

**Silicon NPN Power Transistors**

**MJ16012**

**DESCRIPTION**

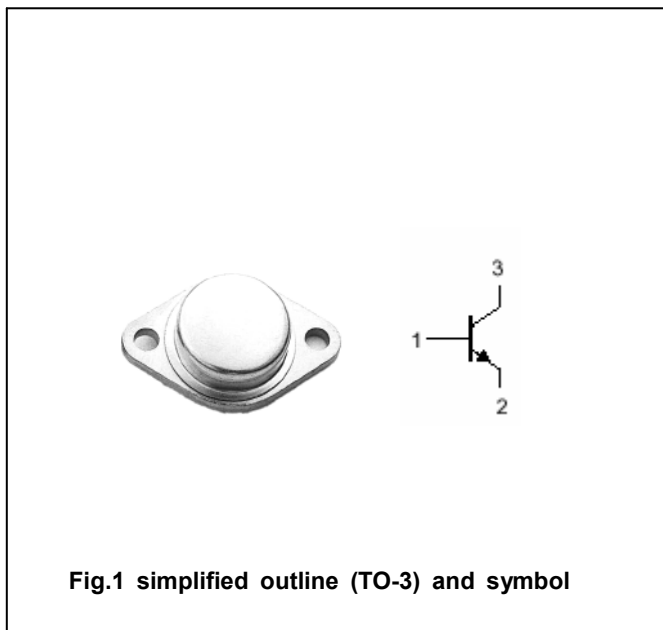
- With TO-3 package
- High voltage ,high speed

**APPLICATIONS**

- Switching Regulators
- Inverters
- Solenoids
- Relay Drivers
- Motor Controls
- Deflection Circuits

**PINNING (see Fig.2)**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector



**ABSOLUTE MAXIMUM RATINGS(T<sub>c</sub>=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	850	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	450	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	6	V
I <sub>C</sub>	Collector current		15	A
I <sub>CM</sub>	Collector current-peak		20	A
I <sub>B</sub>	Base current		10	A
I <sub>BM</sub>	Base current-peak		15	A
P <sub>D</sub>	Total Power Dissipation Derate above 25°C	T <sub>c</sub> =25°C	175 1.0	W W/°C
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~200	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.0	°C/W

## Silicon NPN Power Transistors

## MJ16012

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEQ(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0	450			V
V <sub>CE(sat)-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =5A; I <sub>B</sub> =0.5A			2.5	V
V <sub>CE(sat)-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =10A ; I <sub>B</sub> =1.0A T <sub>C</sub> =100 °C			3.0 3.0	V
V <sub>BE(sat)</sub>	Base-emitter saturation voltage	I <sub>C</sub> =10A ; I <sub>B</sub> =1.0A T <sub>C</sub> =100 °C			1.5 1.5	V
I <sub>CER</sub>	Collector cut-off current	V <sub>CE</sub> =850V; R <sub>BE</sub> =50Ω; T <sub>C</sub> =100 °C			2.5	mA
I <sub>CEV</sub>	Collector cut-off current	V <sub>CE</sub> =850V; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =100 °C			0.25 1.5	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =6V; I <sub>C</sub> =0			10	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =15A ; V <sub>CE</sub> =5V	7			
C <sub>OB</sub>	Output capacitance	V <sub>CB</sub> =10V, I <sub>E</sub> =0; f=1.0KHz			400	pF

Switching times resistive load

t <sub>d</sub>	Delay time	I <sub>C</sub> =10A ; V <sub>CC</sub> =250V I <sub>B1</sub> =1.0A ; I <sub>B2</sub> =2.0A PW=30μs; R <sub>B2</sub> =1.6Ω Duty Cycle≤2.0%		20		ns
t <sub>r</sub>	Rise time			200		ns
t <sub>s</sub>	Storage time			900		ns
t <sub>f</sub>	Fall time			150		ns

PACKAGE OUTLINE

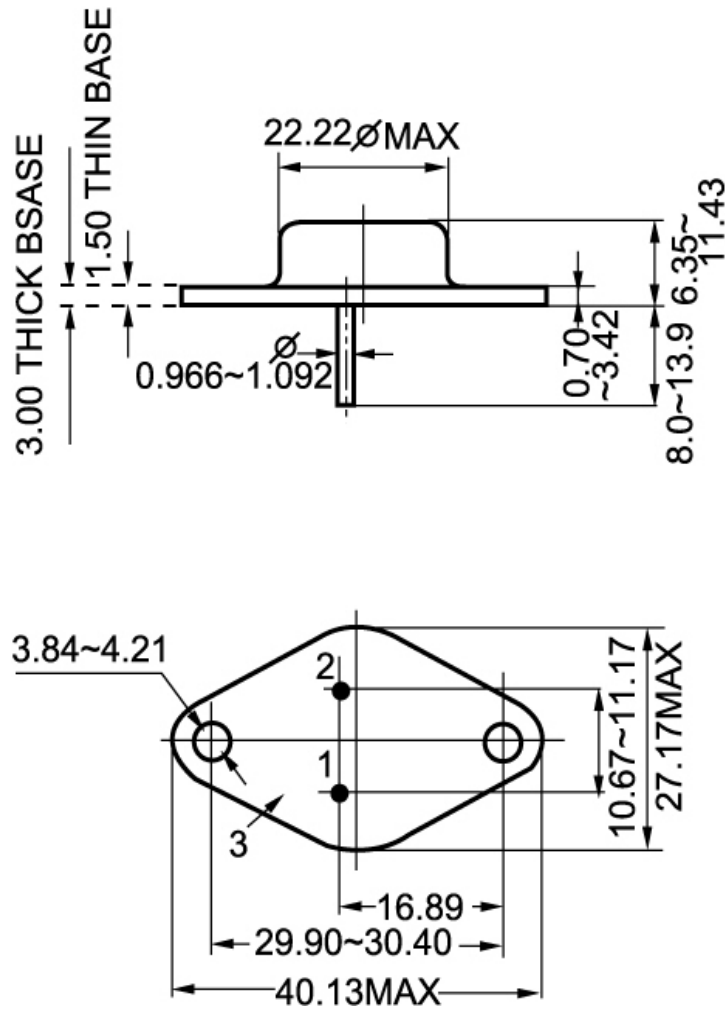


Fig.2 outline dimensions (unindicated tolerance:±0.10mm)