



Shantou Huashan Electronic Devices Co., Ltd.

NPN SILICON TRANSISTOR

**KSH13005F**

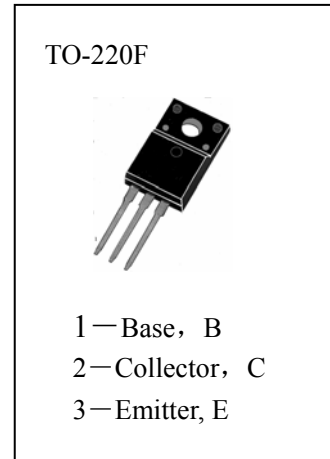
■ HIGH VOLTAGE SWITCH MODE APPLICATION

High Speed Switching

Suitable for Switching Regulator and Motor Control

■ ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

$T_{stg}$	Storage Temperature	-55~150°C
$T_j$	Junction Temperature	150°C
$P_C$	Collector Dissipation ( $T_c=25^\circ\text{C}$ )	30W
$V_{CBO}$	Collector-Base Voltage	700V
$V_{CEO}$	Collector-Emmitter Voltage	400V
$V_{EBO}$	Emmitter-Base Voltage	9V
$I_C$	Collector Current (DC)	4A
$I_{CP}$	Collector Current (Pulse)	8A
$I_B$	Base Current	2A



■ 电参数 ( $T_a=25^\circ\text{C}$ )

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV <sub>CEO</sub>	Collector-Emmitter Sustaining Voltage	400			V	$I_C=10\text{mA}, I_B=0$
I <sub>EBO</sub>	Emmitter-Base Cut-off Current			1	mA	$V_{EB}=9\text{V}, I_C=0$
H <sub>FE</sub>	DC Current Gain	10		40		$V_{CE}=5\text{V}, I_C=1\text{A}$
		8		40		$V_{CE}=5\text{V}, I_C=2\text{A}$
V <sub>CE(sat)</sub>	Collector- Emmitter Saturation Voltage			0.5	V	$I_C=1\text{A}, I_B=0.2\text{A}$
				0.6	V	$I_C=2\text{A}, I_B=0.5\text{A}$
				1	V	$I_C=4\text{A}, I_B=1\text{A}$
V <sub>BE(sat)</sub>	Base- Emmitter Saturation Voltage			1.2	V	$I_C=1\text{A}, I_B=0.2\text{A}$
				1.6	V	$I_C=2\text{A}, I_B=0.5\text{A}$
C <sub>ob</sub>	Output Capacitance		65		pF	$V_{CB}=10\text{V}, f=0.1\text{MHz}$
f <sub>T</sub>	Current Gain-Bandwidth Product	4			MHz	$V_{CE}=10\text{V}, I_C=0.5\text{A}$
t <sub>ON</sub>	Turn On Time			0.8	μs	$V_{CC}=125\text{V}, I_C=2\text{A},$ $I_{B1}=-I_{B2}=0.4\text{A}$ $R_L=125\Omega$
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)**

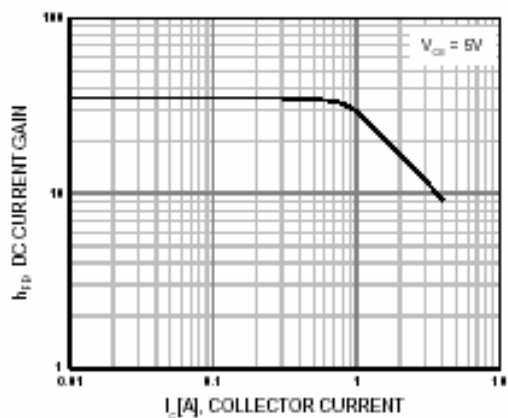
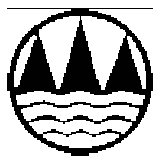


Figure 1. DC current Gain

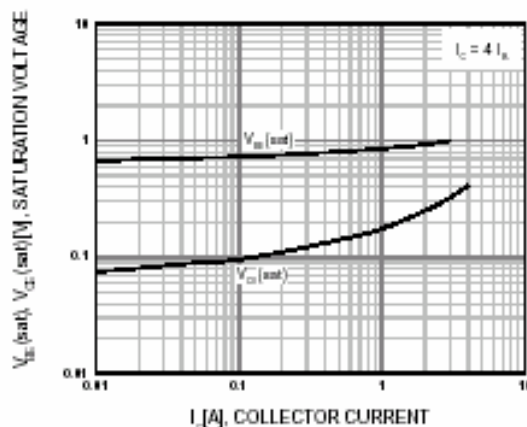


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

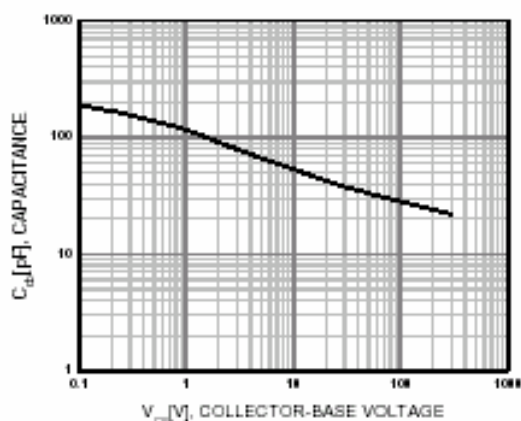


Figure 3. Collector Output Capacitance

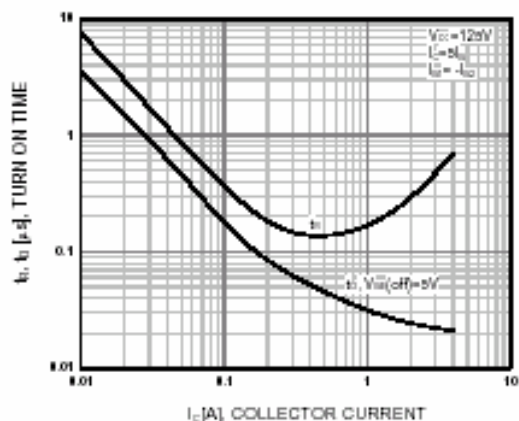


Figure 4. Turn On Time

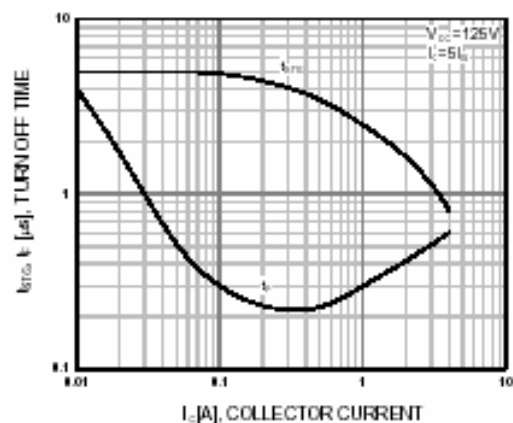


Figure 5. Turn Off Time

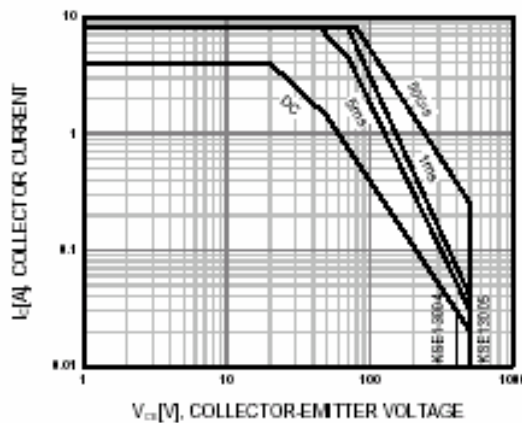
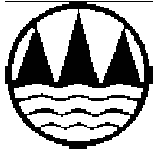


Figure 6. Safe Operating Area



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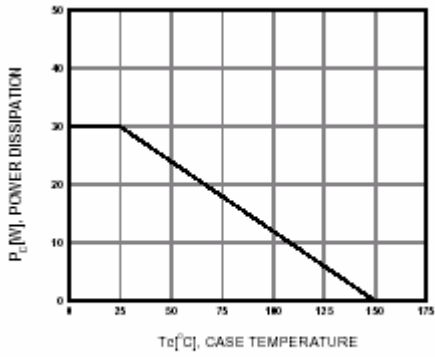


Figure 1. Power Derating