

SWITCHMODE SERIES NPN SILICON POWER DARLINGTON TRANSISTOR

The BU826 darlington transistors is designed for high-voltage, high-speed, power switching in inductive circuits where fall time is critical. They are particularly suited for line operated switchmode applications such as:

FEATURES:

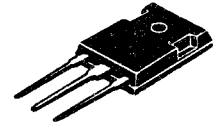
- *Continuous Collector Current - $I_C = 6$ A
- *Switching Regulators
- *Inverters
- *Solenoid and Relay Drivers

**NPN
BU826**

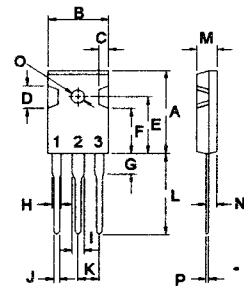
**6 AMPERE
POWER DARLINGTON
TRANSISTORS
375 VOLTS
125 WATTS**

MAXIMUM RATINGS

Characteristic	Symbol	BU826	Unit
Collector-Emitter Voltage ($V_{BE} = 0$)	V_{CES}	800	V
Collector-Emitter Voltage	V_{CEO}	375	V
Emitter-Base Voltage	V_{EBO}	8	V
Collector Current-Continuous -Peak	I_C I_{CM}	6 8	A
Base current	I_B	0.5	A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	125 1.0	W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$



TO-247(3P)



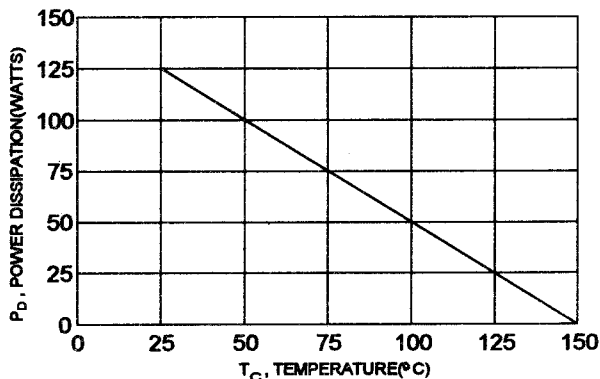
PIN 1.BASE
2.COLLECTOR
3.EMITTER

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.0	$^\circ\text{C/W}$

DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70

FIGURE -1 POWER DERATING



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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector - Emitter Sustaining Voltage ($I_C = 100\text{ mA}$, $I_B = 0$, $L=25\text{ mH}$, $V_{\text{clamp}} = \text{Rate } V_{\text{CEO}}$)	$V_{\text{CEO(sus)}}$	375		V
Collector Cutoff Current ($V_{\text{CE}} = \text{Rated } V_{\text{CES}}$, $R_{\text{BE}}=0$) ($V_{\text{CE}} = \text{Rated } V_{\text{CES}}$, $R_{\text{BE}}=0$, $T_J=125^\circ\text{C}$)	I_{CES}		1.0 2.0	mA
Emitter Cutoff Current ($V_{\text{EB}} = 8.0\text{ V}$, $I_C = 0$)	I_{EBO}		150	mA

ON CHARACTERISTICS (1)

Collector - Emitter Saturation Voltage ($I_C = 2.5\text{ A}$, $I_B = 55\text{ mA}$) ($I_C = 4.0\text{ A}$, $I_B = 200\text{ mA}$)	$V_{\text{CE(sat)}}$		2.0 2.5	V
Base - Emitter Saturation Voltage ($I_C = 2.5\text{ A}$, $I_B = 55\text{ mA}$)	$V_{\text{BE(sat)}}$		2.2	V

SWITCHING CHARACTERISTICS

Turn-on Time	$V_{\text{CC}} = 250\text{ V}$, $I_C = 2.5\text{ A}$ $I_{\text{Bon}} = 55\text{ mA}$, $I_{\text{B(off)}} = -1.0\text{ A}$ $t_p = 20\text{ us}$, Duty Cycle $\leq 1\%$	t_d	1.6	us
Storage Time		t_s	3.1	us
Fall Time		t_f	1.2	us

(1) Pulse Test: Pulse width = 300 us , Duty Cycle $\leq 2.0\%$