



HE13009

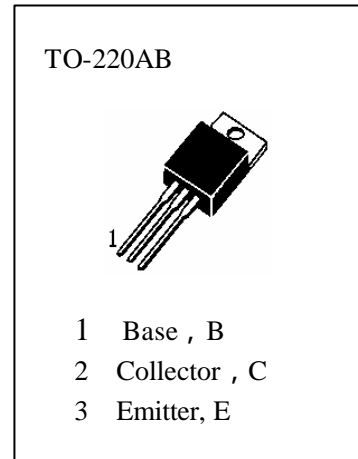
HIGH VOLTAGE SWITCH MODE APPLICATIONS

High Speed Switching

Suitable for Switching Regulator and Motor Control

ABSOLUTE MAXIMUM RATINGS ($T_a=25$)

T_{stg}	Storage Temperature.....	-65~150
T_j	Junction Temperature.....	150
P_C	Collector Dissipation($T_c=25$).....	100W
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



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 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	$I_C=8A, I_B=1.6A$
C_{ob}	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	} $V_{CC}=125V, I_C=8A$ $I_{B1}=-I_{B2}=1.6A$
t_{STG}	Storage Time			3	μS	
t_F	Fall Time			0.7	μS	



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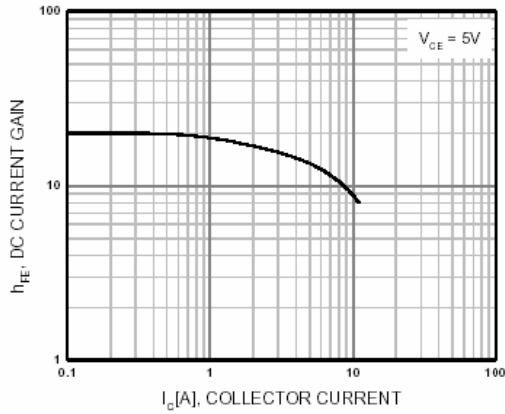


Figure 1. DC current Gain

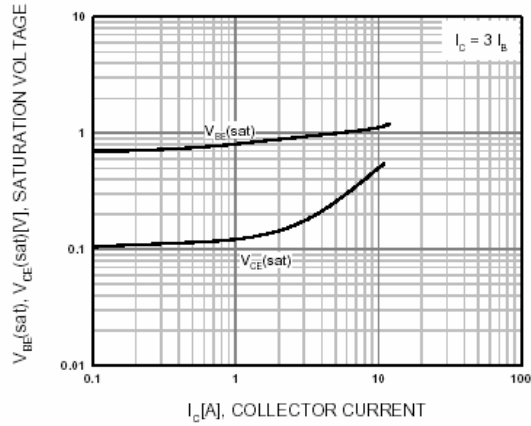


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

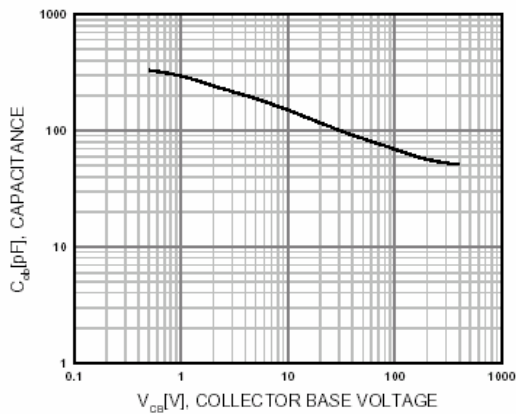


Figure 3. Collector Output Capacitance

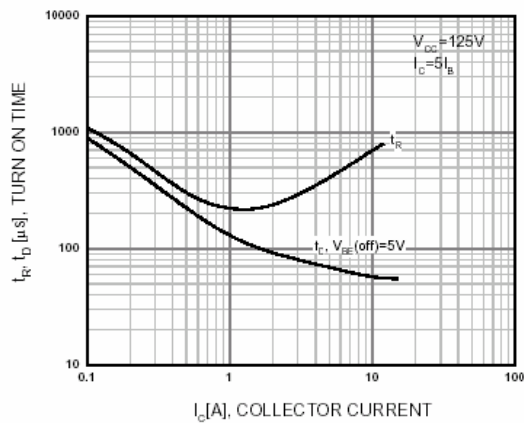


Figure 4. Turn On Time

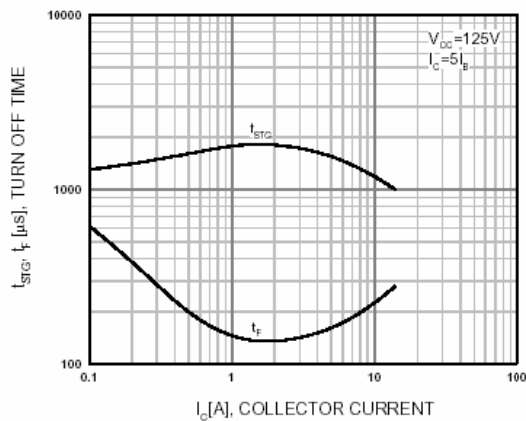


Figure 5. Turn Off Time

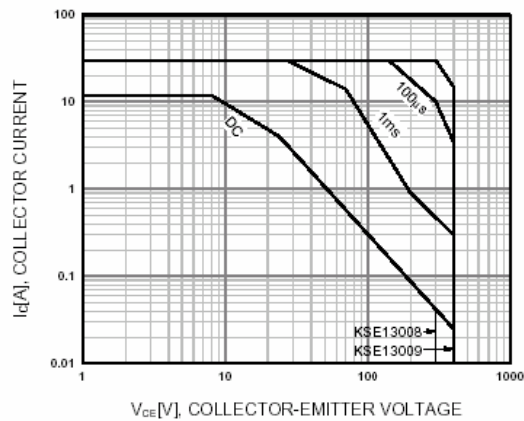


Figure 6. Safe Operating Area



Shantou Huashan Electronic Devices Co.,Ltd.

NPN SILICON TRANSISTOR

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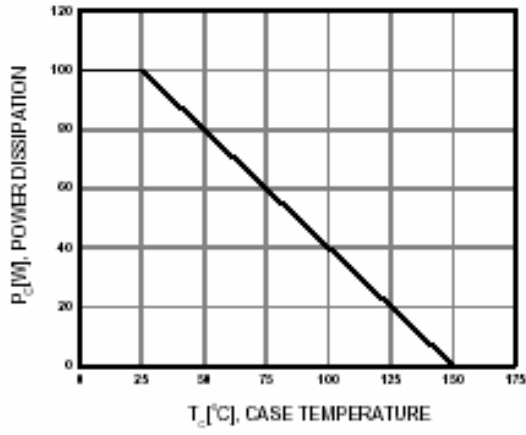


Figure 7. DC current Gain