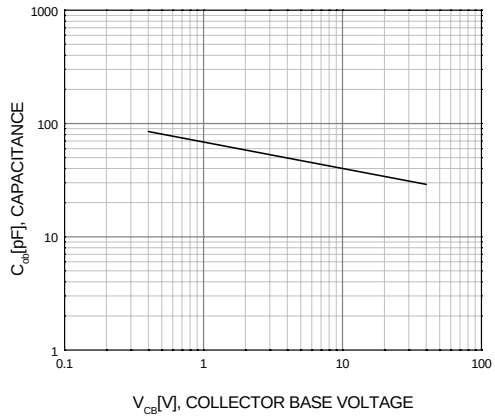


Figure 3. Collector Output Capacitance

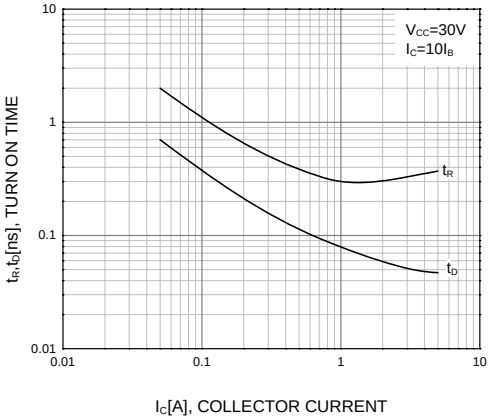


Figure 4. Turn On Time

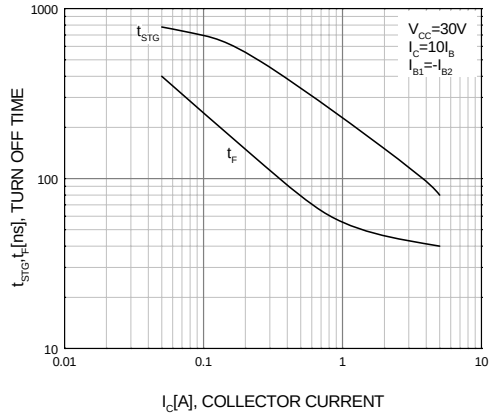


Figure 5. Turn Off Time

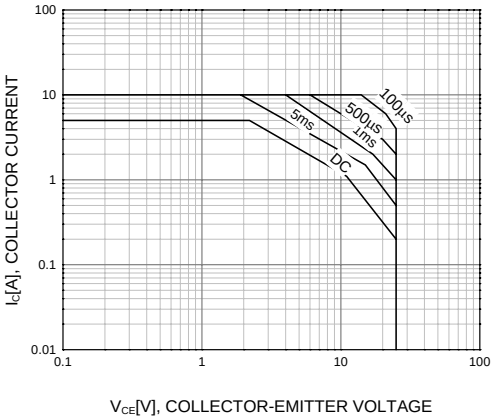


Figure 6. Safe Operating Area

Typical Performance Characteristics (Continued)

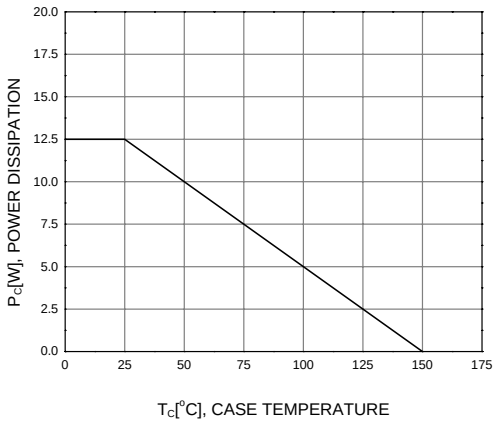
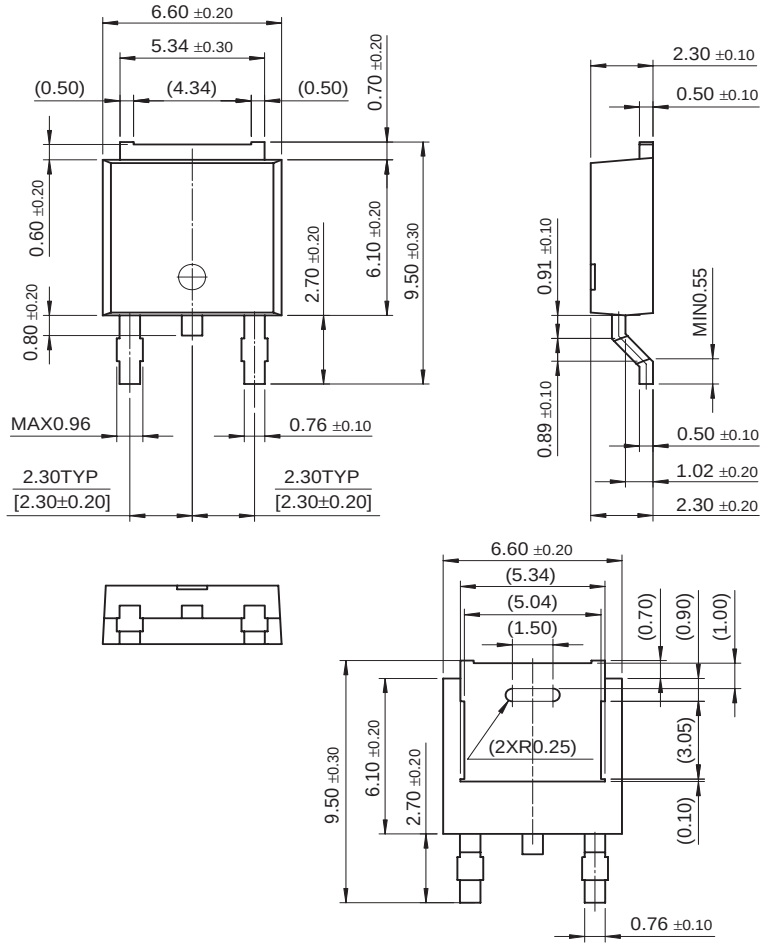


Figure 7. Power Derating

Physical Dimensions

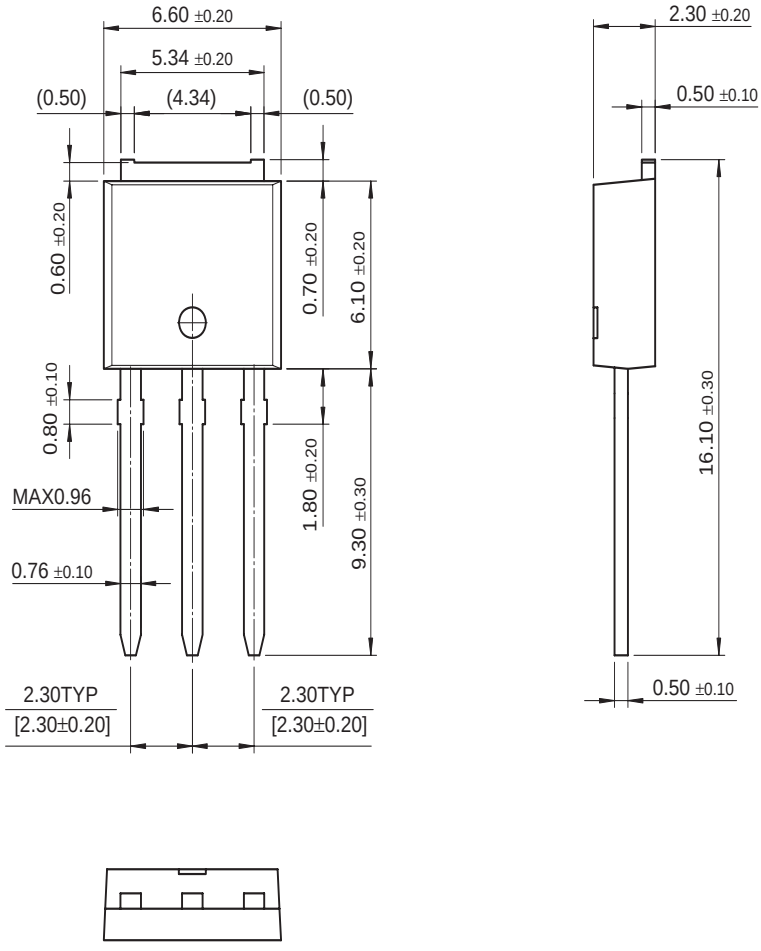
D-PAK



Dimensions in Millimeters

Physical Dimensions (Continued)

I-PAK



Dimensions in Millimeters

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