

Silicon PNP Power Transistors

2SA1651

DESCRIPTION

- With TO-220Fa package
- Fast switching speed
- Low collector saturation voltage

APPLICATIONS

- For use in switching power supplies,DC-DC converters,motor drivers,solenoid drivers, and other low-voltage power supply devices, as well as for high current switching

PINNING

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

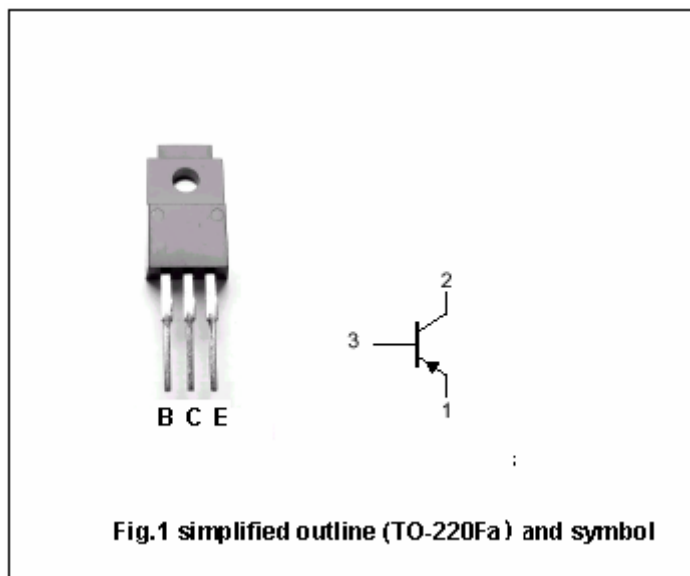


Fig.1 simplified outline (TO-220Fa) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	-150	V
V_{CEO}	Collector-emitter voltage	Open base	-100	V
V_{EBO}	Emitter-base voltage	Open collector	-7	V
I_C	Collector current		-7	A
I_{CM}	Collector current-peak	$PW \leq 300 \mu s$, duty cycle $\leq 10\%$	-14	A
I_B	Base current		-3.5	A
P_T	Total power dissipation	$T_a=25^{\circ}\text{C}$	1.5	W
		$T_C=25^{\circ}\text{C}$	25	
T_j	Junction temperature		150	$^{\circ}\text{C}$
T_{stg}	Storage temperature		-55~150	$^{\circ}\text{C}$

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEsat-1}	Collector-emitter saturation voltage	I _C =-4A; I _B =-0.2A			-0.3	V
V _{CEsat-2}	Collector-emitter saturation voltage	I _C =-6A; I _B =-0.3A			-0.5	V
V _{BE sat-1}	Base-emitter saturation voltage	I _C =-4A; I _B =-0.2A			-1.2	V
V _{BE sat-2}	Base-emitter saturation voltage	I _C =-6A; I _B =-0.3A			-1.5	V
I _{CBO}	Collector cut-off current	V _{CB} =-100V; I _E =0			-10	μ A
I _{EBO}	Emitter cut-off current	V _{EB} =-5V; I _C =0			-10	μ A
h _{FE-1}	DC current gain	I _C =-0.5A; V _{CE} =-2V	100			
h _{FE-2}	DC current gain	I _C =-1.5A; V _{CE} =-2V	100		400	
h _{FE-3}	DC current gain	I _C =-4A; V _{CE} =-2V	60			
f _T	Transition frequency	I _C =-1.5A; V _{CE} =-10V		150		MHz
C _{OB}	Collector capacitance	I _E =-0; V _{CB} =-10V; f=1MHz		150		pF

Switching times

t _{on}	Turn-on time	I _C =-4A; I _{B1} =-I _{B2} =-0.2A R _L =12.5 Ω; V _{CC} =-50V		0.3		μ s
t _s	Storage time			1.5		μ s
t _f	Fall time			0.4		μ s

◆ h_{FE-2} Classifications

M	L	K
100-200	150-300	200-400

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PACKAGE OUTLINE

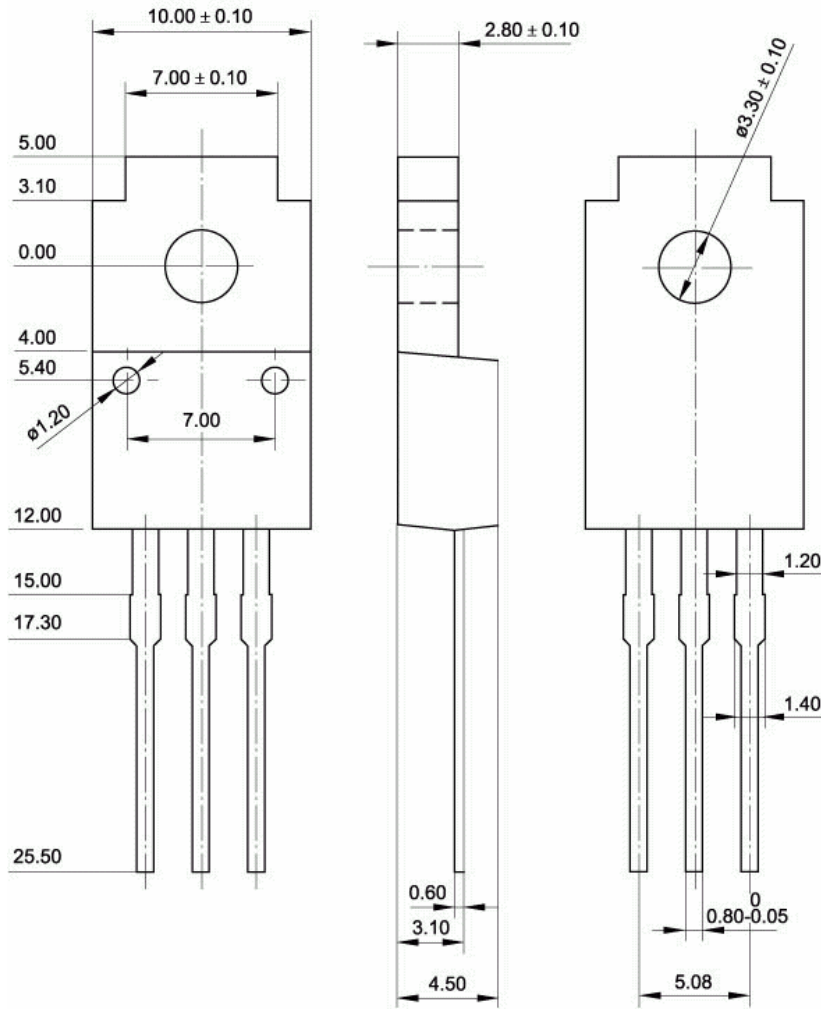


Fig.2 Outline dimensions(unindicated tolerance: ± 0.15 mm)