

## Silicon NPN Power Transistors

2SC3060

## DESCRIPTION

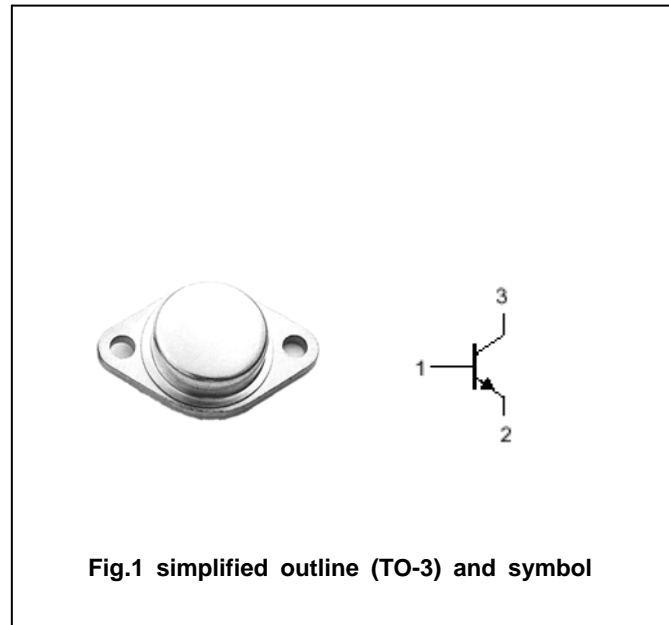
- With TO-3 package
- Ultra-fast switching
- Wide area of safe operation
- High breakdown voltage

## APPLICATIONS

- Switching regulators
- Motor controls
- Ultrasonic oscillators
- Class C and D amplifiers
- Deflection circuits

## PINNING(see Fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

ABSOLUTE MAXIMUM RATINGS( $T_C=25^\circ\text{C}$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	1200	V
$V_{CEO}$	Collector-emitter voltage	Open base	850	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		5	A
$I_{CP}$	Collector current-pulse	$PW \leq 25 \mu s, \text{Duty cycle} \leq 50\%$	8	A
$I_B$	Base current		3	A
$P_C$	Collector power dissipation	$T_C=25^\circ\text{C}$	150	W
$T_j$	Junction temperature		175	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-65~175	$^\circ\text{C}$

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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	I <sub>C</sub> =10mA ; R <sub>BE</sub> =∞	850			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =1mA; I <sub>E</sub> =0	1200			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =1mA; I <sub>C</sub> =0	7			V
V <sub>CE(sat)</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.4A			1.5	V
V <sub>BE(sat)</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.4A			2.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =1000V; I <sub>E</sub> =0			100	μ A
		V <sub>CB</sub> =1000V; I <sub>E</sub> =0, T <sub>C</sub> =100°C			1	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =6V; I <sub>C</sub> =0			100	μ A
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =2A ; V <sub>CE</sub> =5V	10		30	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V		15		MHz
C <sub>ob</sub>	Output capacitance	I <sub>E</sub> =0; V <sub>CB</sub> =10V, f=1MHz		120		pF

## Switching times

t <sub>r</sub>	Rise time	V <sub>CC</sub> =400V; I <sub>C</sub> =2A I <sub>B1</sub> =0.2A; I <sub>B2</sub> =-0.6A;			0.5	μ s
t <sub>stg</sub>	Storage time				3.5	μ s
t <sub>f</sub>	Fall time				0.3	μ s

PACKAGE OUTLINE

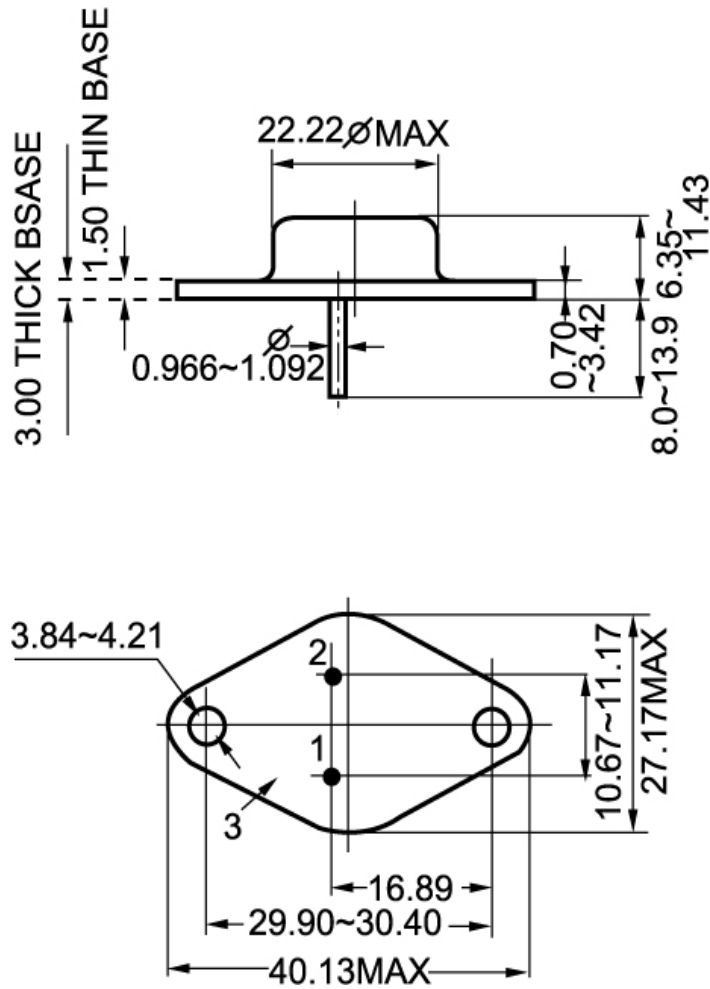


Fig.2 outline dimensions (unindicated tolerance: ±0.1mm)