Shantou Huashan Electronic Devices Co.,Ltd.

NPN SILICON TRANSISTOR

KSH13009H

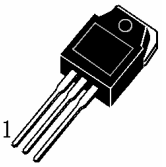
HIGH VOLTAGE SWITCH MODE APPLICATIONS

High Speed Switching
Suitable for Switching Regulator and Montor Control

ABSOLUTE MAXIMUM RATINGS (T_a=25℃)

T_{stg}——Storage Temperature····· -55~150℃
T_j——Junction Temperature····· 150℃
P_C——Collector Dissipation (T_c=25℃) ····· 130W
V_{CBO}——Collector-Base Voltage····· 700V
V_{CEO}——Collector-Emitter Voltage····· 400V
V_{EBO}——Emitter-Base Voltage····· 9V
I_C——Collector Current (DC) ····· 12A
I_B——Base Current·····6A

TO-3P



1—Base，B
2—Collector，C
3—Emitter, E

ELECTRICAL CHARACTERISTICS (T_a=25℃)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV_{CEO}	Collector-Emitter Breakdown Voltage	400			V	I_C=10mA, I_B=0
I_{EBO}	Emitter-Base Cut-off Current			1	mA	V_{EB}=9V, I_C=0
H_{FE} (1)	DC Current Gain	8		40		V_{CE}=5V, I_C=5A
H_{FE} (2)		6		30		V_{CE}=5V, I_C=8A
$V_{CE(sat1)}$	Collector- Emitter Saturation Voltage			1	V	I_C=5A, I_B=1A
$V_{CE(sat2)}$				1.5	V	I_C=8A, I_B=1.6A
$V_{CE(sat3)}$				3	V	I_C=12A, I_B=3A
$V_{BE(sat1)}$	Base-Emitter Saturation Voltage			1.2	V	I_C=5A, I_B=1A
$V_{BE(sat2)}$				1.6	V	I_C=8A, I_B=1.6A
Cob	Output Capacitance		180		pF	V_{CB}=10V,f=0.1MHz
f_T	Current Gain-Bandwidth Product	4			MHz	V_{CE}=10V,I_C=0.5A
t_{ON}	Turn On Time			1.1	μs	V_{CC}=125V, I_C=8A,
t_{STG}	Storage Time			3.0	μs	I_{B1}=1.6A,I_{B2}=-1.6A
t_F	Fall Time			0.7	μs	RL=15.6Ω

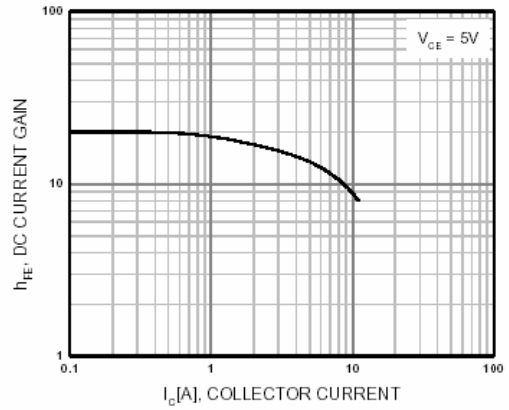


Figure 1. DC current Gain

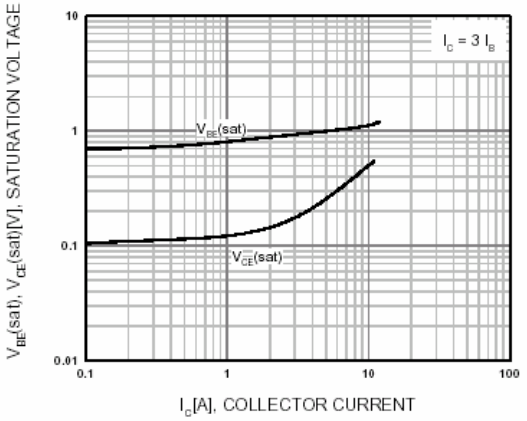


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

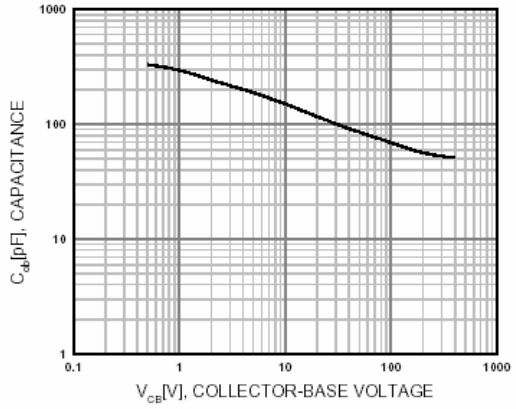


Figure 3. Collector Output Capacitance

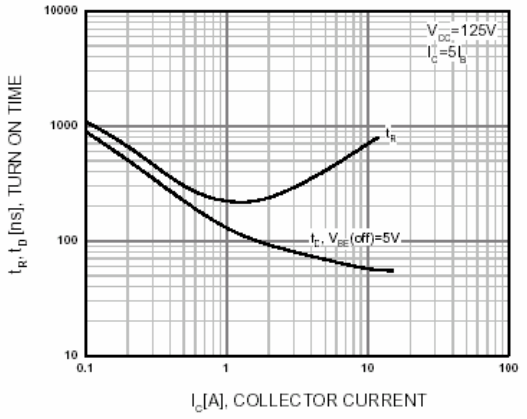


Figure 4. Turn On Time

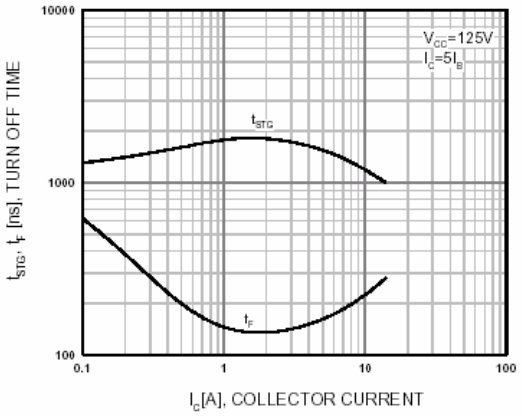


Figure 5. Turn Off Time

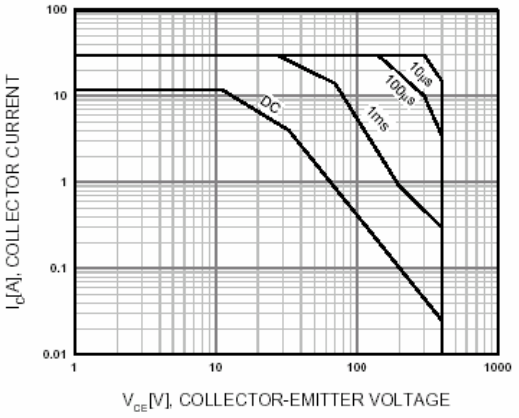


Figure 6. Forward Bias Safe Operating Area

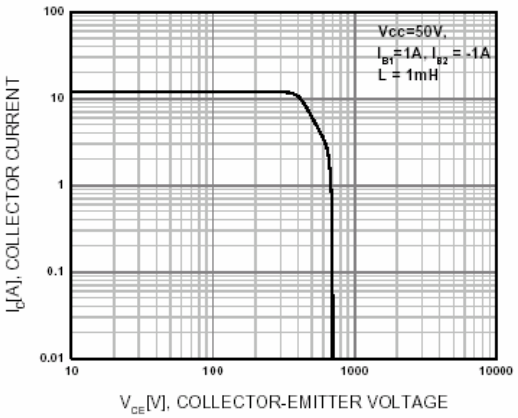


Figure 7. Reverse Bias Safe Operating Area

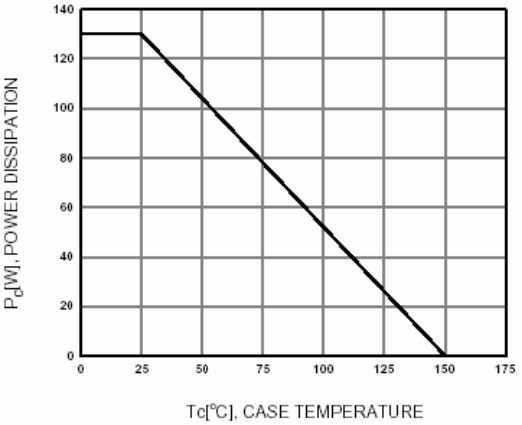


Figure 8. Power Derating