

Silicon NPN Power Transistors

2N5838 2N5839 2N5840

**DESCRIPTION**

- With TO-3 package
- Low collector saturation voltage
- High breakdown voltage

**APPLICATIONS**

- For use in switching power supply and other inductive switching circuits.

**PINNING**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

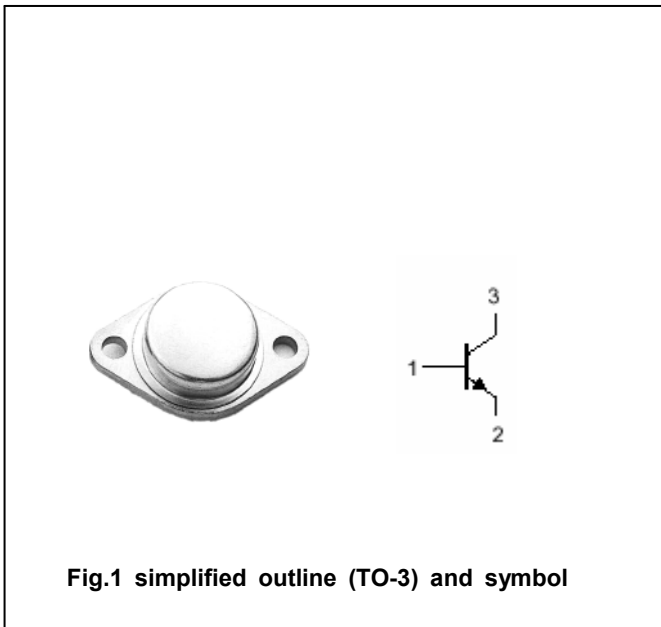


Fig.1 simplified outline (TO-3) and symbol

**Absolute maximum ratings(Ta=□)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2N5838	275	V
		2N5839	300	
		2N5840	375	
V <sub>CEO</sub>	Collector-emitter voltage	2N5838	250	V
		2N5839	275	
		2N5840	350	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	6	V
I <sub>C</sub>	Collector current		3	A
P <sub>D</sub>	Total power dissipation	T <sub>C</sub> =25□	100	W
T <sub>j</sub>	Junction temperature		150	□
T <sub>stg</sub>	Storage temperature		-65~200	□

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.25	□/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	2N5838	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0	250			V
		2N5839		275			
		2N5840		350			
V <sub>CEsat</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =2A; I <sub>B</sub> =0.4A			0.8	V
V <sub>BEsat</sub>	Base-emitter saturation voltage		I <sub>C</sub> =2A; I <sub>B</sub> =0.4A			1.5	V
I <sub>CBO</sub>	Collector cut-off current		V <sub>CB</sub> =Rated V <sub>CBO</sub> ; I <sub>E</sub> =0			1.0	mA
I <sub>CEV</sub>	Collector cut-off current		V <sub>CE</sub> = Rated V <sub>CEO</sub> ; V <sub>BE(off)</sub> =1.5V			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =5V; I <sub>C</sub> =0			1.0	mA
h <sub>FE</sub>	DC current gain	2N5838	I <sub>C</sub> =3A ; V <sub>CE</sub> =3V	8		40	
		2N5839/5840	I <sub>C</sub> =2A ; V <sub>CE</sub> =3V	10		50	
f <sub>T</sub>	Transition frequency		I <sub>C</sub> =1A ; V <sub>CE</sub> =10V; f=1.0MHz	5			MHz

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PACKAGE OUTLINE

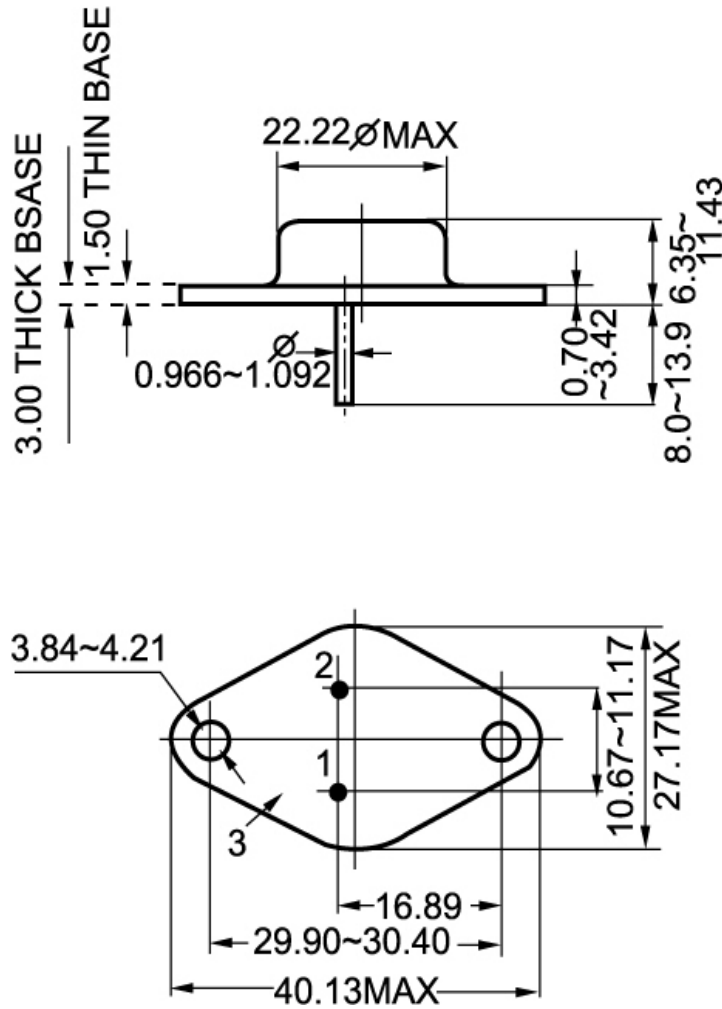


Fig.2 outline dimensions (unindicated tolerance:±0.1mm)