



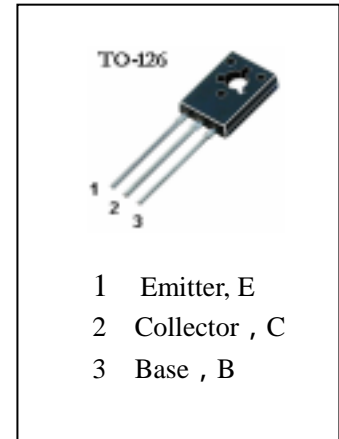
HSBD139

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 ($T_c=25$)	12.5W
P_C —Collector Dissipation ($T_A=25$)	1.25W
V_{CBO} —Collector-Base Voltage.....	80V
V_{CEO} —Collector-Emitter Voltage.....	80V
V_{EBO} —Emitter-Base Voltage.....	5V
I_C —Collector Current(Pulse).....	3A
I_C —Collector Current (DC)	1.5A
I_B —Base Current.....	0.5A



ELECTRICAL CHARACTERISTICS ($T_a=25$)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
I_{CBO}	Collector Cut-off Current			0.1	μA	$V_{CB}=30V, I_E=0$
I_{EBO}	Emitter-Base Cut-off Current			10	μA	$V_{EB}=5V, I_C=0$
$h_{FE(1)}$	DC Current Gain	25				$V_{CE}=2V, I_C=5mA$
$h_{FE(2)}$		25				$V_{CE}=2V, I_C=0.5A$
$h_{FE(3)}$		40		250		$V_{CE}=2V, I_C=150mA$
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage			0.5	V	$I_C=500mA, I_B=50mA$
$V_{BE(ON)}$	Base-Emitter On Voltage			1.0	V	$I_C=0.5A, V_{CE}=2V$
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	80				$I_C=30mA, I_B=0$

$h_{FE(3)}$ Classification

Classification	6	10	16
$h_{FE(3)}$	40~100	63~160	100~250



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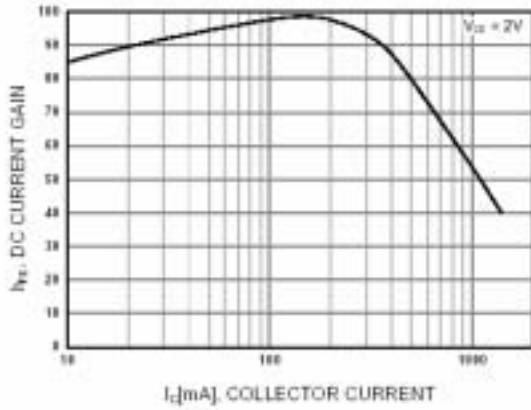


Figure 1. DC current Gain

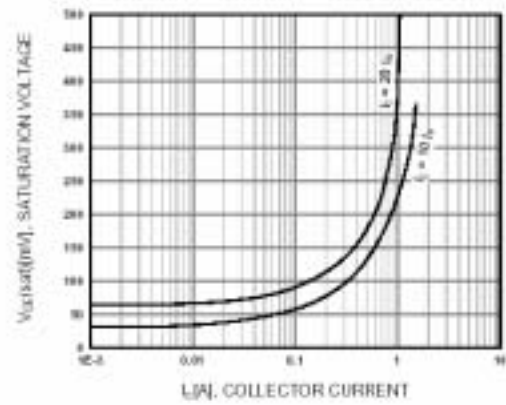


Figure 2. Collector-Emitter Saturation Voltage

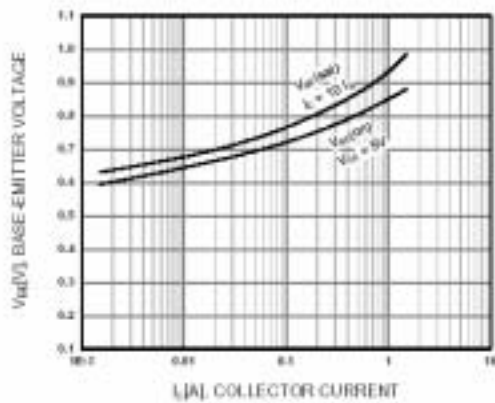


Figure 3. Base-Emitter Voltage

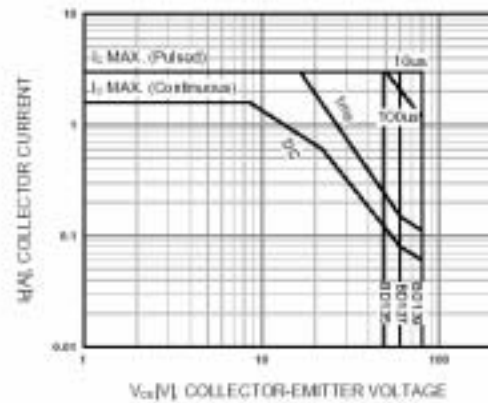


Figure 4. Safe Operating Area

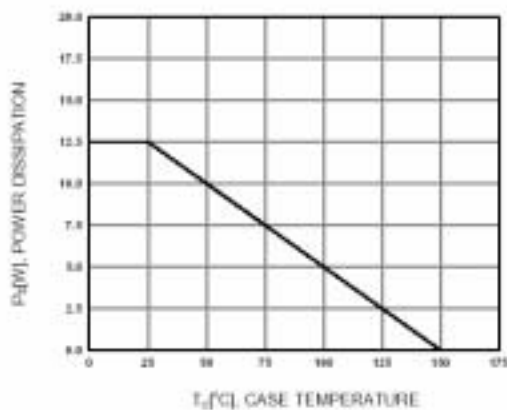


Figure 5. Power Derating