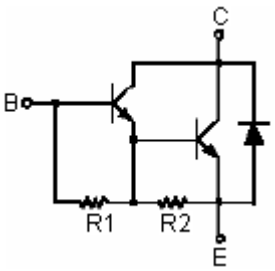
Darlington Power Transistor

Features:

- Silicon NPN
- Darlington
- High DC current gain

Fig. 1 Simplified Outline (TO-126) and Symbol



Pinning

Pin	Description
1	Emitter
2	Collector; connected to mounting base
3	Base

Absolute Maximum Ratings (T_a = 25°C)

Symbol	Parameter	Conditions	Value	Unit
V_{CBO}	Collector - base voltage	Open emitter	80	V
V_{CEO}	Collector - emitter voltage	Open base	80	V
V_{EBO}	Emitter - base voltage	Open collector	5	V
I_C	Collector current	-	4	A
I_{CM}	Collector current - peak	-	7	A
I_B	Base current	-	0.1	A
P_C	Collector power dissipation	T_C = 25°C	40	W
T_j	Junction temperature	-	150	°C
T_{stg}	Storage temperature	-	-55 to 150	°C

Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{th\ j\text{-}a}$	Thermal resistance from junction to ambient	100	K/W
$R_{th\ j\text{-}mb}$	Thermal resistance from junction to mounting base	3.12	K/W

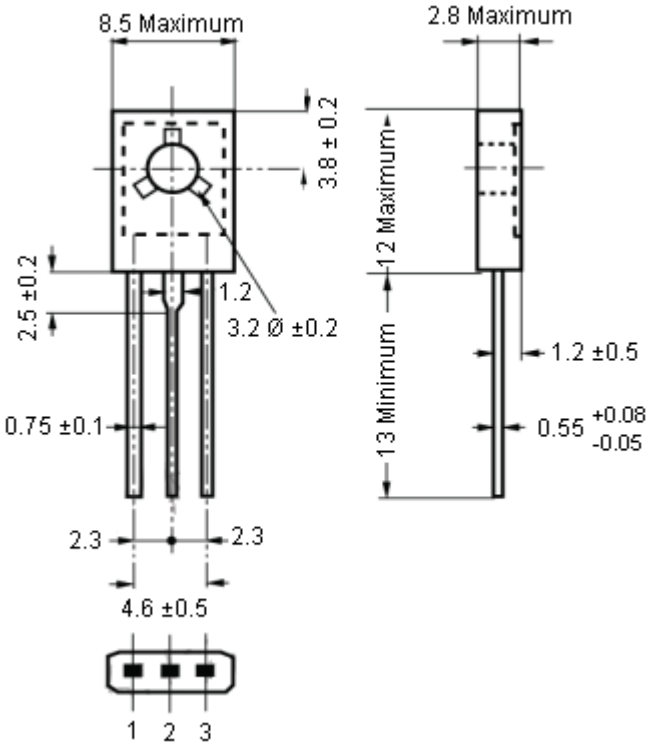
Characteristics (T_j = 25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Minimum	Typical	Maximum	Unit
$V_{(BR)\ CEO}$	Collector - emitter breakdown voltage	I_C = 100 mA; I_B = 0	80	-	-	V
$V_{(BR)\ CBO}$	Collector - base breakdown voltage	I_C = 1 mA; I_E = 0	80	-	-	V
$V_{(BR)\ EBO}$	Emitter - base breakdown voltage	I_C = 5 mA; I_C = 0	5	-	-	V

Characteristics (T_j = 25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Minimum	Typical	Maximum	Unit
V_{CEsat}	Collector - emitter saturation voltage	I_C = 1.5 A; I_B = 30 mA	-	-	2.5	V
$V_{BE\ (on)}$	Base - emitter on voltage	I_C = 1.5 A; V_{CE} = 3 V	-	-	2.5	V
I_{CBO}	Collector cut-off current	V_{CB} = rated BV_{CBO}; I_E = 0 T_a = 100°C	-	-	0.2 2	mA
I_{CEO}	Collector cut-off current	V_{CE} = 1/2 rated BV_{CEO}; I_B = 0	-	-	0.5	mA
I_{EBO}	Emitter cut-off current	V_{EB} = 5 V; I_C = 0	-	-	5	mA
h_{FE}	DC current gain	I_C = 1.5 A; V_{CE} = 3 V	750	-	-	-

Package Outline



Dimensions : Millimetres

Fig. 2 Outline Dimensions

Part Number Table

Description	Part Number
Silicon NPN Darlington Power Transistor	BD679