

Silicon NPN Power Transistors

2SD1277 2SD1277A

DESCRIPTION

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- With TO-220Fa package
- Complement to type 2SB951/951A
- High DC current gain
- High-speed switching

APPLICATIONS

- For medium speed power switching

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

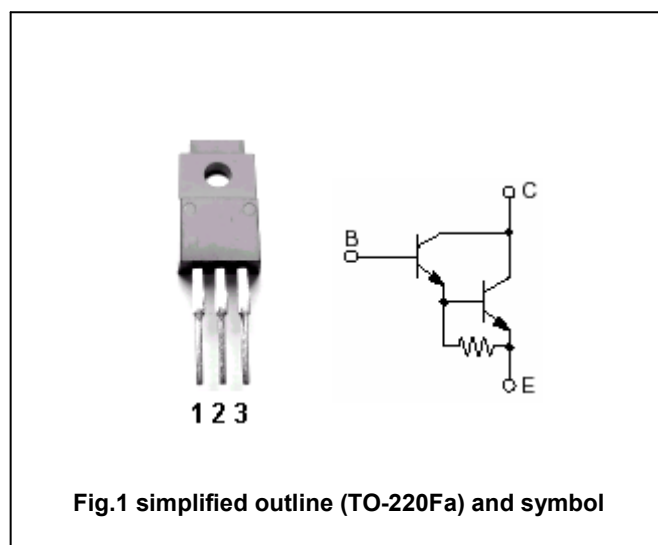


Fig.1 simplified outline (TO-220Fa) and symbol

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

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	2SD1277	Open emitter	60	V
		2SD1277A		80	
V_{CEO}	Collector-emitter voltage	2SD1277	Open base	60	V
		2SD1277A		80	
V_{EBO}	Emitter-base voltage		Open collector	7	V
I_C	Collector current (DC)			8	A
I_{CM}	Collector current-Peak			12	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$		45	W
		$T_a=25^\circ\text{C}$		2	
T_j	Junction temperature			150	$^\circ\text{C}$
T_{stg}	Storage temperature			-55~150	$^\circ\text{C}$

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CHARACTERISTICS

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 $T_j=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	2SD1277	$I_C=30\text{mA}$, $I_B=0$	60			V
		2SD1277A		80			
V_{CEsat}	Collector-emitter saturation voltage		$I_C=4\text{A}$; $I_B=8\text{mA}$			1.5	V
V_{BEsat}	Base-emitter saturation voltage		$I_C=4\text{A}$; $I_B=8\text{mA}$			2	V
I_{CBO}	Collector cut-off current	2SD1277	$V_{CB}=60\text{V}$; $I_E=0$			0.1	mA
		2SD1277A	$V_{CB}=80\text{V}$; $I_E=0$				
I_{EBO}	Emitter cut-off current		$V_{EB}=7\text{V}$; $I_C=0$			2	mA
h_{FE-1}	DC current gain		$I_C=8\text{A}$; $V_{CE}=3\text{V}$	500			
h_{FE-2}	DC current gain		$I_C=4\text{A}$; $V_{CE}=3\text{V}$	2000		10000	
f_T	Transition frequency		$I_C=0.5\text{A}$; $V_{CE}=10\text{V}$; $f=1\text{MHz}$	20			MHz

Switching times

t_{on}	Turn-on time	$I_C=4\text{A}$; $I_{B1}=8\text{mA}$ $I_{B2}=-8\text{mA}$; $V_{CC}=50\text{V}$		0.5		μs
t_{stg}	Storage time			4.0		μs
t_f	Fall time			1.0		μs

◆ h_{FE-2} Classifications

Q	R
2000-5000	4000-10000

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PACKAGE OUTLINE

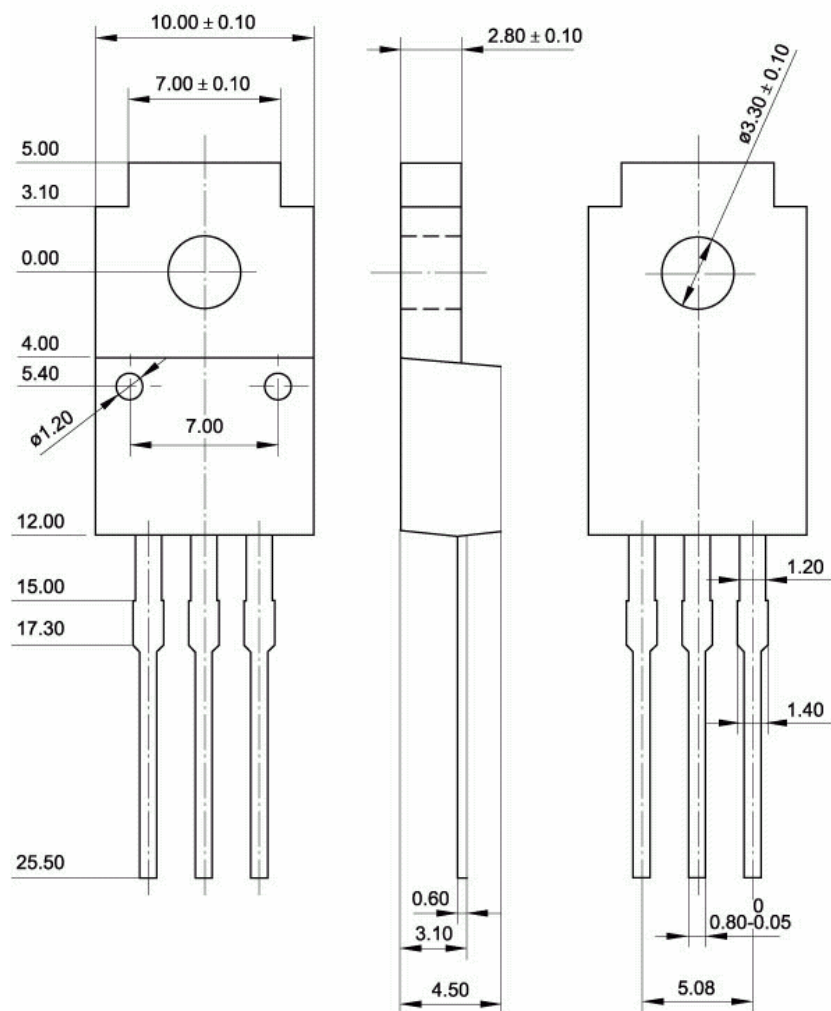
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Fig.2 Outline dimensions (unindicated tolerance: ±0.15 mm)