

Silicon NPN Power Transistors

2SC3850

**DESCRIPTION**

- With TO-3PN package
- Good linearity of  $h_{FE}$
- Low collector saturation voltage

**APPLICATIONS**

- For power switching applications

**PINNING**

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

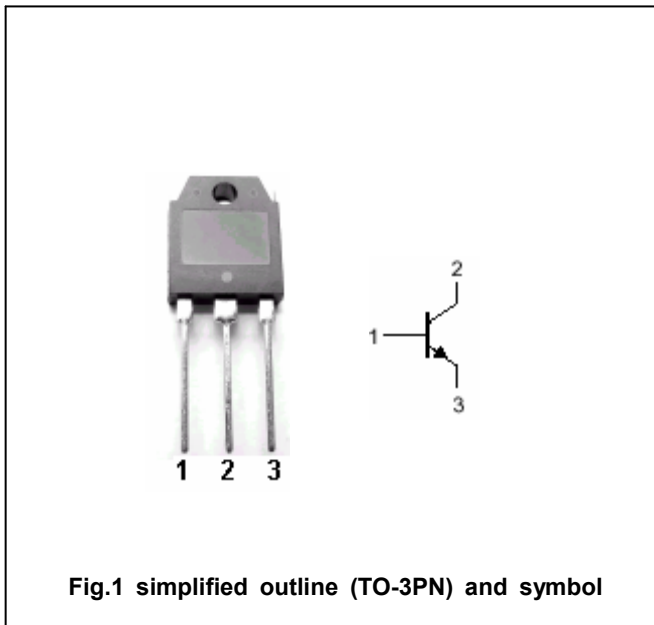


Fig.1 simplified outline (TO-3PN) and symbol

**Absolute maximum ratings( $T_a = \square$ )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	500	V
$V_{CEO}$	Collector-emitter voltage	Open base	400	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		20	A
$I_{CM}$	Collector current-peak		30	A
$I_B$	Base current		6	A
$P_C$	Collector power dissipation	$T_a = 25 \square$	2.5	W
		$T_c = 25 \square$	125	
$T_j$	Junction temperature		150	$\square$
$T_{stg}$	Storage temperature		-55~150	$\square$

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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> =0.5A ; L=25mH	400			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =10A ; I <sub>B</sub> =2A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =10A ; I <sub>B</sub> =2A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =500V ; I <sub>E</sub> =0			100	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V ; I <sub>C</sub> =0			100	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =2A ; V <sub>CE</sub> =5V	15			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =10A ; V <sub>CE</sub> =5V	10			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1A ; V <sub>CE</sub> =10V		15		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =10A I <sub>B1</sub> =-I <sub>B2</sub> =2A V <sub>CC</sub> =125V			1.0	μs
t <sub>s</sub>	Storage time				2.5	μs
t <sub>f</sub>	Fall time				1.0	μs

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PACKAGE OUTLINE

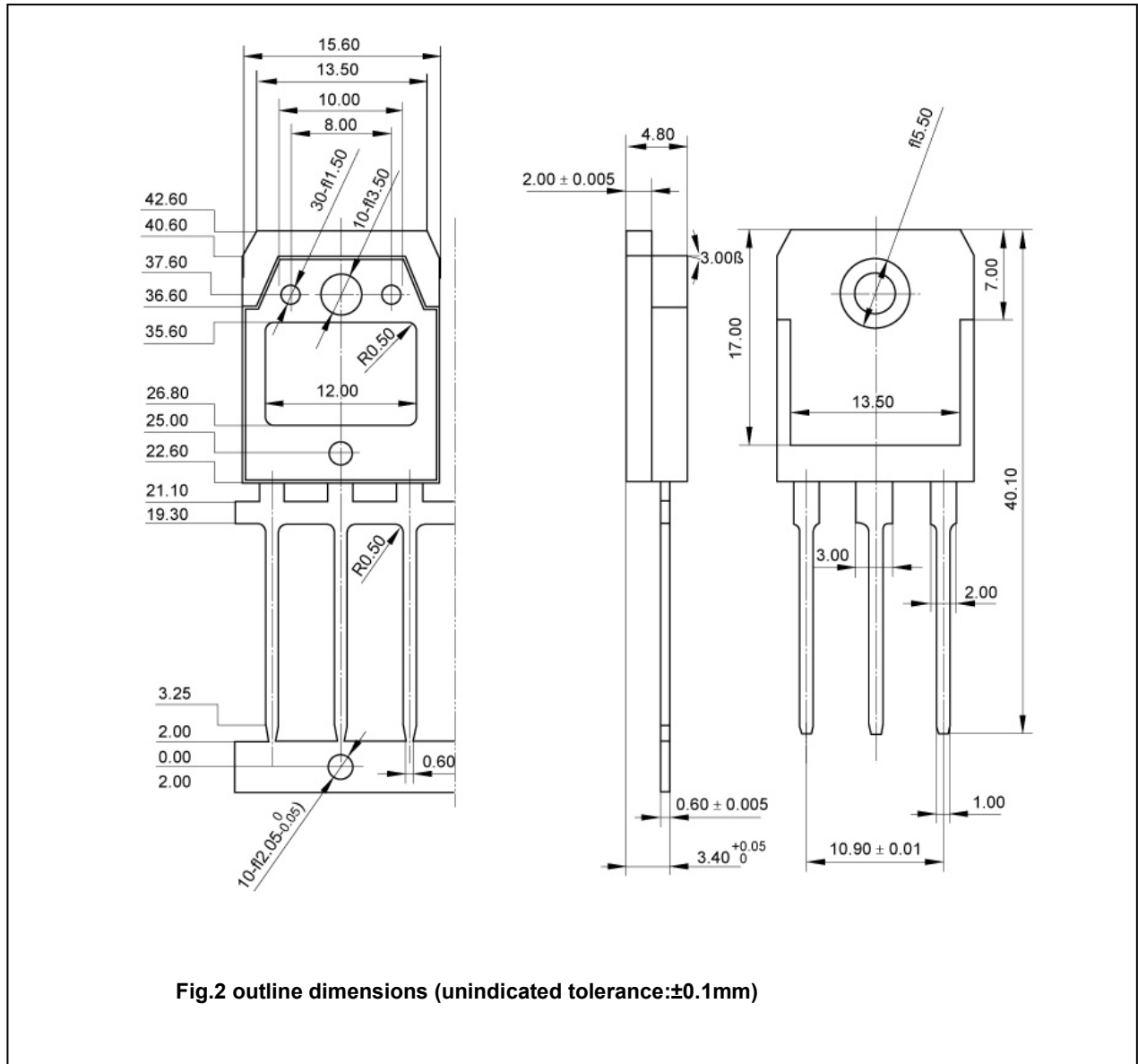


Fig.2 outline dimensions (unindicated tolerance:±0.1mm)