

Silicon NPN Power Transistors

BUL381D

DESCRIPTION

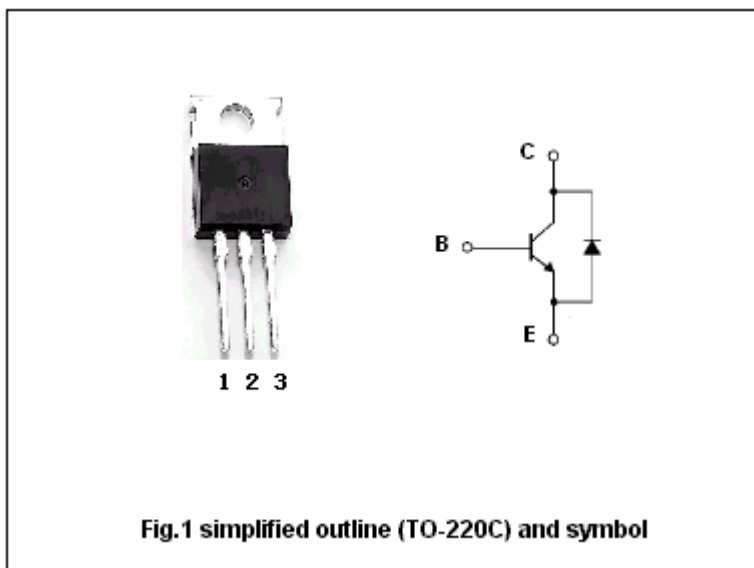
- With TO-220C package
- High voltage ,high speed
- Integrated antiparallel collector-emitter diode

APPLICATIONS

- Designed for use in lighting applications and low cost switch-mode power supplies.

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

Absolute maximum ratings($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	800	V
V_{CEO}	Collector-emitter voltage	Open base	400	V
V_{EBO}	Emitter-base voltage	Open collector	9	V
I_C	Collector current		5	A
I_{CM}	Collector current-Peak ($t_p < 5\text{ ms}$)		8	A
I_B	Base current		2	A
I_{BM}	Base current-Peak ($t_p < 5\text{ ms}$)		4	A
P_T	Total power dissipation	$T_C=25^\circ\text{C}$	70	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-C}$	Thermal resistance from junction to case	1.78	$^\circ\text{C}/\text{W}$

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CHARACTERISTICS

T_j=25°C unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEQ(SUS)}	Collector-emitter sustaining voltage	I _C =100mA; L=25mH	400			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =10mA; I _C =0	9			
V _{CEsat-1}	Collector-emitter saturation voltage	I _C =1A; I _B =0.2A			0.5	V
V _{CEsat-2}	Collector-emitter saturation voltage	I _C =2A; I _B =0.4A			0.7	V
V _{CEsat-3}	Collector-emitter saturation voltage	I _C =3A; I _B =0.75A			1.1	V
V _{BEsat-1}	Base-emitter saturation voltage	I _C =1A; I _B =0.2A			1.1	V
V _{BEsat-2}	Base-emitter saturation voltage	I _C =2A; I _B =0.4A			1.2	V
I _{CES}	Collector cut-off current	V _{CE} =800V; V _{BE} =0 T _j =125°C			100 500	μA
I _{CEO}	Collector cut-off current	V _{CE} =400V; I _B =0			250	μA
h _{FE-1}	DC current gain	I _C =2A; V _{CE} =5V	8			
h _{FE-2}	DC current gain	I _C =10mA; V _{CE} =5V	10			
V _F	Diode forward voltage	I _C =2A			2.5	V

Switching times resistive load

t _s	Storage time	V _{CC} =250V, I _C =2A I _{B1} =-I _{B2} =0.4A; t _p =30μs	1.5		2.5	μs
t _f	Fall time				0.8	μs

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PACKAGE OUTLINE

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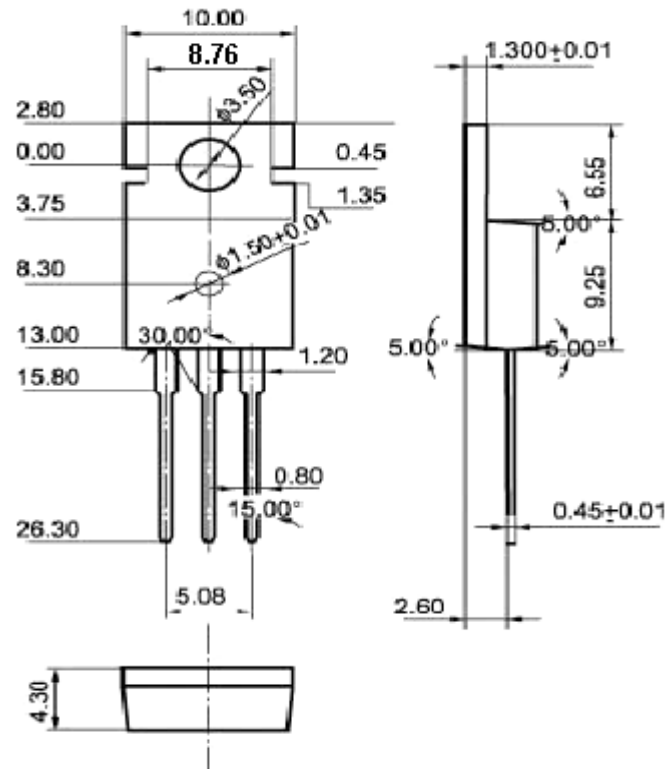


Fig.2 Outline dimensions (unindicated tolerance: 0.1mm)