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

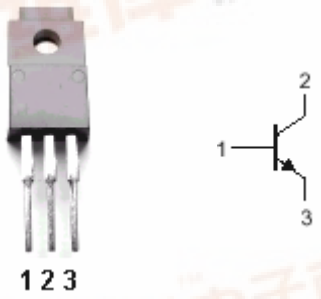

Fig.1 simplified outline (TO-220Fa) and symbol

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

Tj=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

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PACKAGE OUTLINE

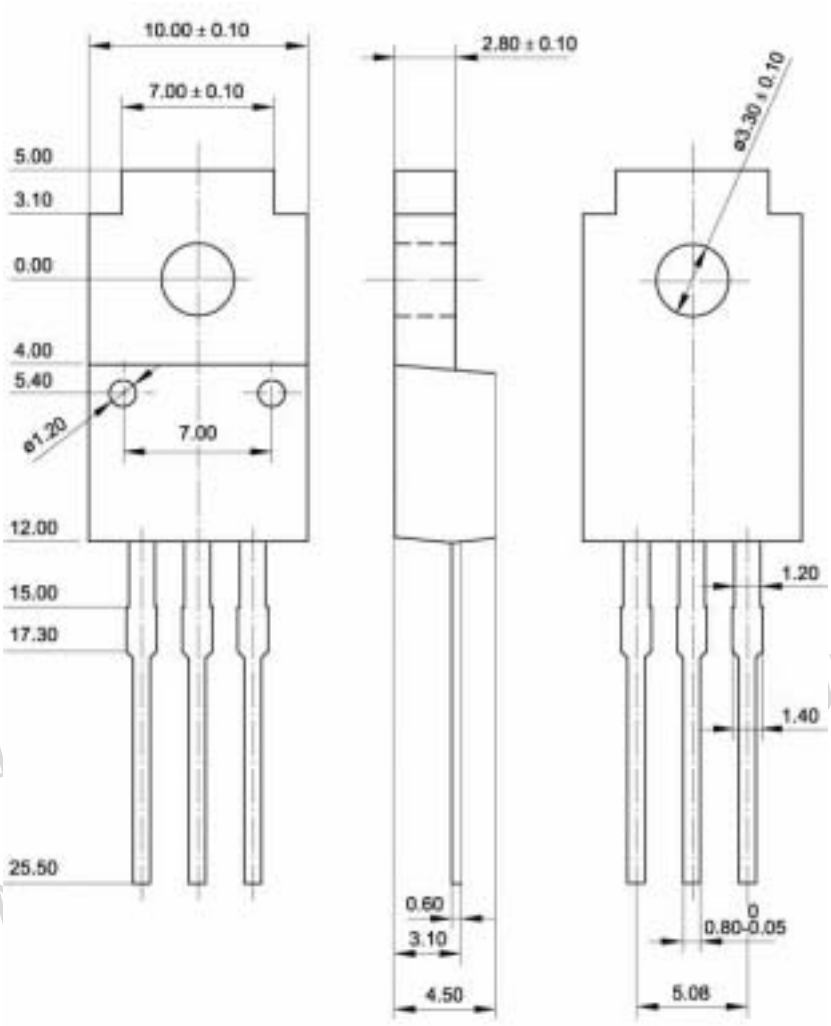

Fig.2 Outline dimensions (unindicated tolerance:±0.15 mm)