



HEP31 Series

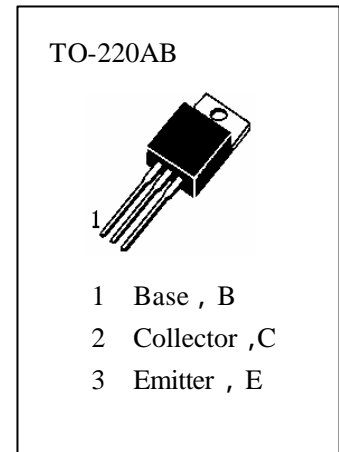
(HEP31/HEP31A/HEP31B/HEP31C)

APPLICATIONS

Medium Power Linear switching Applications.

ABSOLUTE MAXIMUM RATINGS ($T_a=25$)

T_{stg}	—Storage Temperature.....	-55~150
T_j	—Junction Temperature.....	150
P_C	—Collector Dissipation($T_c=25$).....	40W
P_C	—Collector Dissipation ($T_a=25$)	2W
V_{CBO}	—Collector-Base Voltage、	
V_{CEO}	—Collector-Emitter Voltage	
	HEP31.....	40V
	HEP31A.....	60V
	HEP31B.....	80V
	HEP31C.....	100V
V_{EBO}	—Emitter-Base Voltage.....	5 V
I_C	—Collector Current (DC)	3A
I_C	—Collector Current (Pulse)	5A
I_b	—Base Current.....	1A



ELECTRICAL CHARACTERISTICS ($T_a=25$)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV _{CEO}	Collector-Emitter Breakdown Voltage HEP31	40			V	$I_C=30mA, I_B=0$
	HEP31A	60			V	
	HEP31B	80			V	
	HEP31C	100			V	
I _{CEO}	Collector Cut-off Current HEP31/ HEP31A			0.3	mA	$V_{CB}=30V, I_B=0$
	HEP31B/ HEP31C			0.3	mA	$V_{CB}=60V, I_B=0$
I _{CES}	Collector Cut-off Current HEP31			200	μA	$V_{CE}=40V, V_{EB}=0$
	HEP31A			200	μA	$V_{CE}=60V, V_{EB}=0$
	HEP31B			200	μA	$V_{CE}=80V, V_{EB}=0$
	HEP31C			200	μA	$V_{CE}=100V, V_{EB}=0$
H _{FE} (1)	*DC Current Gain	25				$V_{CE}=4V, I_C=1A$
H _{FE} (2)		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 _{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 300 μs , Duty cycle 2%



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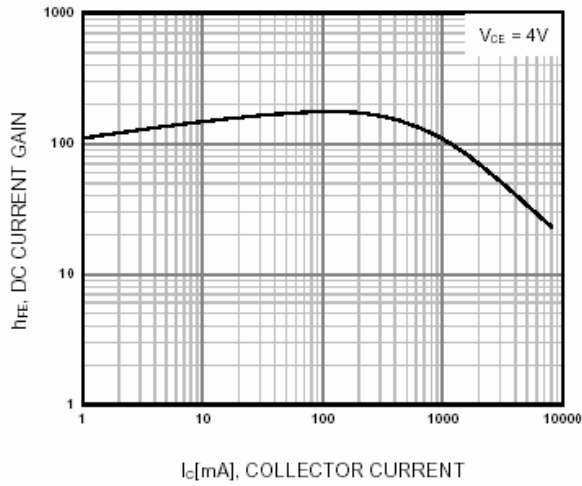


Figure 1. DC current Gain

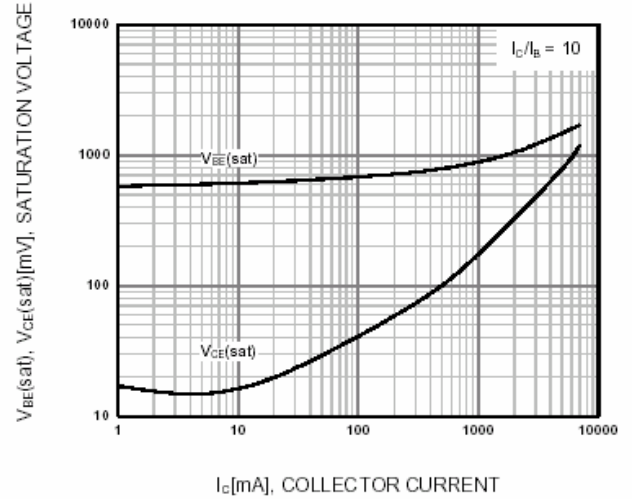


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

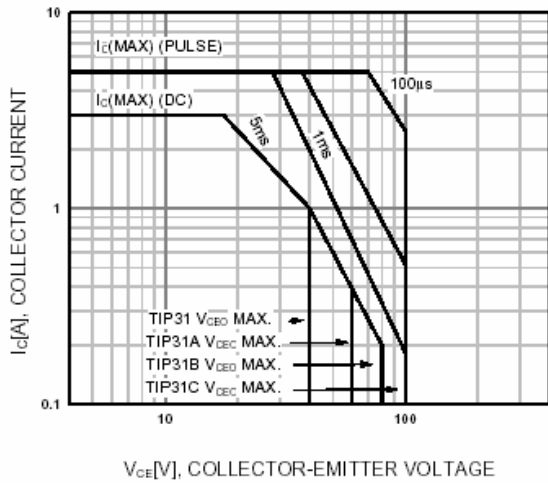


Figure 3. Safe Operating Area

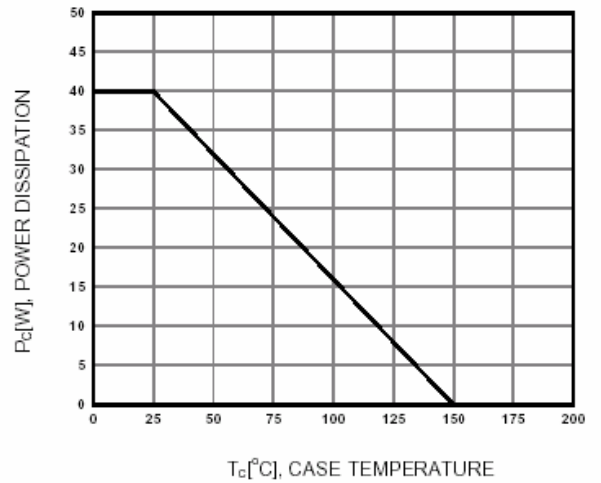


Figure 4. Power Derating