

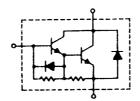
#### **FAST SWITCHING DARLINGTON TRANSISTOR**

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

### **FEATURES:**

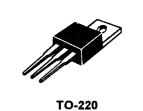
\* Collector-Emitter Sustaining Voltage -V<sub>ceo(sus)</sub> = 150 V (Min.) - BU807 = 200 V (Min.) - BU806 \* Low Collector-Emitter Saturation Voltage -

V<sub>CE(sat)</sub> = 1.5V (Max.) @ I<sub>C</sub> = 5.0 A, I<sub>B</sub> = 50 mA

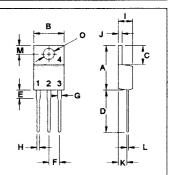


# NPN **BU806 BU807**

8.0 AMPERE **DARLINGTON POWER TRANSISTORS** 150-200 VOLTS **60 WATTS** 







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

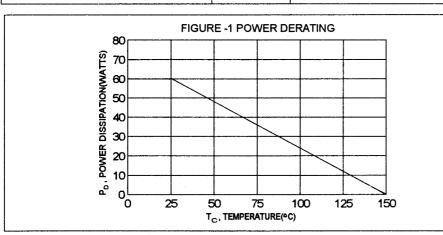
DIM	MILLIMETERS		
Dila	MIN	MAX	
Α	14.68	15.31	
В	9.78	10.42	
С	5.01	6.52	
D	13.06	14.62	
E	3.57	4.07	
F	2.42	3.66	
G	1.12	1.36	
Н	0.72	0.96	
1 1	4.22	4.98	
J	1.14	1.38	
K	2.20	2.97	
L	0.33	0.55	
М	2.48	2.98	
0	3.70	3.90	

## **MAXIMUM RATINGS**

Characteristic	Symbol	BU806	BU807	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	200 150		V
Collector-Base Voltage	V <sub>CBO</sub>	400 330		V
Emitter-Base Voltage	V <sub>EBO</sub>	6.0		٧
Collector Current - Continuous - Peak	l <sub>C</sub>	8.0 15		А
Base Current - Continuous	l <sub>B</sub>	2.0		Α
Total Power Dissipation @T <sub>c</sub> =25°C Derate above 25°C	P <sub>D</sub>	60 0.48		W/°C
Operating and Storage Junction Temperature Range	T <sub>J</sub> ,T <sub>STG</sub>	- 65 to +150		°C

#### THERMAL CHARACTERISTICS

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



# **ELECTRICAL CHARACTERISTICS** ( $T_c = 25^{\circ}C$ unless otherwise noted )

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1) ( I <sub>C</sub> = 100 mA, I <sub>B</sub> = 0)	BU807 BU806	V <sub>CEO(SUS)</sub>	150 200		V
Collector Cutoff Current ( V <sub>CE</sub> = 330 V, V <sub>BE</sub> = 0 ) ( V <sub>CE</sub> = 400 V, V <sub>BE</sub> = 0 )	BU807 BU806	I <sub>CES</sub>		0.1 0.1	mA
Emitter Cutoff Current (V <sub>EB</sub> = 6.0 V,I <sub>C</sub> = 0)		l <sub>EBO</sub>		3.0	mA

# **ON CHARACTERISTICS (1)**

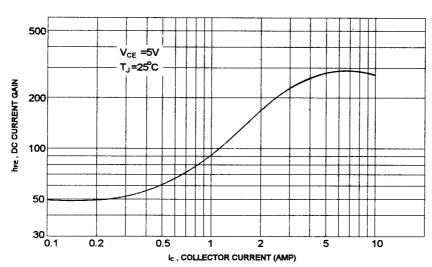
Collector - Emitter Saturation Voltage (I <sub>C</sub> =5.0 A, I <sub>B</sub> = 50 mA)	V <sub>CE(sat)</sub>	1.5	V
Base - Emitter Saturation Voltage (I <sub>C</sub> =5.0 A, I <sub>B</sub> = 50 mA)	V <sub>BE(sat)</sub>	2.4	V
Diode Forward Voltage (I <sub>F</sub> =4.0 A)	V <sub>F</sub>	2.0	V

### **SWITCHING CHARACTERISTICS**

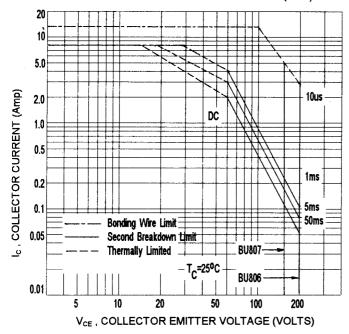
	V <sub>cc</sub> = 100V,I <sub>c</sub> = 5.0A	t on	0.35(typ)	us
Storage Time	I <sub>B1</sub> = 50mA,I <sub>B2</sub> = -500mA	ts	0.55(typ)	us
Fall Time	V <sub>cc</sub> =100V	t <sub>f</sub>	0.20(typ)	us

<sup>(1)</sup> Pulse Test: Pulse width  $\leq$  300 us , Duty Cycle  $\leq$  2.0%





# 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  $I_{\text{c}}\text{-V}_{\text{CE}}$  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 limitation will reduce the power that can be handled to values less than the limitations imposed by second breakdown.