

Silicon NPN Power Transistors

2SD2151

DESCRIPTION

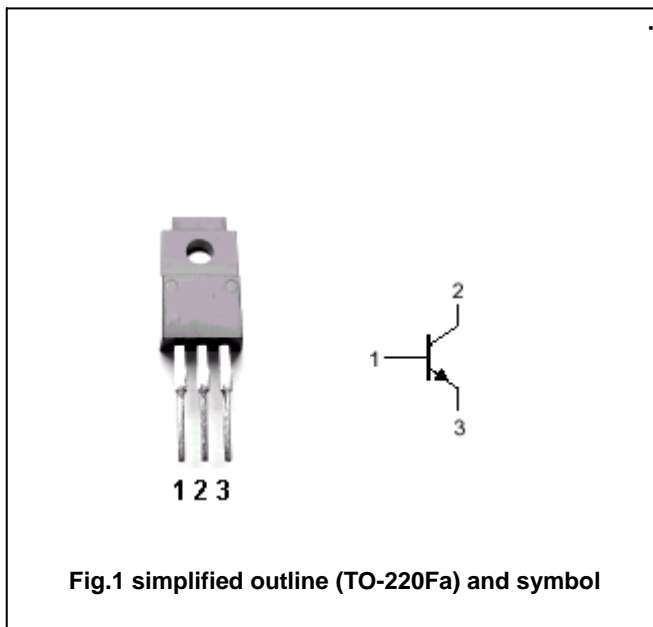
- With TO-220Fa package
- Low collector to emitter saturation voltage
- Large collector current I_C

APPLICATIONS

- For power switching applicaitons

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



Absolute maximum ratings (Ta=25)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	130	V
V_{CEO}	Collector-emitter voltage	Open base	80	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		10	A
I_{CM}	Collector current-peak		20	A
P_C	Collector power dissipation	$T_C=25$	30	W
		$T_a=25$	2	
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-55~150	

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CHARACTERISTICS

T_j=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =10mA, I _B =0	80			V
V _{CEsat-1}	Collector-emitter saturation voltage	I _C =6A; I _B =0.3A			0.5	V
V _{CEsat-2}	Collector-emitter saturation voltage	I _C =10A; I _B =1A			1.5	V
V _{BE sat-1}	Base-emitter saturation voltage	I _C =6A; I _B =0.3A			1.5	V
V _{BE sat-2}	Base-emitter saturation voltage	I _C =10A; I _B =1A			2.5	V
I _{CBO}	Collector cut-off current	V _{CB} =100V; I _E =0			10	μA
I _{EBO}	Emitter cut-off current	V _{EB} =5V; I _C =0			50	μA
h _{FE-1}	DC current gain	I _C =0.1A; V _{CE} =2V	45			
h _{FE-2}	DC current gain	I _C =3A; V _{CE} =2V	90		260	
h _{FE-3}	DC current gain	I _C =6A; V _{CE} =2V	30			
f _T	Transition frequency	I _C =0.5A; V _{CE} =10V; f=1MHz		20		MHz

Switching times

t _{on}	Turn-on time	I _C =6A; I _{B1} =-I _{B2} =0.6A V _{CC} =50V		0.5		μs
t _s	Storage time			2.0		μs
t _f	Fall time			0.2		μs

◆ h_{FE-2} Classifications

Q	P
90-180	130-260

PACKAGE OUTLINE

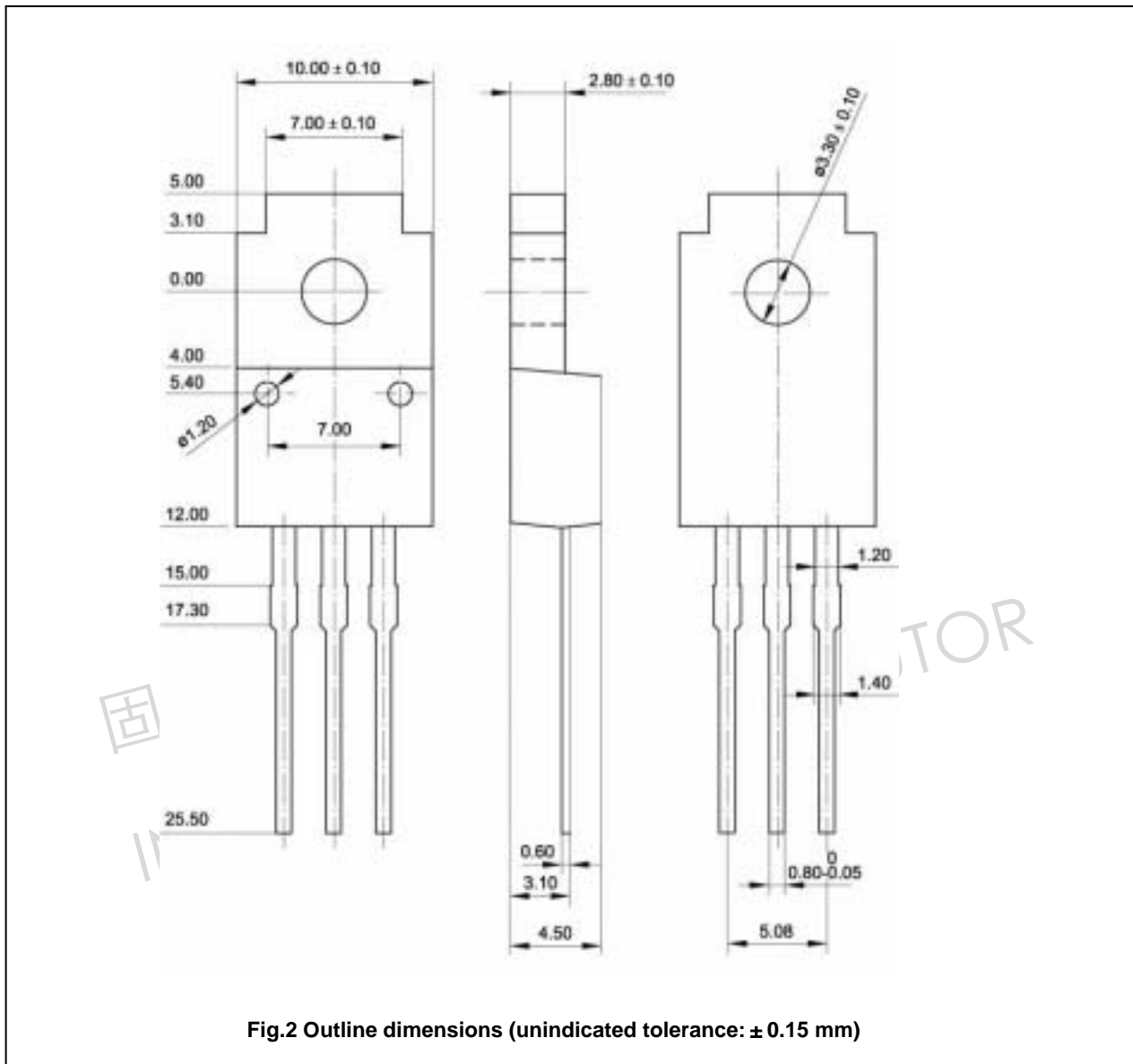


Fig.2 Outline dimensions (unindicated tolerance: ± 0.15 mm)