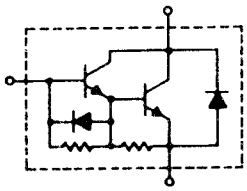
MOSPEC

FAST SWITCHING DARLINGTON TRANSISTOR

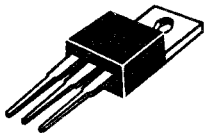
They are high voltage,high current devices for fast switching applications.

FEATURES:
* Collector-Emitter Sustaining Voltage -
  $V_{CEO(SUS)}$ = 150 V (Min.) - BU807
  = 200 V (Min.) - BU806
* Low Collector-Emitter Saturation Voltage -
  $V_{CE(sat)}$ = 1.5V (Max.) @ I_C = 5.0 A, I_B = 50 mA



NPN
BU806
BU807

8.0 AMPERE
DARLINGTON
POWER TRANSISTORS
150-200 VOLTS
60 WATTS



TO-220

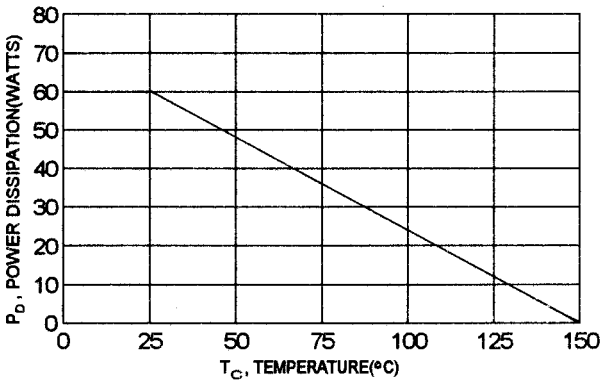
MAXIMUM RATINGS

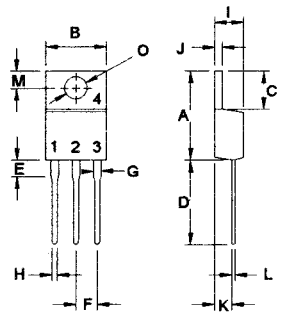
Characteristic	Symbol	BU806	BU807	Unit
Collector-Emitter Voltage	V_{CEO}	200	150	V
Collector-Base Voltage	V_{CBO}	400	330	V
Emitter-Base Voltage	V_{EBO}	6.0		V
Collector Current - Continuous - Peak	I_C	8.0 15		A
Base Current - Continuous	I_B	2.0		A
Total Power Dissipation @T_C=25°C Derate above 25°C	P_D	60 0.48		W W/°C
Operating and Storage Junction Temperature Range	T_J , T_{STG}	- 65 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	2.08	°C/W

FIGURE -1 POWER DERATING





PIN 1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.31
B	9.78	10.42
C	5.01	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	3.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

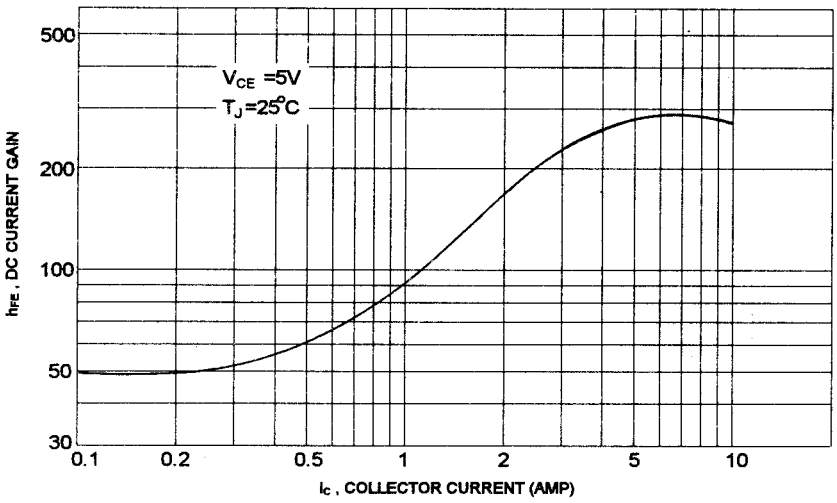
Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1) (I_C = 100 mA, I_B = 0)	BU807 BU806	$V_{CEO(SUS)}$	 150 200		V
Collector Cutoff Current (V_{CE} = 330 V, V_{BE}= 0) (V_{CE} = 400 V, V_{BE} = 0)	 BU807 BU806	I_{CES}		 0.1 0.1	mA
Emitter Cutoff Current (V_{EB}= 6.0 V , I_C = 0)		I_{EBO}		 3.0	mA
ON CHARACTERISTICS (1)					
Collector - Emitter Saturation Voltage (I_C =5.0 A, I_B = 50 mA)		$V_{CE(sat)}$		 1.5	V
Base - Emitter Saturation Voltage (I_C =5.0 A, I_B = 50 mA)		$V_{BE(sat)}$		 2.4	V
Diode Forward Voltage (I_F =4.0 A)		V_F		 2.0	V

SWITCHING CHARACTERISTICS

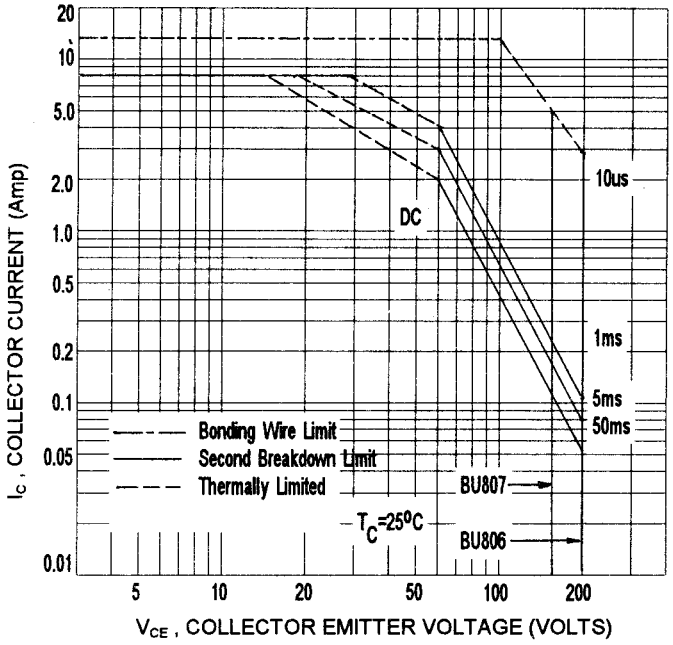
Turn On Time	V_{CC}= 100V, I_C= 5.0A I_{B1}= 50mA, I_{B2}= -500mA V_{CC}=100V	t_{on}	0.35(typ)		us
Storage Time		t_s	0.55(typ)		us
Fall Time		t_f	0.20(typ)		us

(1) Pulse Test: Pulse width ≦ 300 us , Duty Cycle ≦ 2.0%

DC CURRENT GAIN



ACTIVE-REGION SAFE OPERATING AREA (SOA)



There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than curves indicate.

The data of SOA curve is base on $T_{J(PK)}$=150 °C;T_C is variable depending on conditions. second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(PK)}$≤150°C,At high case temperatures, thermal limita - tion will reduce the power that can be handled to values less than the limitations imposed by second breakdown.