

Silicon NPN Power Transistors

2SD1277 2SD1277A

DESCRIPTION

- With TO-220Fa package
- Complement to type 2SB951 and 2SB951A
- High forward current transfer ratio h_{FE}
- High-speed switching

APPLICATIONS

- For medium speed power switching

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

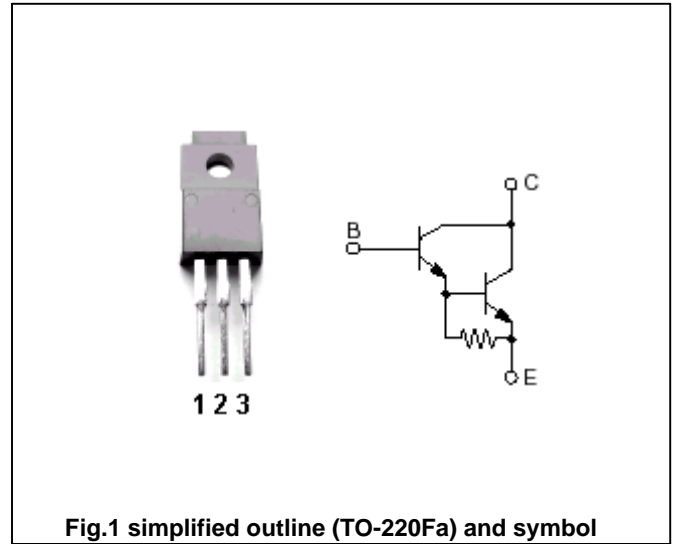


Fig.1 simplified outline (TO-220Fa) and symbol

ABSOLUTE MAXIMUM RATINGS AT $T_c=25$

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	2SD1277	60	V
		2SD1277A	80	
V_{CEO}	Collector-emitter voltage	2SD1277	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	$T_c=25$	45	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 _{CEO}	Collector-emitter breakdown voltage	2SD1277	I _C =30mA, I _B =0	60			V
		2SD1277A		80			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =4A I _B =8mA			1.5	V	
V _{BEsat}	Base-emitter saturation voltage	I _C =4A I _B =8mA			2	V	
I _{CBO}	Collector cut-off current	2SD1277	V _{CB} =60V I _E =0			0.1	Ma
		2SD1277A		V _{CB} =80V I _E =0			0.1
I _{EBO}	Emitter cut-off current	V _{EB} =7V; I _C =0			2	mA	
h _{FE-1}	DC current gain	I _C =8A ; V _{CE} =3V	500				
h _{FE-2}	DC current gain	I _C =4A ; V _{CE} =3V	2000		10000		
f _T	Transition frequency	I _C =0.5A; V _{CE} =10V;f=1MHz	20			MHz	

Switching times

t _{on}	Turn-on time	I _C =4A ; I _{B1} =8mA I _{B2} =-8mA; V _{CC} =50V		0.5		s
t _{stg}	Storage time			4		s
t _f	Fall time			1		μs

◆ h_{FE-2} Classifications

Q	R
2000-5000	4000-10000

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PACKAGE OUTLINE

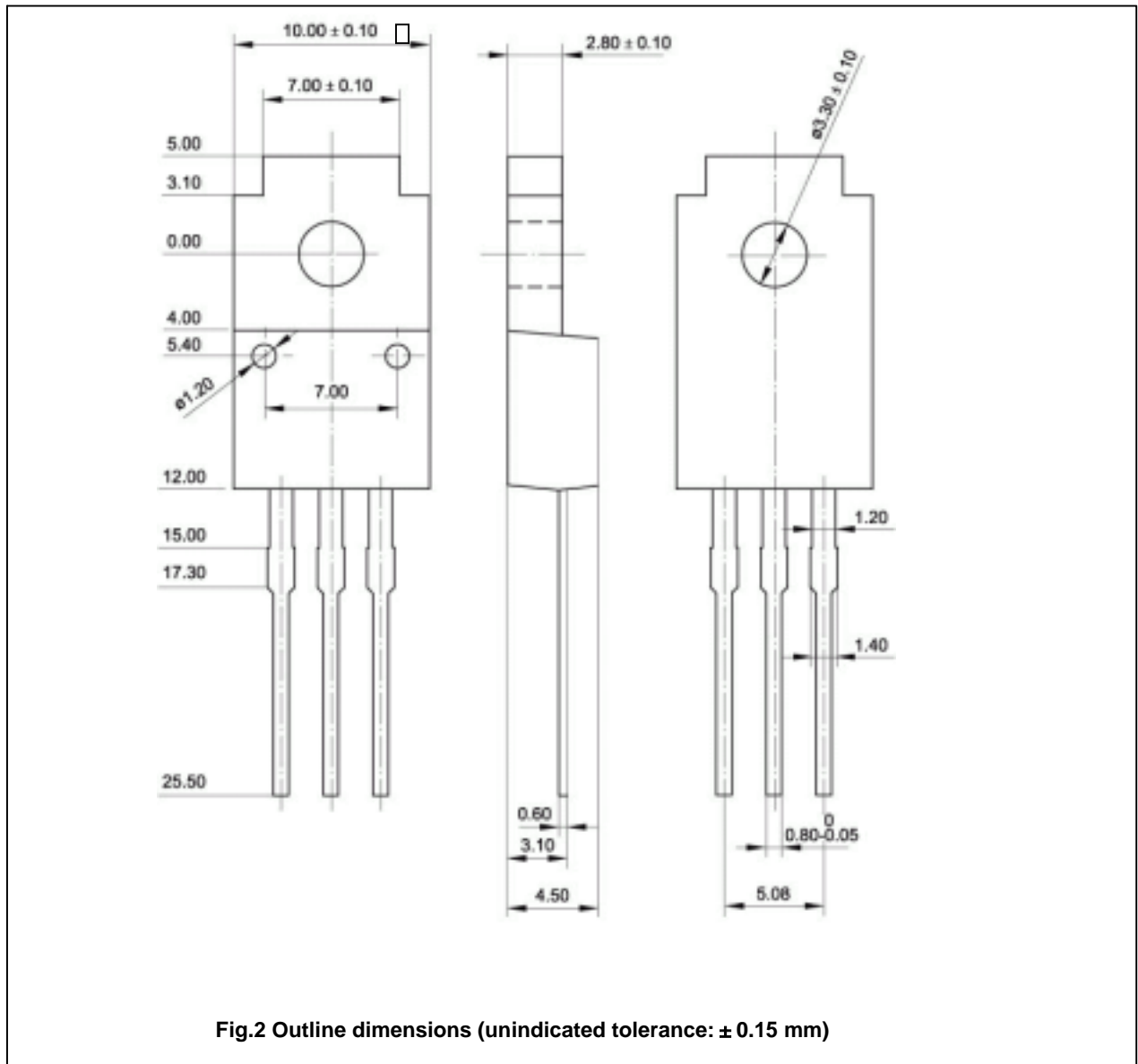


Fig.2 Outline dimensions (unindicated tolerance: ± 0.15 mm)