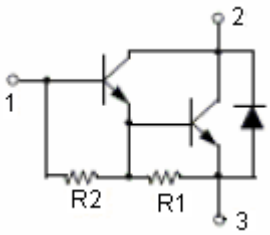
Darlington Power Transistor

Features:

- Silicon NPN
- High DC current gain : h_{FE} = 1,000 (Minimum) at I_C = 4 A
- Collector - emitter sustaining voltage : $V_{CEO(SUS)}$ = 100 V(Minimum)
- Low collector - emitter saturation voltage : $V_{CE(sat)}$ = 2 V(Maximum) at I_C = 4 A

Application:

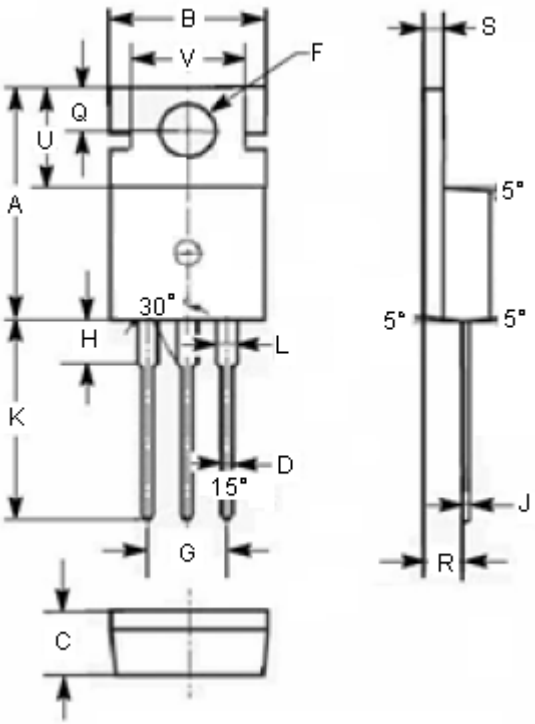
Designed for general-purpose amplifier and low-speed switching applications



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	100	V
V_{CEO}	Collector - emitter voltage	100	V
V_{EBO}	Emitter - base voltage	5	V
I_C	Collector current - continuous	8	A
I_{CM}	Collector current - peak	12	A
I_B	Base current - continuous	0.3	A
P_C	Collector power dissipation at T_C = 25°C	70	W
	Collector power dissipation at T_C = 25°C	2	W
T_j	Junction temperature	150	°C
T_{stg}	Storage temperature range	-65 to 150	°C

Thermal Characteristics

Symbol	Parameter	Maximum	Unit
$R_{th\ j\text{-}c}$	Thermal resistance, junction to case	1.785	°C/W
$R_{th\ j\text{-}a}$	Thermal resistance, junction to ambient	63.5	°C/W

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

Symbol	Parameter	Conditions	Minimum	Maximum	Unit
$V_{CEO\ (SUS)}$	Collector - emitter sustaining voltage	I_C = 30 mA, I_B = 0	100	-	V
$V_{CE\ (sat)\text{-}1}$	Collector - emitter saturation voltage	I_C = 4 A, I_B = 16mA	-	2	V
$V_{CE\ (sat)\text{-}2}$	Collector - emitter saturation voltage	I_C = 6 A; I_B = 30 mA	-	3	V
$V_{BE(on)}$	Base - emitter on voltage	I_C = 4 A; V_{CE} = 4 V	-	2.5	V
I_{CBO}	Collector cutoff current	V_{CB} = 100 V, I_E = 0	-	0.2	mA
I_{CEO}	Collector cutoff current	V_{CE} = 50 V, I_B = 0	-	0.5	mA
I_{EBO}	Emitter cutoff current	V_{EB} = 5 V; I_C = 0	-	5	mA
$h_{FE\text{-}1}$	DC current gain	I_C = 1 A; V_{CE} = 4 V	500	-	-
$h_{FE\text{-}2}$	DC current gain	I_C = 4 A; V_{CE} = 4 V	1,000	15,000	-

Part Number Table

Description	Part Number
Silicon NPN Darlington Power Transistor	TIP132