

**Silicon PNP Power Transistors**

**2SA1757**

**DESCRIPTION**

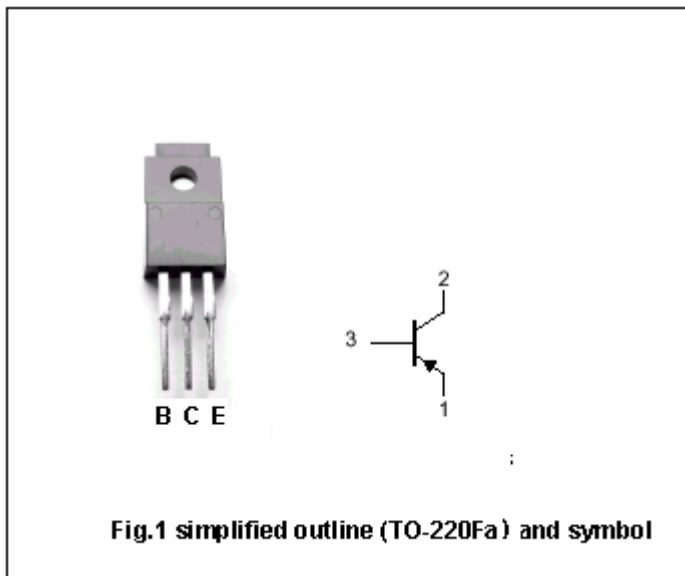
- With TO-220Fa package
- Low saturation voltage
- Wide area of safe operation

**APPLICATIONS**

- For switching applications

**PINNING**

PIN	DESCRIPTION
1	Emitter
2	Collector
3	Base



**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	-100	V
$V_{CEO}$	Collector-emitter voltage	Open base	-60	V
$V_{EBO}$	Emitter-base voltage	Open collector	-5	V
$I_C$	Collector current		-5	A
$I_{CM}$	Collector current-peak		-10	A
$P_C$	Collector power dissipation	$T_C=25$	25	W
		$T_a=25$	1	
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-55~150	

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## CHARACTERISTICS

T<sub>j</sub>=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-60			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =-50 μA, I <sub>C</sub> =0	-5			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-3A, I <sub>B</sub> =-0.15A			-0.3	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-4A, I <sub>B</sub> =-0.2A			-0.5	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-3A, I <sub>B</sub> =-0.15A			-1.2	V
V <sub>BEsat-2</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-4A, I <sub>B</sub> =-0.2A			-1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-100V, I <sub>E</sub> =0			-10	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-5V; I <sub>C</sub> =0			-10	μA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =-1A; V <sub>CE</sub> =-2V	160		320	
C <sub>ob</sub>	Output capacitance	I <sub>E</sub> =0; V <sub>CB</sub> =-10V, f=1MHz		130		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-0.5A; V <sub>CE</sub> =-10V		80		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =-3A; R <sub>L</sub> =10 I <sub>B1</sub> =- I <sub>B2</sub> =-0.15A V <sub>CC</sub> -30V			0.3	μs
t <sub>s</sub>	Storage time				1.5	μs
t <sub>f</sub>	Fall time				0.3	μs

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PACKAGE OUTLINE

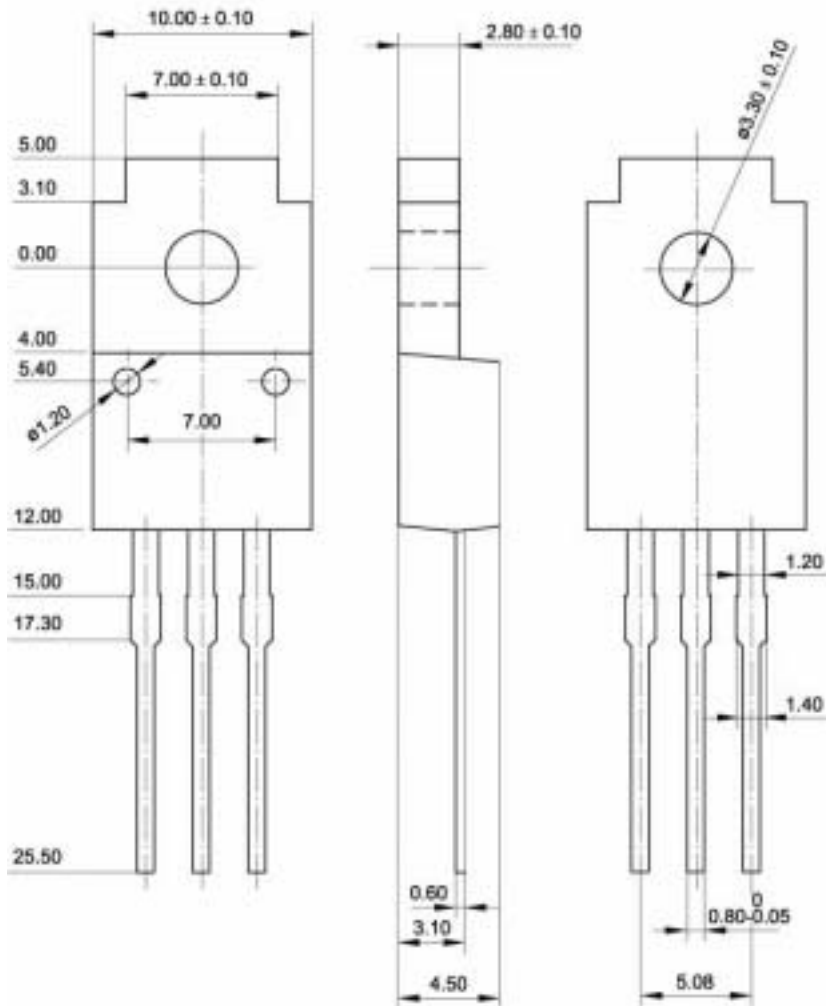


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.15$  mm)