Silicon NPN Power Transistor

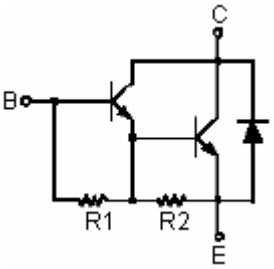
Features:

- Darlington
- High breakdown voltage

Applications:

High ruggedness electronic ignitions
High voltage ignition coil driver

Fig. 1 Simplified Outline (TO-3PN) and Symbol



Pinning

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

Absolute Maximum Ratings (T_a = 25°C)

Symbol	Parameter	Conditions	Value	Unit
V_{CBO}	Collector - base voltage	Open emitter	500	V
V_{CEO}	Collector - emitter voltage	Open base	400	V
V_{EBO}	Emitter - base voltage	Open collector	5	V
I_C	Collector current	-	15	A
I_{CM}	Collector current - peak	-	30	A
I_B	Base current	-	1	A
I_{BM}	Base current - peak	-	5	A
P_{tot}	Total power dissipation	T_C = 25°C	155	W
T_j	Maximum operating junction temperature	-	175	°C
T_{stg}	Storage temperature	-	-65 to 175	°C

Thermal Characteristics

Symbol	Parameter	Maximum	Unit
$R_{th\ j\text{-}case}$	Thermal resistance junction case	0.97	°C/W

Characteristics (T_j = 25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Minimum	Typical	Maximum	Unit
$V_{CEO\ (SUS)}$	Collector - emitter sustaining voltage	I_C = 0.1 A; I_B = 0; L = 10 mH	400	-	-	V
$V_{CEsat\ -1}$	Collector - emitter saturation voltage	I_C = 8 A; I_B = 0.1 A	-	-	1.6	V

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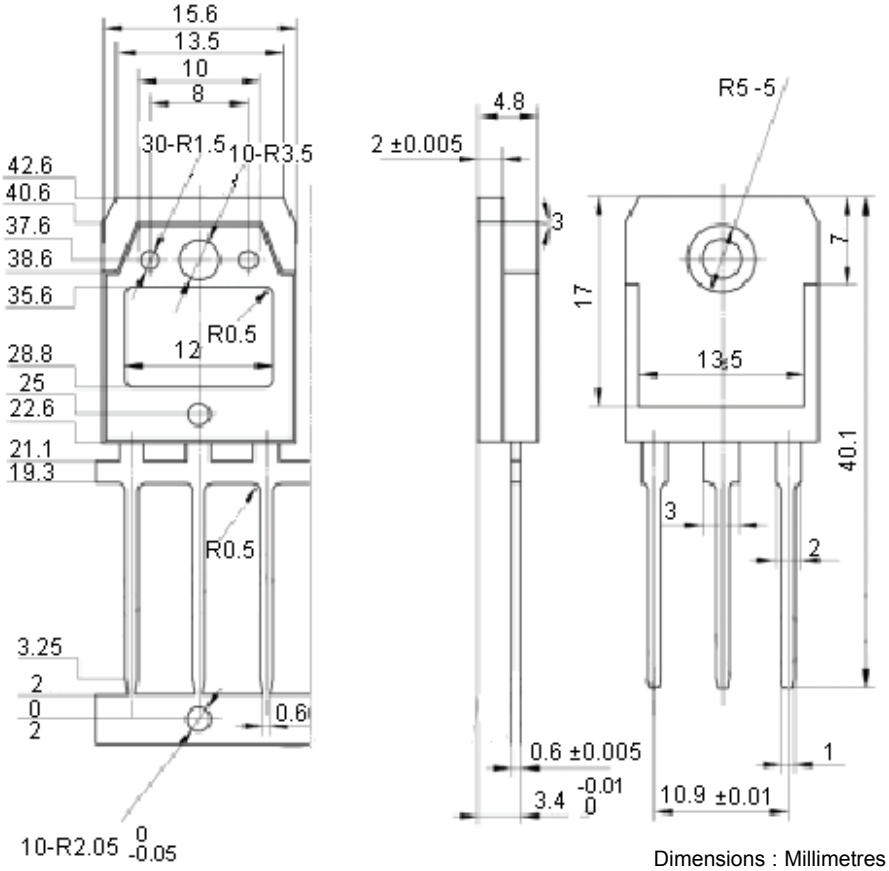
Characteristics (T_j = 25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Minimum	Typical	Maximum	Unit
$V_{CEsat-2}$	Collector - emitter saturation voltage	I_C = 10 A; I_B = 0.25 A	-	-	1.8	V
$V_{CEsat-3}$	Collector - emitter saturation voltage	I_C = 12 A; I_B = 0.3 A	-	-	2	V
$V_{BEsat-1}$	Base - emitter saturation voltage	I_C = 8 A; I_B = 0.1 A	-	-	2.2	V
$V_{BEsat-2}$	Base - emitter saturation voltage	I_C = 10 A; I_B = 0.25 A	-	-	2.5	V
$V_{BEsat-3}$	Base - emitter saturation voltage	I_C = 12 A; I_B = 0.3 A	-	-	2.7	V
I_{CES}	Collector cut-off current	V_{CE} = 500 V; V_{BE} = 0 T_j = 125°C	-	-	0.1 0.5	mA
I_{CEO}	Collector cut-off current	V_{CE} = 450 V; I_B = 0 T_j = 125°C	-	-	0.1 0.5	mA
I_{EBO}	Emitter cut-off current	V_{EB} = 5 V; I_C = 0	-	-	20	mA
h_{FE}	DC current gain	I_C = 5 A; V_{CE} = 10 V	300	-	-	-
V_F	Diode forward voltage	I_F = 10 A	-	-	2.5	V

Package Outline



Dimensions : Millimetres

Fig. 2 Outline Dimensions (Unindicated Tolerance : ±0.1 mm)

Part Number Table

Description	Part Number
Silicon NPN Power Transistor	BU941P