

Inchange Semiconductor

Product Specification

Silicon NPN Power Transistors

BUL381

DESCRIPTION

- With TO-220C package
- High voltage capability
- Very high switching speed

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

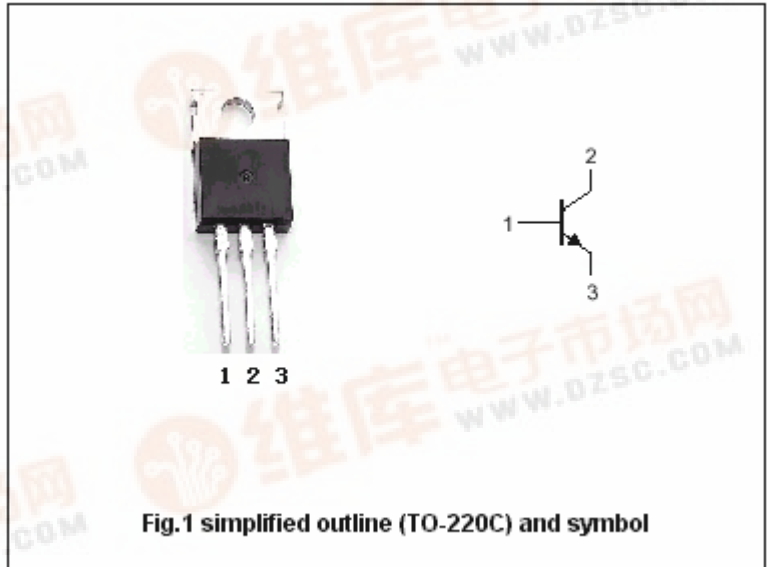


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings (Ta=25)

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 ($t_p < 5$ ms)		8	A
I_B	Base current		2	A
I_{BM}	Base current-Peak ($t_p < 5$ ms)		4	A
P_T	Total power dissipation	$T_C = 25$	70	W
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-65~150	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th j-c}$	Thermal resistance from junction to case	1.78	/W

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CHARACTERISTICS

T_j=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(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				
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 =0.8A			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			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			

Switching times resistive load

t _{on}	Turn-on time	V _{CC} =250V, I _C =2A I _{B1} =- I _{B2} =0.4A t _p =30 μs			1	μs
t _s	Storage time		1.4		2.2	μs
t _f	Fall time				0.8	μs

PACKAGE OUTLINE

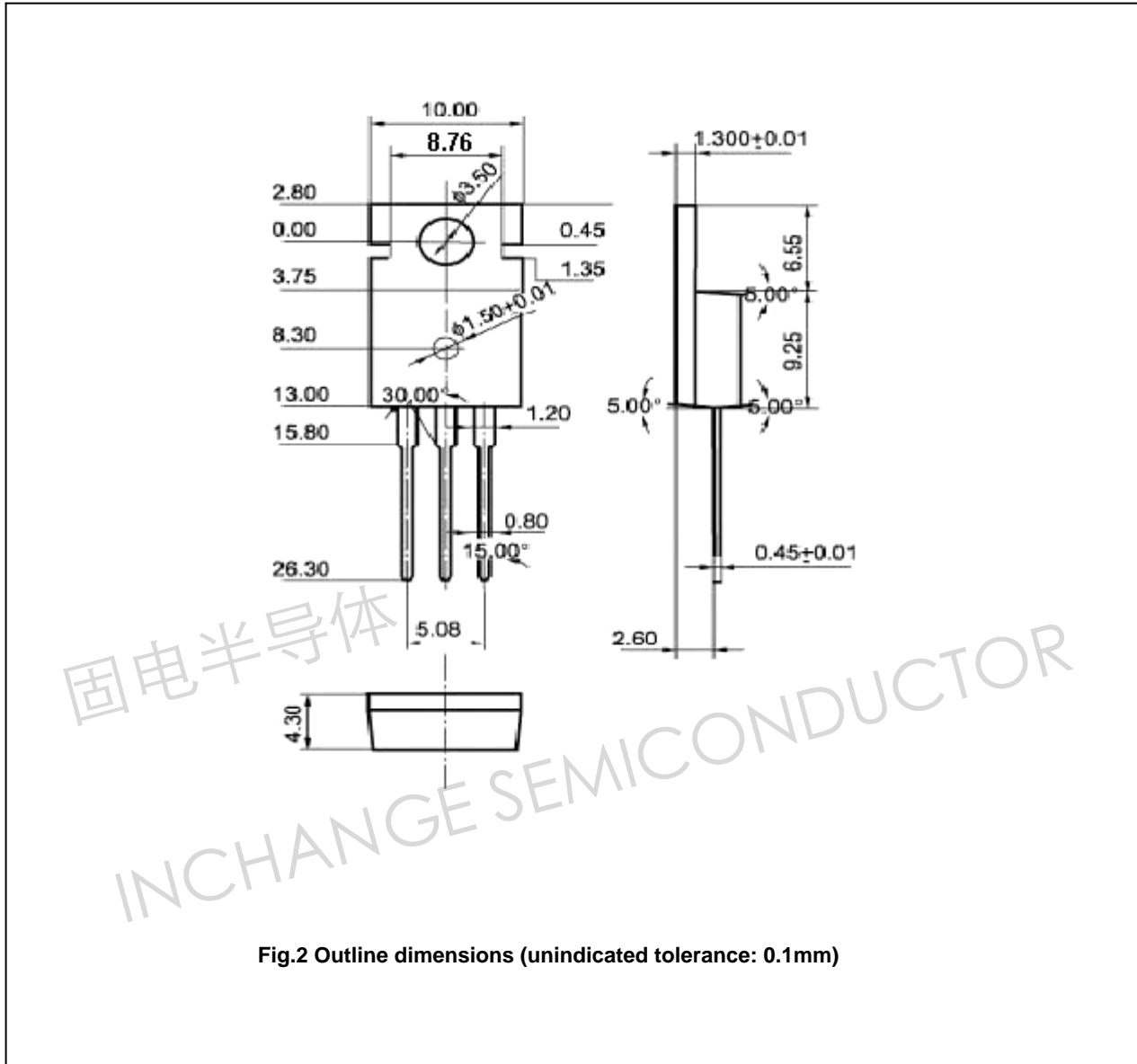


Fig.2 Outline dimensions (unindicated tolerance: 0.1mm)