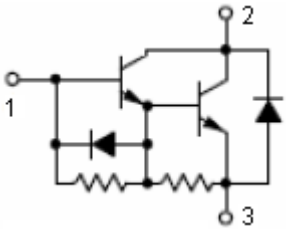
Darlington Power Transistor

Features:

- Silicon NPN
- High voltage : V_{CEV} = 400 V (Minimum)
- Low saturation voltage : $V_{CE(sat)}$ = 1.5 V (Maximum) at I_C = 5 A

Application:

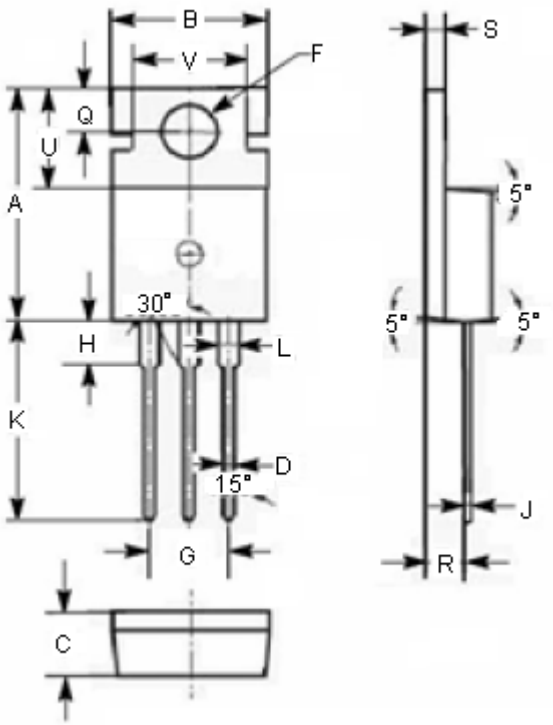
Designed for use in horizontal deflection circuits in TV's and CRT's



PIN

1. Base
2. Collector
3. Emitter

TO-220C



Dimension	mm	
	Minimum	Maximum
A	15.7	15.9
B	9.9	10.1
C	4.2	4.4
D	0.7	0.9
F	3.4	3.6
G	4.98	5.18
H	2.7	2.9
J	0.44	0.46
K	13.2	13.4
L	1.1	1.3
Q	2.7	2.9
R	2.5	2.7
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

Dimensions : Millimetres

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Absolute Maximum Ratings (T_a = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - base voltage	400	V
V_{CEO}	Collector - emitter voltage	400	V
V_{EBO}	Collector - emitter voltage	200	V
I_C	Emitter - base voltage	6	V
I_{CM}	Collector current - continuous	8	A
I_B	Collector current - peak	15	A
I_{BM}	Base current	2	A
P_C	Collector power dissipation at T_C = 25°C	60	W
T_j	Junction temperature	150	°C
T_{stg}	Storage temperature range	-65 to 200	°C

Thermal Characteristics

Symbol	Parameter	Maximum	Unit
$R_{th\ j\text{-}c}$	Thermal resistance, junction to case	2.08	°C/W
$R_{th\ j\text{-}a}$	Thermal resistance, junction to ambient	70	°C/W

Electrical Characteristics (T_C = 25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Minimum	Typical	Maximum	Unit
$V_{CEO\ (SUS)}$	Collector - emitter sustaining voltage	I_C = 100 mA; I_B = 0	200	-	-	V
$V_{CE(sat)}$	Collector - emitter saturation voltage	I_E = 5 A; I_C = 50 mA	-	-	1.5	V
$V_{BE(sat)}$	Base - emitter saturation voltage	I_C = 5 A; I_B = 50 mA	-	-	2.4	V
I_{CES}	Collector cutoff current	V_{CE} = Rated V_{CBO}; V_{BE} = 0	-	-	0.1	mA
I_{CEV}	Collector cutoff current	V_{CE} = Rated V_{CEV}; $V_{BE(off)}$ = 6 V	-	-	0.1	mA
I_{EBO}	Emitter cutoff current	V_{EB} = 6 V; I_C = 0	-	-	3	mA
V_{ECF}	C-E diode forward voltage	I_F = 4 A	-	-	2	V
Switching Times						
t_{on}	Turn-on time	I_C = 5 A; I_{B1} = 50 mA; I_{B2} = -0.5 A V_{CC} = 100 V	-	0.35	-	µs
t_s	storage time		-	0.55	-	µs
t_f	Fall time		-	0.2	-	µs

Part Number Table

Description	Part Number
Silicon NPN Darlington Power Transistor	BU806