

KSH31/31C

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 TIP31 and TIP31C



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage		
	: KSH31	40	V
	: KSH31C	100	V
V _{CEO}	Collector-Emitter Voltage		
	: KSH31	40	V
	: KSH31C	100	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current (DC)	3	А
I _{CP}	Collector Current (Pulse)	5	Α
I _B	Base Current	1	Α
P _C	Collector Dissipation (T _C =25°C)	15	W
	Collector Dissipation (T _a =25°C)	1.56	W
TJ	Junction Temperature	150	°C
T _{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V _{CFO} (sus)	* Collector-Emitter Sustaining Voltage				
	: KSH31	$I_C = 30 \text{mA}, I_B = 0$	40		V
	: KSH31C		100		V
I _{CEO}	Collector Cut-off Current				
	: KSH31	$V_{CE} = 40V, I_{B} = 0$		50	μΑ
	: KSH31C	$V_{CE} = 60V, I_{B} = 0$		50	μΑ
I _{CES}	Collector Cut-off Current				
	: KSH31	$V_{CE} = 40V, V_{BE} = 0$		20	μΑ
	: KSH31C	$V_{CE} = 100V, V_{BE} = 0$		20	μΑ
I _{EBO}	Emitter Cut-off Current	$V_{BE} = 5V, I_{C} = 0$		1	mA
h _{FE}	* DC Current Gain	$V_{CE} = 4V, I_{C} = 1A$	25		
		$V_{CE} = 4V, I_{C} = 3A$	10	50	
V _{CE} (sat)	* Collector-Emitter Saturation Voltage	$I_C = 3A, I_B = 375mA$		1.2	V
V _{BE} (on)	* Base-Emitter On Voltage	$V_{CE} = 4A, I_{C} = 3A$		1.8	V
f _T	Current Gain Bandwidth Product	V _{CE} = 10V, I _C = 500mA	3		MHz

* Pulse Test: PW≤300µs, Duty Cycle≤2%

Typical Characteristics

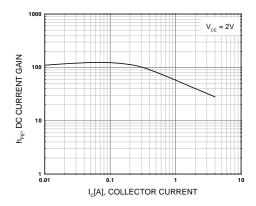


Figure 1. DC current Gain

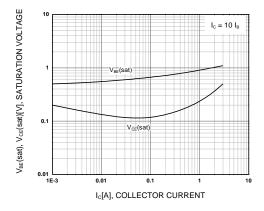


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

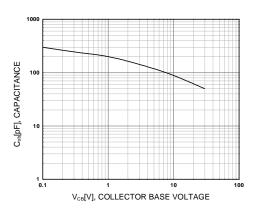


Figure 3. Collector Capacitance

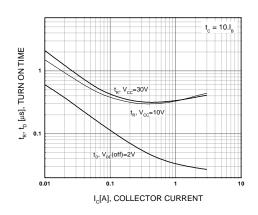


Figure 4. Turn On Time

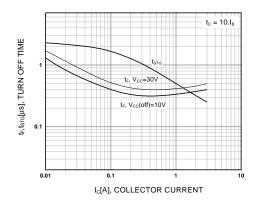


Figure 5. Turn Off Time

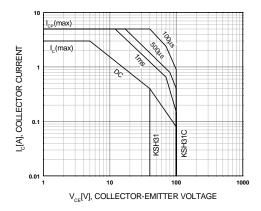


Figure 6. Safe Operating

Typical Characteristics (Continued)

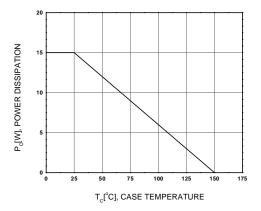
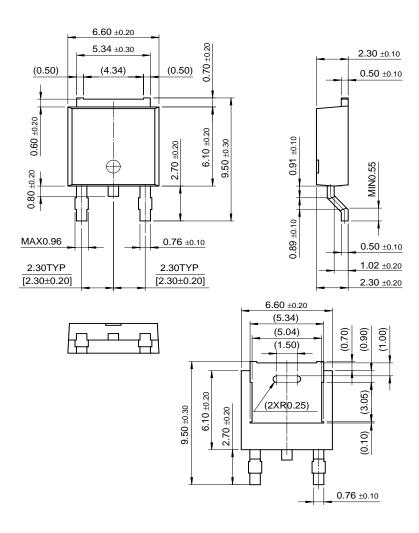


Figure 7. Power Derating

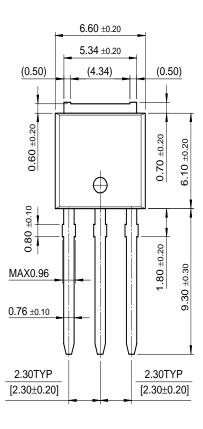
Package Dimensions

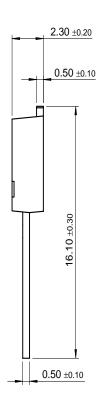
D-PAK



Package Dimensions (Continued)

I-PAK







Dimensions in Millimeters

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