

## Silicon PNP Power Transistors

2SA1601

## DESCRIPTION

- With ITO-220 package
- Switching power transistor
- Low collector saturation voltage

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

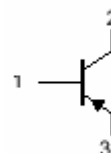


Fig.1 simplified outline (ITO-220) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	-60	V
$V_{CEO}$	Collector-emitter voltage	Open base	-40	V
$V_{EBO}$	Emitter-base voltage	Open collector	-7	V
$I_C$	Collector current		-15	A
$I_{CM}$	Collector current-Peak		-30	A
$I_B$	Base current		-2	A
$I_{BM}$	Base current-Peak		-3	A
$P_T$	Total power dissipation	$T_C=25^\circ\text{C}$	45	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-C}$	Thermal resistance junction case	2.77	$^\circ\text{C}/\text{W}$

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =-0.1A ; I <sub>B</sub> =0	-40			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-7.5A ; I <sub>B</sub> =-0.4A			-0.3	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-7.5A ; I <sub>B</sub> =-0.4A			-1.2	V
I <sub>CBO</sub>	Collector cut-off current	At rated volatge			-0.1	mA
I <sub>CEO</sub>	Collector cut-off current					
I <sub>EBO</sub>	Emitter cut-off current	At rated volatge			-0.1	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =-7.5A ; V <sub>CE</sub> =-2V	70			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-1.5A ; V <sub>CE</sub> =-10V		50		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =-7.5A ; I <sub>B1</sub> =-I <sub>B2</sub> =-0.75A , R <sub>L</sub> =4 Ω ; V <sub>BB2</sub> =-4V			0.3	μ s
t <sub>s</sub>	Storage time				1.5	μ s
t <sub>f</sub>	Fall time				0.5	μ s

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PACKAGE OUTLINE

