

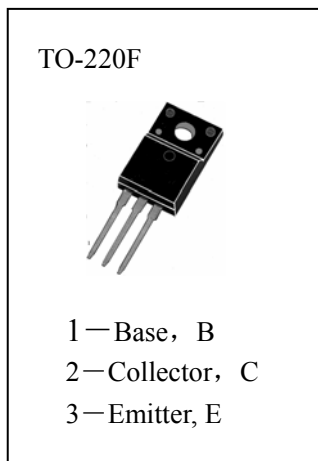
# KSH13005F

## ■ HIGH VOLTAGE SWITCH MODE APPLICATION

High Speed Switching  
Suitable for Switching Regulator and Motor Control

## ■ ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)

T <sub>stg</sub>	—Storage Temperature	.....	-55~150°C
T <sub>j</sub>	—Junction Temperature	.....	150°C
P <sub>C</sub>	—Collector Dissipation (T <sub>c</sub> =25°C)	.....	30W
V <sub>CBO</sub>	—Collector-Base Voltage	.....	700V
V <sub>CEO</sub>	—Collector-Emmitter Voltage	.....	400V
V <sub>EBO</sub>	—Emmitter-Base Voltage	.....	9V
I <sub>C</sub>	—Collector Current (DC)	.....	4A
I <sub>CP</sub>	—Collector Current (Pulse)	.....	8A
I <sub>B</sub>	—Base Current	.....	2A



## ■ 电参数 (T<sub>a</sub>=25°C)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV <sub>CEO</sub>	Collector-Emmitter Sustaining Voltage	400			V	I <sub>C</sub> =10mA, I <sub>B</sub> =0
I <sub>EBO</sub>	Emmitter-Base Cut-off Current			1	mA	V <sub>EB</sub> =9V, I <sub>C</sub> =0
H <sub>FE</sub>	DC Current Gain	10		40		V <sub>CE</sub> =5V, I <sub>C</sub> =1A
		8		40		V <sub>CE</sub> =5V, I <sub>C</sub> =2A
V <sub>CE(sat)</sub>	Collector- Emmitter Saturation Voltage			0.5	V	I <sub>C</sub> =1A, I <sub>B</sub> =0.2A
				0.6	V	I <sub>C</sub> =2A, I <sub>B</sub> =0.5A
				1	V	I <sub>C</sub> =4A, I <sub>B</sub> =1A
V <sub>BE(sat)</sub>	Base- Emmitter Saturation Voltage			1.2	V	I <sub>C</sub> =1A, I <sub>B</sub> =0.2A
				1.6	V	I <sub>C</sub> =2A, I <sub>B</sub> =0.5A
C <sub>ob</sub>	Output Capacitance		65		pF	V <sub>CB</sub> =10V, f=0.1MHz
f <sub>T</sub>	Current Gain-Bandwidth Product	4			MHz	V <sub>CE</sub> =10V, I <sub>C</sub> =0.5A
t <sub>ON</sub>	Turn On Time			0.8	μs	V <sub>CC</sub> =125V, I <sub>C</sub> =2A, I <sub>B1</sub> =-I <sub>B2</sub> =0.4A R <sub>L</sub> =125Ω
t <sub>S</sub>	Storage Time			4	μs	
t <sub>F</sub>	Fall Time			0.9	μs	

**h<sub>FE</sub> Classification:** H1 (10--16) H2 (14--21) H3 (19--26) H4 (24--31) H5 (29--40)

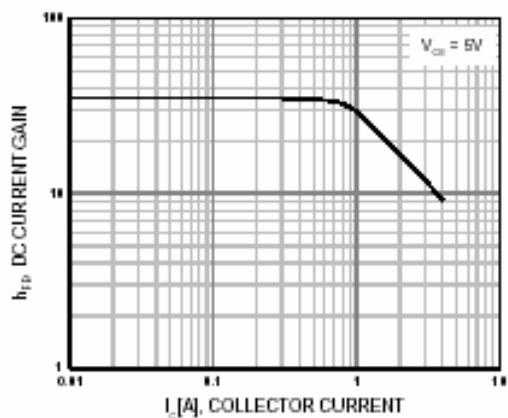
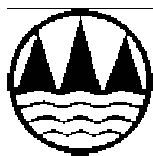


Figure 1. DC current Gain

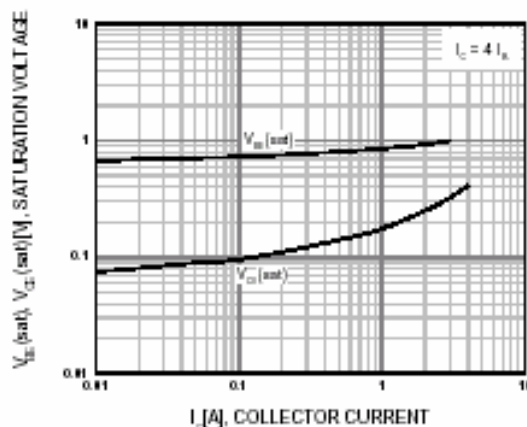


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

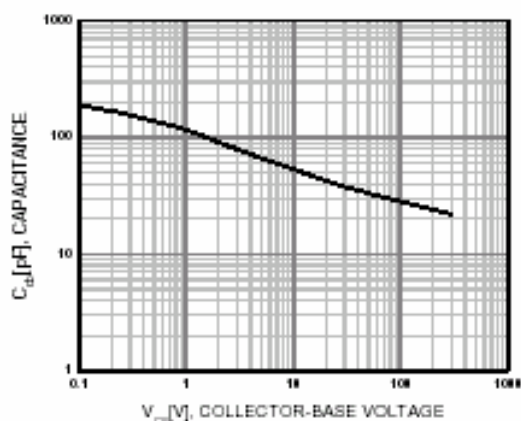


Figure 3. Collector Output Capacitance

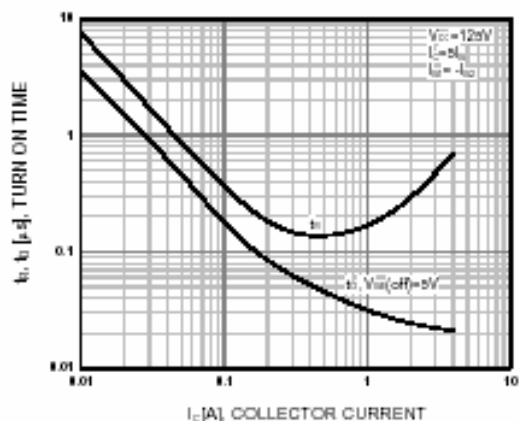


Figure 4. Turn On Time

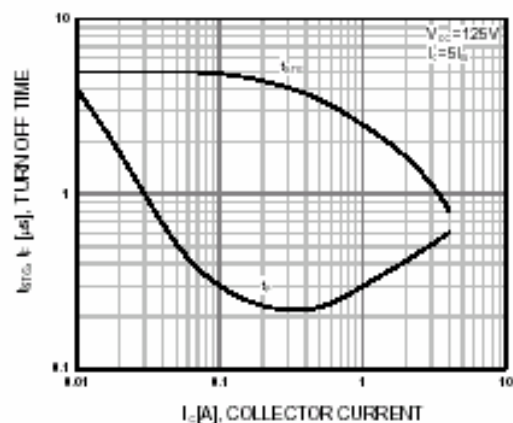


Figure 5. Turn Off Time

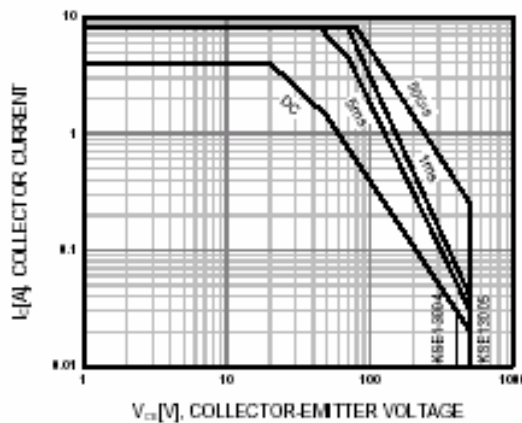
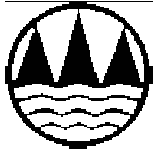


Figure 6. Safe Operating Area



**Shantou Huashan Electronic Devices Co.,Ltd.**

NPN SILICON TRANSISTOR

**KSH13005F**

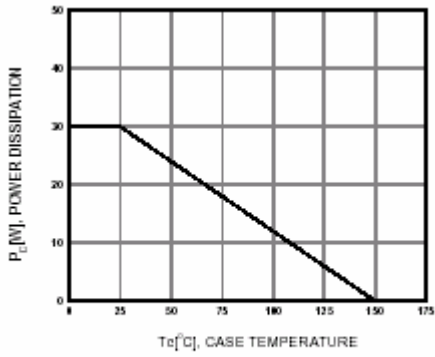


Figure 1. Power Derating