

Silicon NPN Power Transistors

2N5301 2N5302 2N5303

DESCRIPTION

- With TO-3 package
- Complement to type 2N4398/4399/5745
- Low collector/saturation voltage
- Excellent safe operating area

APPLICATIONS

- For use in power amplifier and switching circuits applications.

PINNING

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

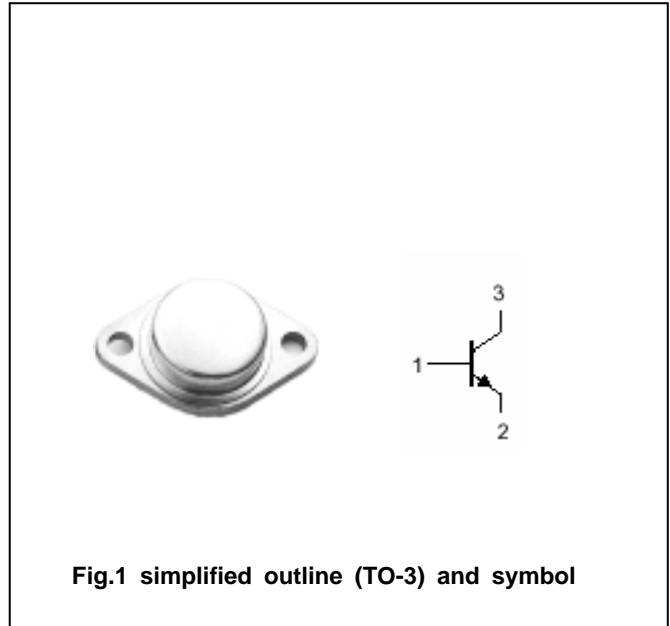


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings(Ta=)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	2N5301	40	V
		2N5302	60	
		2N5303	80	
V _{CEO}	Collector-emitter voltage	2N5301	40	V
		2N5302	60	
		2N5303	80	
V _{EBO}	Emitter-base voltage	Open collector	5	V
I _C	Collector current	2N5301/5302	30	A
		2N5303	20	
I _B	Base current		7.5	A
P _D	Total power dissipation	T _C =25	200	W
T _j	Junction temperature		200	
T _{stg}	Storage temperature		-65~200	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R _{th j-c}	Thermal resistance junction to case	0.875	/W

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CHARACTERISTICS

T_j=25 unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE0(SUS)}	Collector-emitter sustaining voltage	2N5301	I _C =0.2A ; I _B =0	40			V
		2N5302		60			
		2N5303		80			
V _{CEsat-1}	Collector-emitter saturation voltage	2N5301/5302	I _C =10A ; I _B =1A			0.75	V
		2N5303				1.0	
V _{CEsat-2}	Collector-emitter saturation voltage	2N5301/5302	I _C =20A ; I _B =2A			2.0	V
		2N5303	I _C =15A ; I _B =1.5A			1.5	
V _{CEsat-3}	Collector-emitter saturation voltage	2N5301/5302	I _C =30A ; I _B =6A			3.0	V
		2N5303	I _C =20A ; I _B =4A			2.0	
V _{BEsat-1}	Base-emitter saturation voltage		I _C =10A ; I _B =1A			1.7	V
V _{BEsat-2}	Base-emitter saturation voltage	2N5301/5302	I _C =15A ; I _B =1.5A			1.8	V
		2N5303				2.0	
V _{BEsat-3}	Base-emitter saturation voltage	2N5301/5302	I _C =20A ; I _B =2A			2.5	V
		2N5303	I _C =20A ; I _B =4A				
V _{BE-1}	Base-emitter on voltage	2N5301/5302	I _C =15A ; V _{CE} =2V			1.7	V
		2N5303	I _C =10A ; V _{CE} =2V			1.5	
V _{BE-2}	Base-emitter on voltage	2N5301/5302	I _C =30A ; V _{CE} =4V			3.0	V
		2N5303	I _C =20A ; V _{CE} =4V			2.5	
I _{CEx}	Collector cut-off current		V _{CE} = Rated V _{CE0} ; V _{BE(off)} =1.5V T _C =150			1.0 10	mA
I _{CEO}	Collector cut-off current		V _{CE} =Rated V _{CE0} ; I _B =0			5.0	mA
I _{CBO}	Collector cut-off current		V _{CB} =Rated V _{CBO} ; I _E =0			1.0	mA
I _{EBO}	Emitter cut-off current		V _{EB} =5V ; I _C =0			5.0	mA
h _{FE-1}	DC current gain		I _C =1A ; V _{CE} =2V	40			
h _{FE-2}	DC current gain	2N5303	I _C =10A ; V _{CE} =2V	15		60	
		2N5301/5302	I _C =15A ; V _{CE} =2V				
h _{FE-3}	DC current gain	2N5303	I _C =20A ; V _{CE} =4V	5			
		2N5301/5302	I _C =30A ; V _{CE} =4V				
f _T	Transition frequency		I _C =1A ; V _{CE} =10V ; f=1.0MHz	2			MHz

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PACKAGE OUTLINE

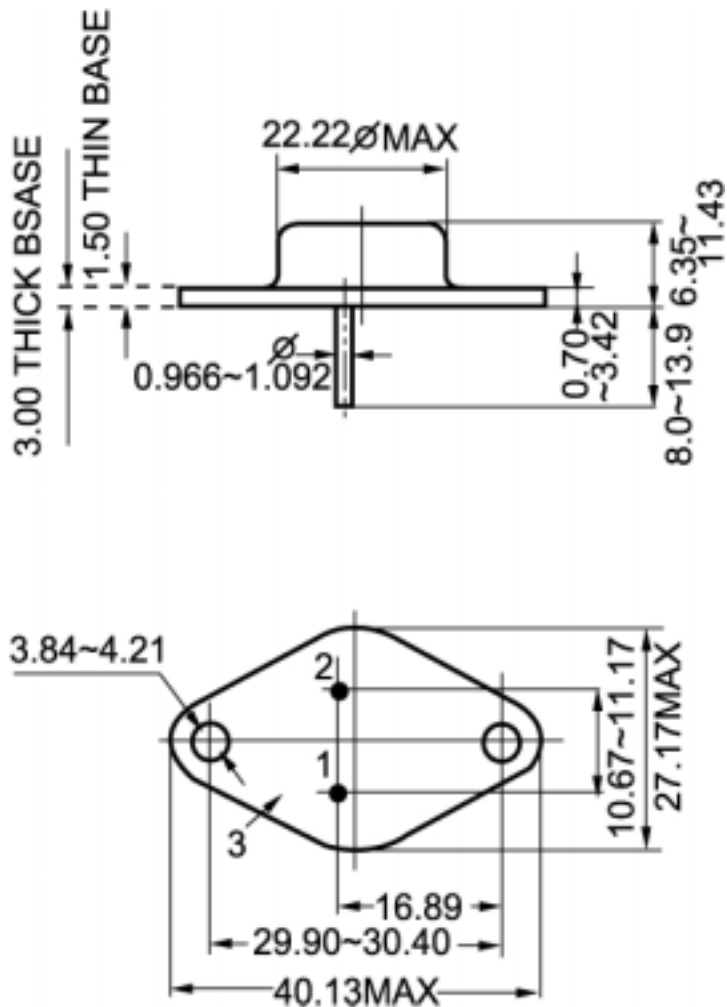


Fig.2 outline dimensions (unindicated tolerance: ± 0.1 mm)