BU806

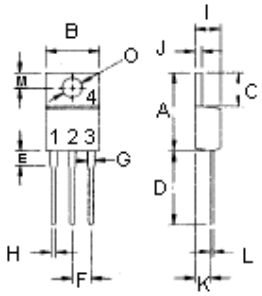
Darlington Transistors

multicomp

Features:

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

- Collector-emitter sustaining voltage-$V_{CEO\ (sus)}$ = 200V (Minimum) - BU806
- Low Collector-emitter Saturation Voltage - $V_{CE\ (SAT)}$ = 1.5V (Maximum) at I_C = 5.0A, I_B = 50mA.



Pin 1. Base
2. Collector
3. Emitter
4. Collector (Case)

Dimension	Minimum	Maximum
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

Dimensions : Millimeters

NPN
BU806

8.0 Ampere
Darlington
Complementary Silicon
Power Transistors
200 Volts
60 Watts

TO-220

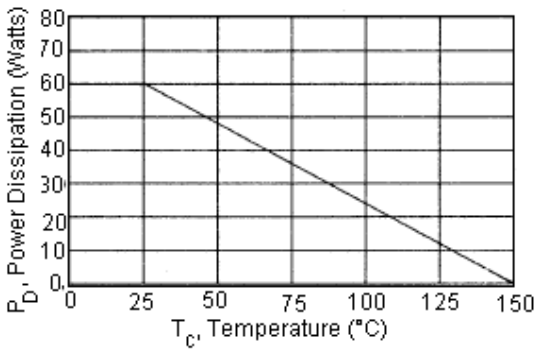
Maximum Ratings

Characteristic	Symbol	BU806	Unit
Collector-Emitter Voltage	V_{CEO}	200	V
Collector-Base Voltage	V_{CBO}	400	
Emitter-Base Voltage	V_{EBO}	6.0	
Collector Current-Continuous Peak	I_C I_{CM}	8.0 15	A
Base Current-Continuous	I_B	2.0	A
Total Power Dissipation at 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

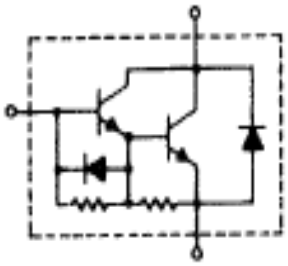
Thermal Characteristics

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

Power Derating



Schematic Diagram



Electrical Characteristics (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Minimum	Maximum	Unit
OFF Characteristics					
Collector-Emitter Sustaining Voltage (1) (I_C = 100mA, I_B = 0)		$V_{CEO\ (SUS)}$	200	-	V
Collector Cut off Current (V_{CE} = 400V, V_{BE} = 0)		I_{CES}	-	0.1	mA
Emitter Cut off Current (V_{EB} =6.0V, I_C = 0)		I_{EBO}	-	3.0	mA
ON Characteristics (1)					
Collector-Emitter Saturation Voltage (I_C = 5.0A, I_B = 50mA)		$V_{CE\ (sat)}$	-	1.5	V
Base-Emitter Saturation Voltage (I_C = 5.0A, I_B = 50mA)		$V_{BE\ (sat)}$	-	2.4	V
Diode Forward Voltage (I_C = 4.0A)		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 (Typical)		µs
Storage Time		t_s	0.55 (Typical)		µs
Fall Time		t_f	0.20 (Typical)		µs

(1) Pulse Test: Pulse Width ≤300µs, Duty Cycle ≤ 2.0%.

DC Current Gain

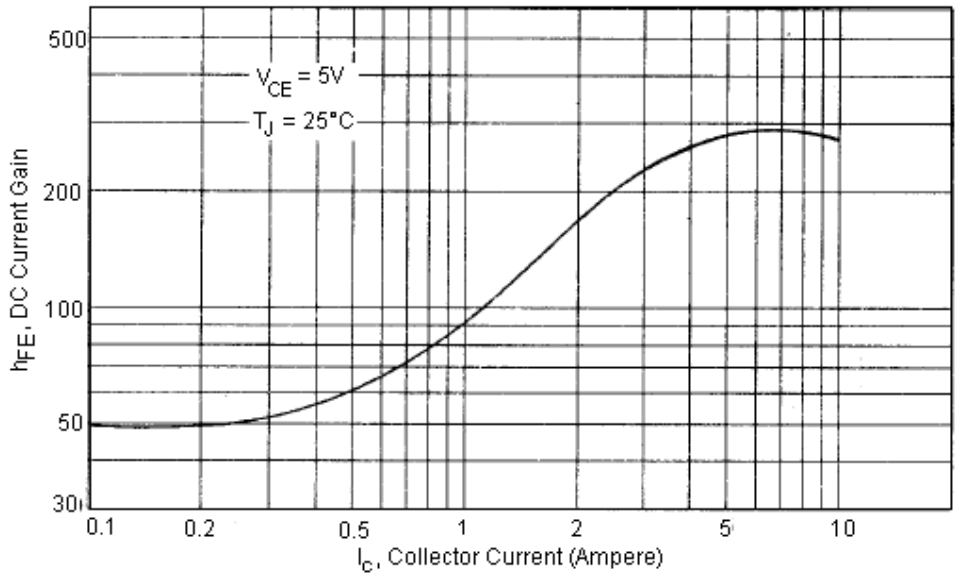
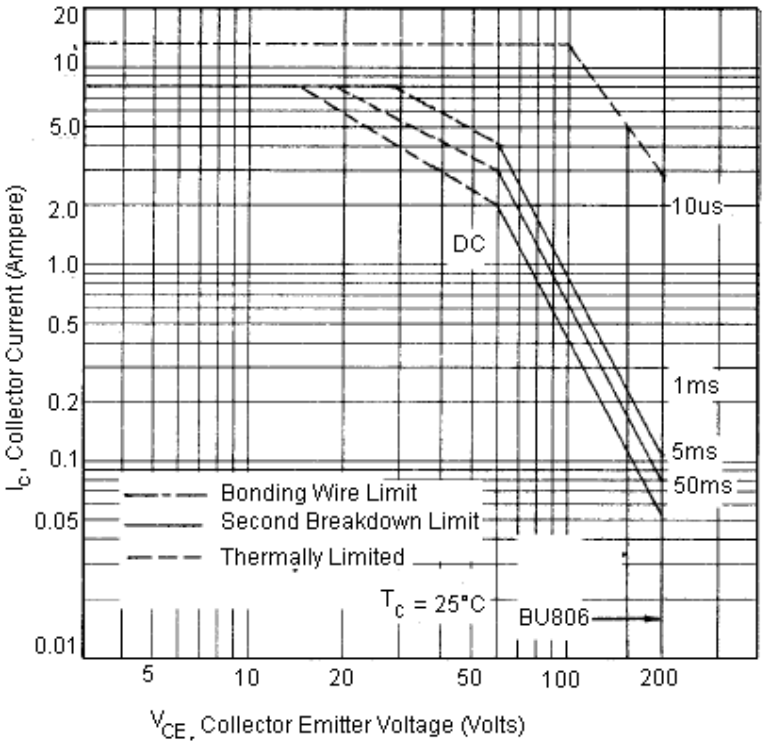


Figure 3 Active Region Safe Operating Area



There are two limitations 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 based 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)} \leq$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.

Specifications

$I_{C\,(av)}$ maximum (A)	V_{CEO} maximum V	h_{FE} minimum at I_c = 4A	P_{tot} at 25°C (W)	Package	Type	Part Number
8	200	375	60	TO-220	NPN	BU806

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