

Silicon NPN Power Transistors

2SC3088

**DESCRIPTION**

- With TO-3PN package
- High breakdown voltage ( $V_{CBO} \geq 800V$ )
- Fast switching speed
- Wide area of safe operation

**APPLICATIONS**

- 500V/4A Switching Regulator Applications

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

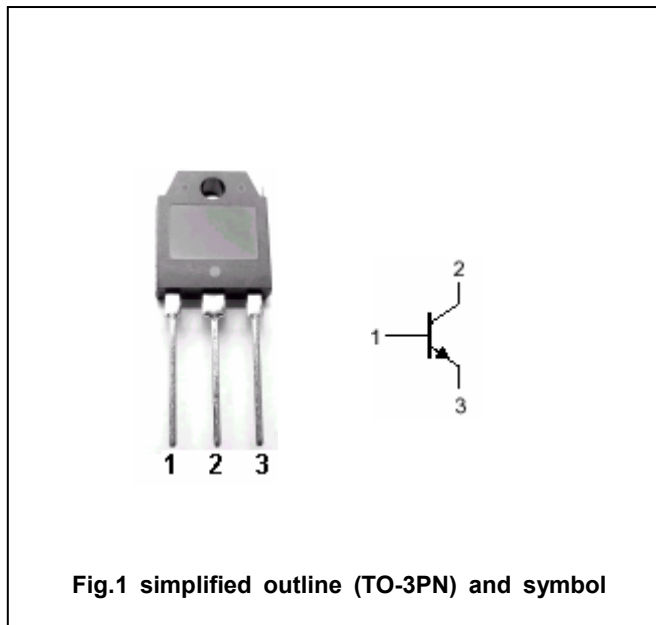


Fig.1 simplified outline (TO-3PN) and symbol

**Absolute maximum ratings ( $T_a=25^\circ C$ )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	800	V
$V_{CEO}$	Collector-emitter voltage	Open base	500	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		4	A
$I_{CP}$	Collector current-peak	$PW \leq 300\mu s, Duty\ Cycle \leq 10\%$	8	A
$I_B$	Base current		1.5	A
$P_C$	Collector power dissipation	$T_a=25^\circ C$	2.5	W
		$T_C=25^\circ C$	60	
$T_j$	Junction temperature		150	$^\circ C$
$T_{stg}$	Storage temperature		-55~150	$^\circ C$

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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> =1mA ; R <sub>BE</sub> =∞	500			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =1mA ; I <sub>E</sub> =0	800			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =1mA ; I <sub>C</sub> =0	7			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =1.5A ; I <sub>B</sub> =0.3A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =1.5A ; I <sub>B</sub> =0.3A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =500V ; I <sub>E</sub> =0			10	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V ; I <sub>C</sub> =0			10	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =0.3A ; V <sub>CE</sub> =5V	15		50	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =1.5A ; V <sub>CE</sub> =5V	8			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V ; f=1MHz		40		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.3A ; V <sub>CE</sub> =10V		18		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =2A ; I <sub>B1</sub> =-I <sub>B2</sub> =0.4 A R <sub>L</sub> =100Ω, V <sub>CC</sub> =200V			1.0	μs
t <sub>s</sub>	Storage time				3.0	μs
t <sub>f</sub>	Fall time				1.0	μs

◆ h<sub>FE-1</sub> classifications

L	M	N
15-30	20-40	30-50

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PACKAGE OUTLINE

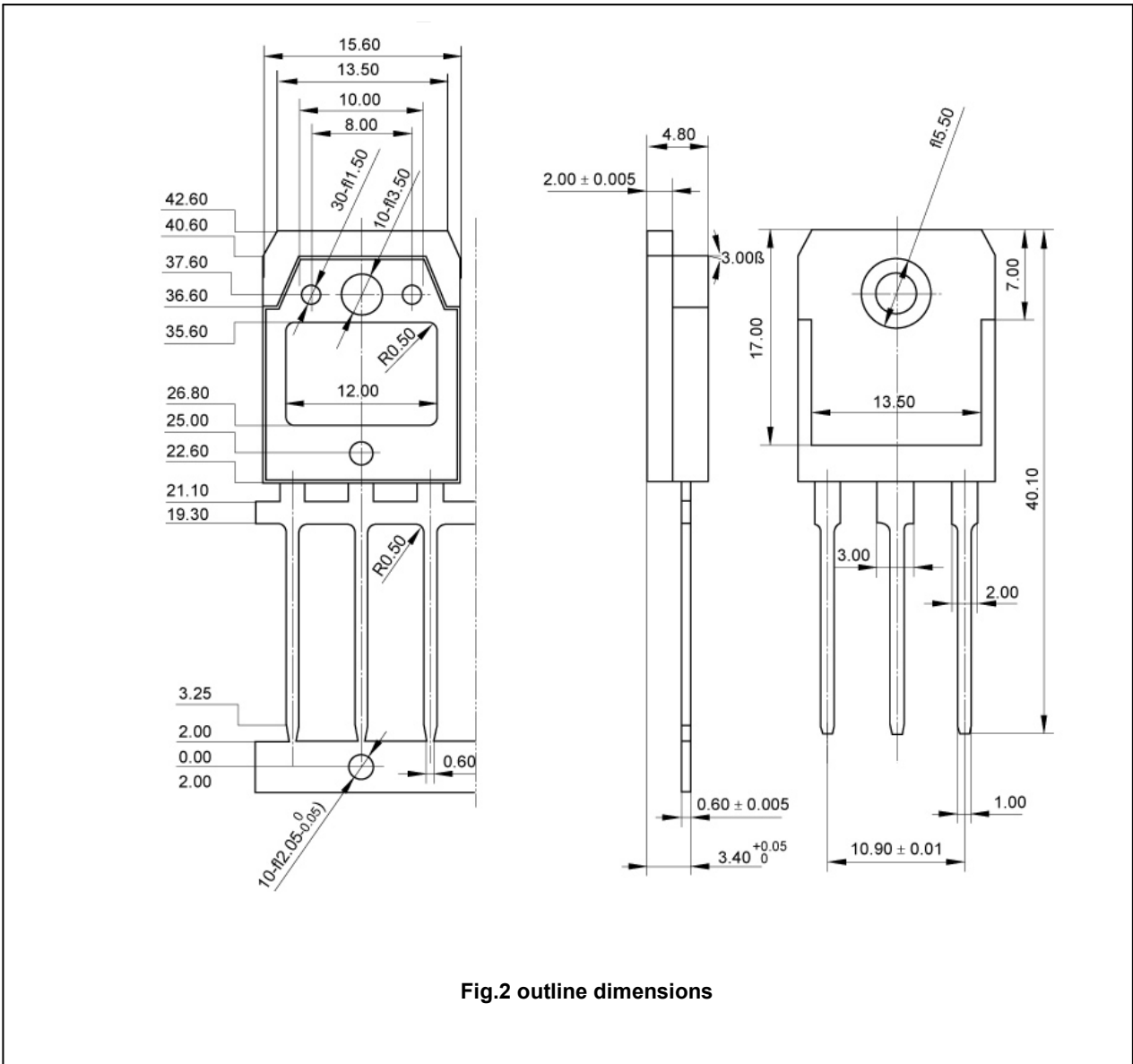


Fig.2 outline dimensions