Shantou Huashan Electronic Devices Co.,Ltd.

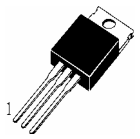
NPN SILICON TRANSISTOR

HP31

APPLICATIONS

Medium Power Linear switching Applications.

TO-220



1－Base，B
2－Collector，C
3－Emitter，E

ABSOLUTE MAXIMUM RATINGS（T_a=25℃）

T_{stg}——Storage Temperature…… -55~150℃

T_j——Junction Temperature……150℃

P_C——Collector Dissipation（Tc=25℃）……40W

P_C——Collector Dissipation（Ta=25℃）……2W

V_{CBO}——Collector-Base Voltage……40V

V_{CEO}——Collector-Emitter Voltage……40V

V_{EBO}——Emitter-Base Voltage……5V

I_C——Collector Current（DC）……3A

I_C——Collector Current（Pulse）……5A

Ib——Base Current……1A

ELECTRICAL CHARACTERISTICS（T_a=25℃）

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV_{CEO}	Collector-Emitter Breakdown Voltage	40			V	I_C=30mA, I_B=0
H_{FE}（1）	*DC Current Gain	25				V_{CE}=4V, I_C=1A
H_{FE}（2）	*DC Current Gain	10		50		V_{CE}=4V, I_C=3A
$V_{CE(sat)}$	*Collector- Emitter Saturation Voltage			1.2	V	I_C=3A, I_B=375mA
$V_{BE(ON)}$	*Base-Emitter On Voltage			1.8	V	V_{CE}=4V, I_C=3A
I_{CEO}	Collector Cut-off Current			0.3	mA	V_{CB}=30V, I_B=0
I_{CES}	Collector Cut-off Current			200	μA	V_{CE}=40V, V_{EB}=0
I_{EBO}	Emitter Cut-off Current			1	mA	V_{EB}=5V, I_C=0
f_T	Current Gain-Bandwidth Product	3.0			MHz	V_{CE}=10V, I_C=500mA，f=1MHz

*Pulse Test：PW≤300μs，Duty cycle≤2%

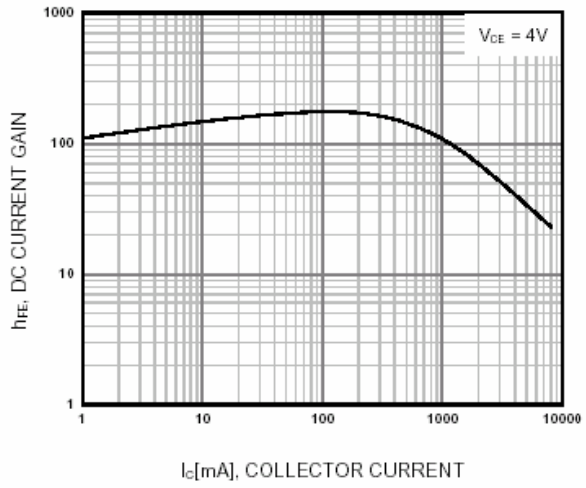


Figure 1. DC current Gain

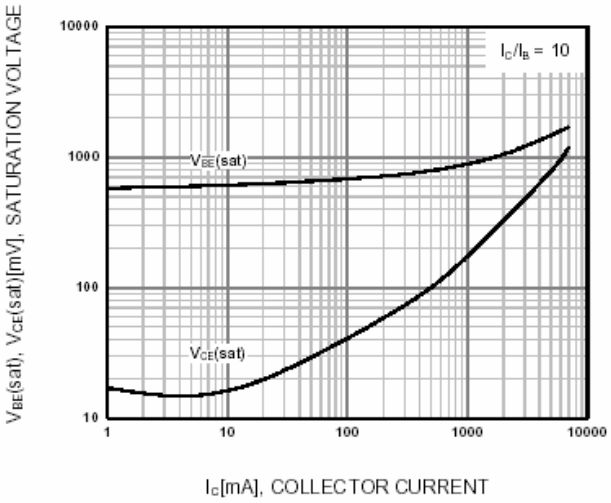


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

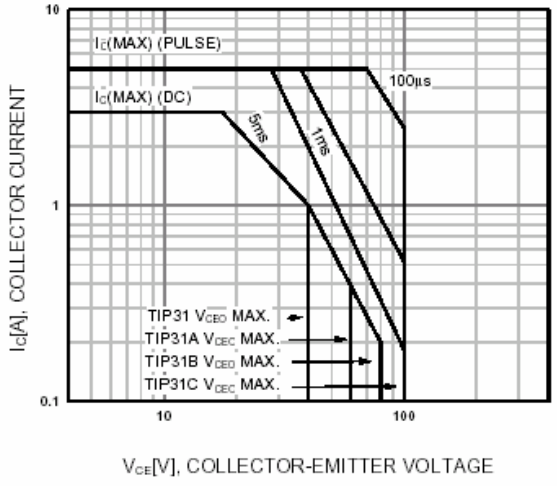


Figure 3. Safe Operating Area

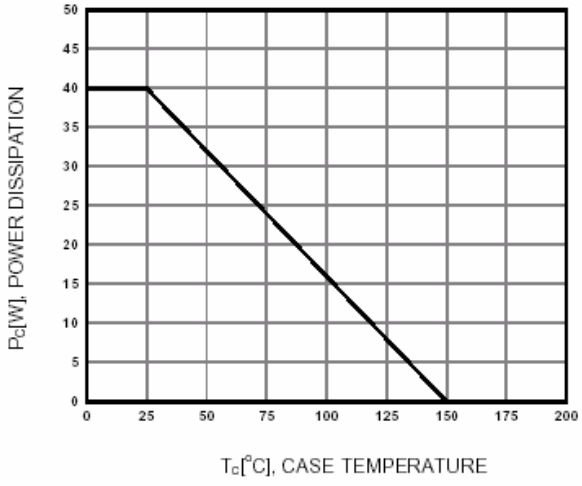


Figure 4. Power Derating