

## Silicon NPN Power Transistors

## 2N5660 2N5661

## DESCRIPTION

- With TO-66 package
- High breakdown voltage

## APPLICATIONS

- High speed switching and linear amplifier
- High-voltage operational amplifiers
- Switching regulators ,converters
- Deflection stages and high fidelity amplifiers

## PINNING (See Fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

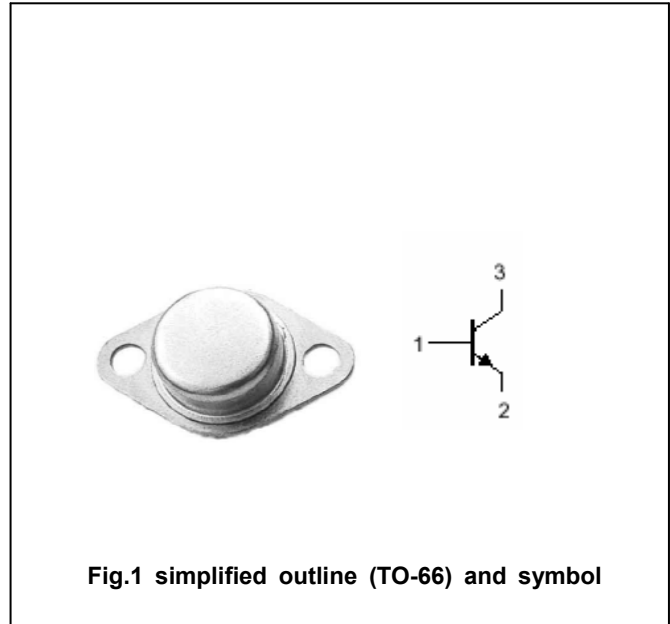


Fig.1 simplified outline (TO-66) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	2N5660	250	V
		2N5661	400	
$V_{CEO}$	Collector-emitter voltage	2N5660	200	V
		2N5661	300	
$V_{EBO}$	Emitter-base voltage	Open collector	6	V
$I_C$	Collector current		2.0	A
$I_B$	Base current		0.5	A
$P_T$	Total power dissipation	$T_C=100^\circ\text{C}$	20	W
		$T_a=25^\circ\text{C}$	2	
$T_j$	Junction temperature		200	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-65~200	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal resistance junction to case	5.0	$^\circ\text{C}/\text{W}$

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## CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	2N5660	I <sub>C</sub> =10mA ; I <sub>B</sub> =0	200			V
		2N5661		300			
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage		I <sub>E</sub> =10μA ; I <sub>C</sub> =0	6			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =1A ; I <sub>B</sub> =0.1A			0.4	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =2A ; I <sub>B</sub> =0.4A			0.8	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage		I <sub>C</sub> =1A ; I <sub>B</sub> =0.1A			1.2	V
V <sub>BEsat-2</sub>	Base-emitter saturation voltage		I <sub>C</sub> =2A ; I <sub>B</sub> =0.4A			1.5	V
I <sub>CES</sub>	Collector cut-off current	2N5660	V <sub>CE</sub> =200V ; V <sub>BE(off)</sub> =1.5V			0.2	mA
		2N5661	V <sub>CE</sub> =300V ; V <sub>BE(off)</sub> =1.5V				
I <sub>CBO</sub>	Collector cut-off current	2N5660	V <sub>CB</sub> =250V ; I <sub>E</sub> =0			1.0	mA
		2N5661	V <sub>CB</sub> =400V ; I <sub>E</sub> =0				
h <sub>FE-1</sub>	DC current gain	2N5660	I <sub>C</sub> =50mA ; V <sub>CE</sub> =2V	40			
		2N5661		25			
h <sub>FE-2</sub>	DC current gain	2N5660	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V	40		120	
		2N5661		25		75	
h <sub>FE-3</sub>	DC current gain		I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	15			
h <sub>FE-4</sub>	DC current gain		I <sub>C</sub> =2A ; V <sub>CE</sub> =5V	5			
C <sub>OB</sub>	Output capacitance		I <sub>E</sub> =0 ; V <sub>CB</sub> =10V ; f=1MHz			45	pF
t <sub>on</sub>	Turn-on time	2N5660	V <sub>CC</sub> =100V ; I <sub>C</sub> =0.5A ; I <sub>B1</sub> =-I <sub>B2</sub> =15mA			0.25	μs
		2N5661	V <sub>CC</sub> =100V ; I <sub>C</sub> =0.5A ; I <sub>B1</sub> =-I <sub>B2</sub> =25mA				
t <sub>off</sub>	Turn-off time	2N5660	V <sub>CC</sub> =100V ; I <sub>C</sub> =0.5A ; I <sub>B1</sub> =-I <sub>B2</sub> =15mA			0.85	μs
		2N5661	V <sub>CC</sub> =100V ; I <sub>C</sub> =0.5A ; I <sub>B1</sub> =-I <sub>B2</sub> =25mA				

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PACKAGE OUTLINE

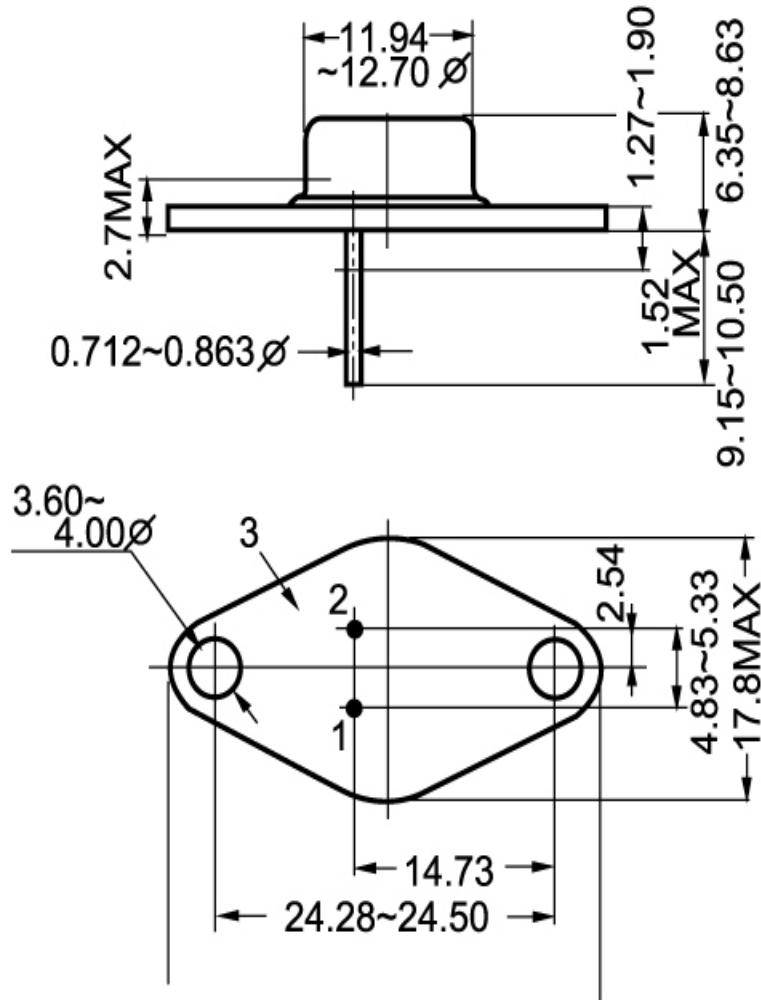


Fig.2 Outline dimensions