Shantou Huashan Electronic Devices Co.,Ltd.

NPN SILICON TRANSISTOR

HC5039

APPLICATIONS

high Voltage power switch switching Application.

ABSOLUTE MAXIMUM RATINGS (T_a=25℃)

T_{stg}——Storage Temperature····· -65~150℃

T_j——Junction Temperature·····150℃

P_C——Collector Dissipation (Tc=25℃) ·····70W

V_{CBO}——Collector-Base Voltage·····800V

V_{CEO}——Collector-Emitter Voltage·····400V

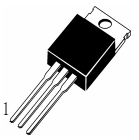
V_{EBO}——Emitter-Base Voltage·····7V

I_C——Collector Current (DC) ·····5A

I_{CP}——Collector Current (Pulse)·····10A

Ib——Base Current·····3A

TO-220



1—Base, B
2—Collector, C
3—Emitter, E

ELECTRICAL CHARACTERISTICS (T_a=25℃)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV_{CBO}	Collector-Base Breakdown Voltage	800			V	I_C=1mA, I_E=0
BV_{CEO}	Collector-Emitter Breakdown Voltage	400			V	I_C=5mA, I_B=0
BV_{EBO}	Emitter-Base Breakdown Voltage	7			V	I_E=1mA, I_C=0
I_{CBO}	Collector Cut-off Current			10	μA	V_{CB}=500V, I_E=0
I_{EBO}	Emitter Cut-off Current			10	μA	V_{EB}=7V, I_C=0
H_{FE}	*DC Current Gain	10				V_{CE}=5V, I_C=0.3A
$V_{CE(sat)}$	*Collector- Emitter Saturation Voltage			1.5	V	I_C=2.5A, I_B=0.5A
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage			2.0	V	I_C=2.5A, I_B=0.5A
f_T	Current Gain-Bandwidth Product		10		MHz	V_{CE}=5V, I_C=0.1A
Cob	Output Capacitance			40	pF	V_{CB}=10V, f=1MHz
t_{ON}	Turn On Time			1	μS	Vcc=150V, Ic=2.5A, Ib1=-Ib2=0.5A, R_L=60Ω
t_{STG}	Storage Time			3	μS	
t_F	Fall Time			0.8	μS	

*Pulse Test : PW≤300μs, Duty cycle≤2% Pulse

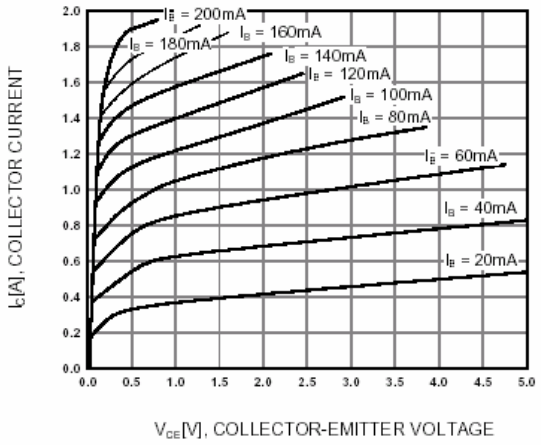


Figure 1. Static Characteristic

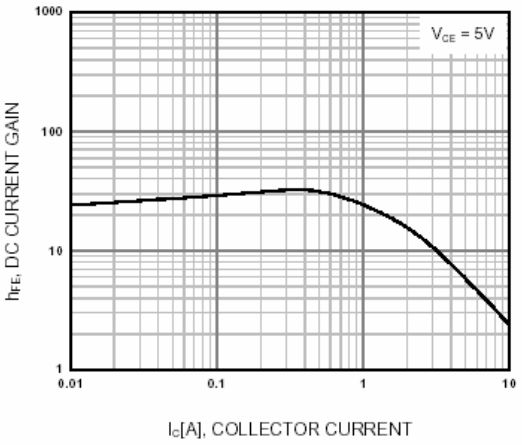


Figure 2. DC current Gain

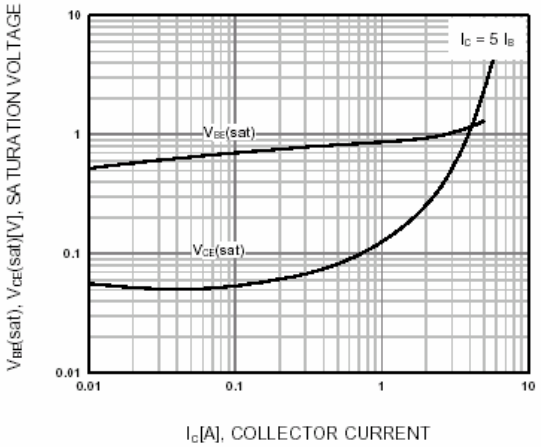


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

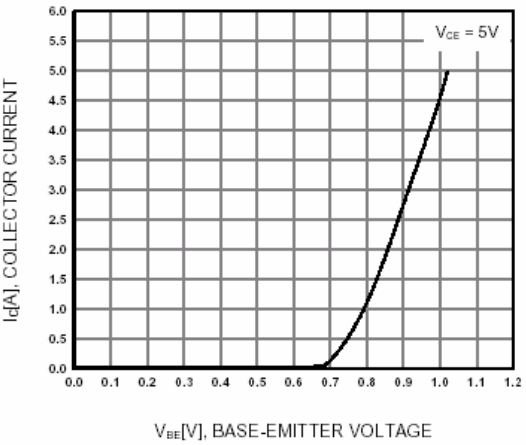


Figure 4. Base-Emitte On Voltage

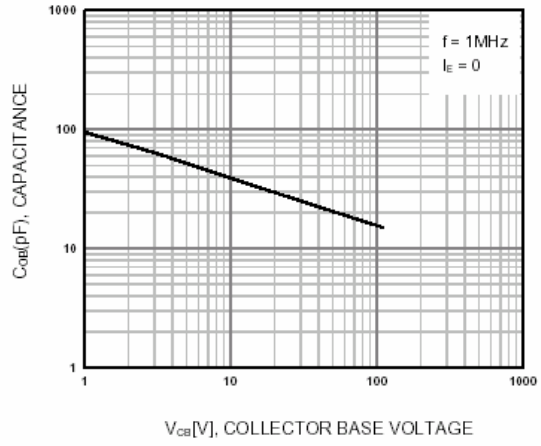


Figure 5. Collector Output Capacitance

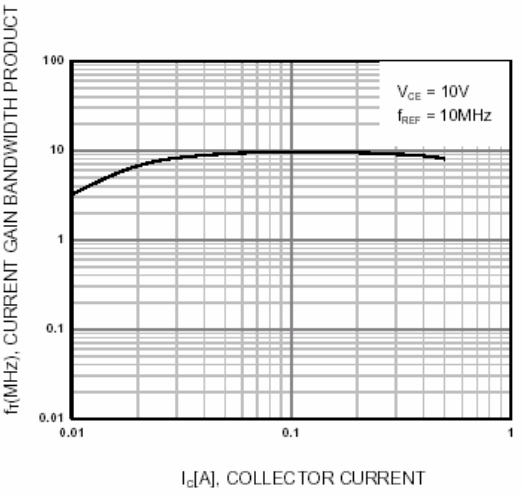


Figure 6. Current Gain Bandwidth Product

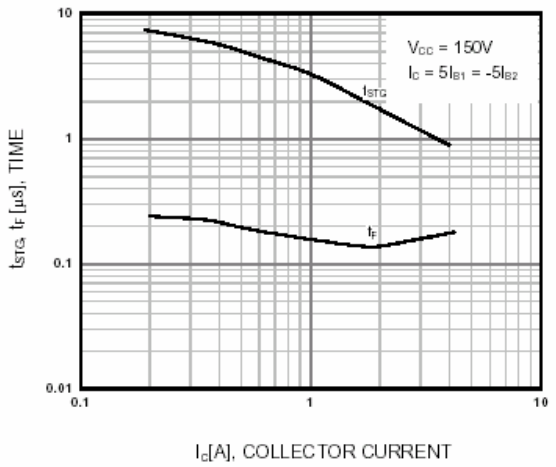


Figure 7. Switching Time

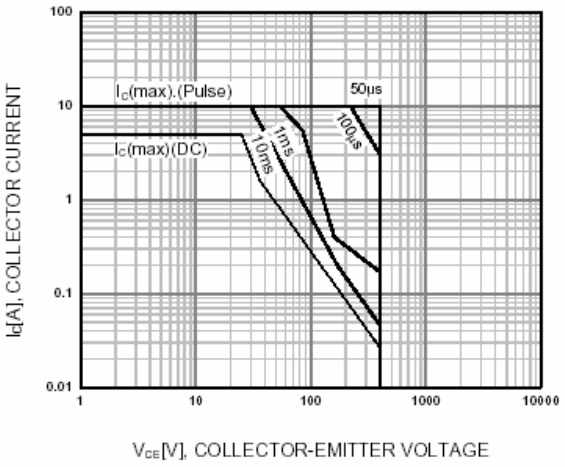


Figure 8. Safe Operating Area

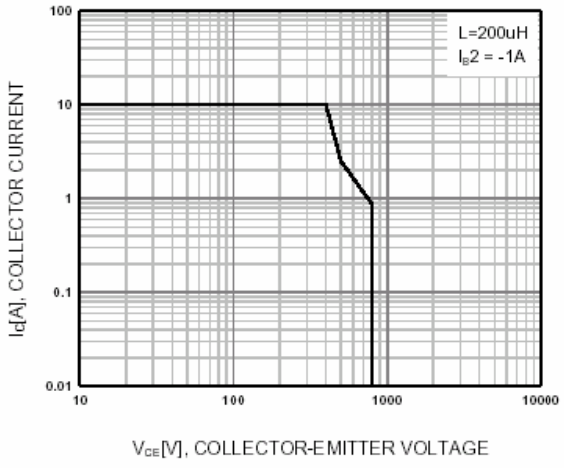


Figure 9. Reverse Bias Safe Operaing Area

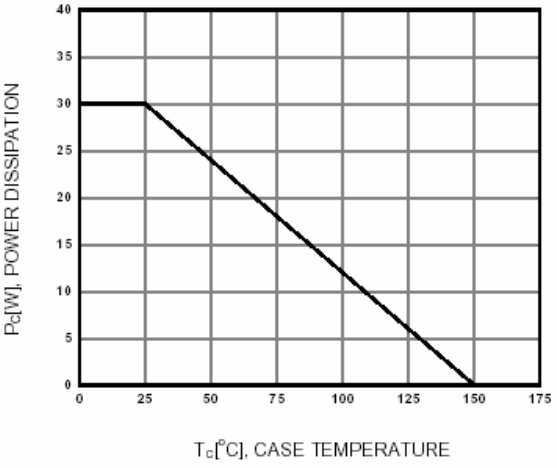


Figure 10. Power Derating