



# Silicon NPN Power Transistors

# MJ15022 MJ15024

### DESCRIPTION

- With TO-3 package
- Complement to type MJ15023; MJ15025
- Excellent safe operating area
- High DC current gain  
 $h_{FE} = 15 \text{ (Min) @ } I_c = 8 \text{ Adc}$

### APPLICATIONS

- Designed for high power audio, disk head positioners and other linear applications

### PINNING(see Fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

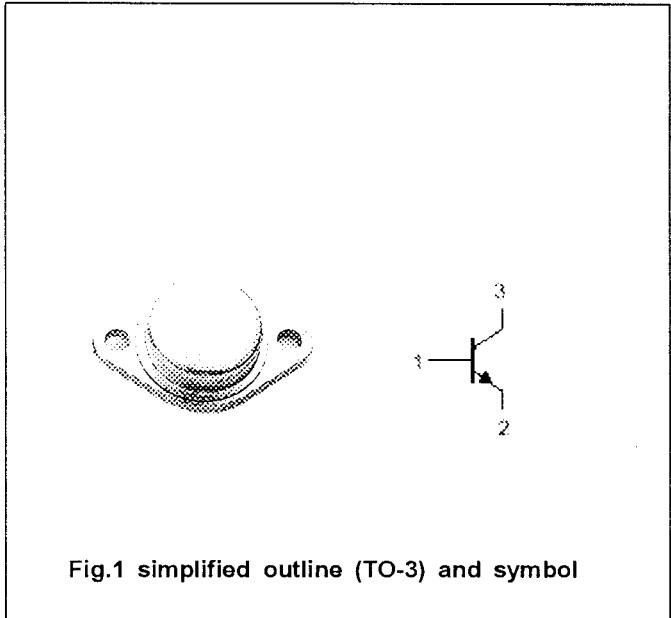


Fig.1 simplified outline (TO-3) and symbol

### Absolute maximum ratings(Ta=°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CB0</sub>	Collector-base voltage	MJ15022	350	V
		MJ15024	400	
V <sub>CEO</sub>	Collector-emitter voltage	MJ15022	200	V
		MJ15024	250	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>c</sub>	Collector current		16	A
I <sub>CM</sub>	Collector current-peak		30	A
I <sub>B</sub>	Base current		5	A
P <sub>D</sub>	Total power dissipation	T <sub>c</sub> =25°C	250	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~200	°C

### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>thj-c</sub>	Thermal resistance junction to case	0.70	°C/W

**Silicon NPN Power Transistors****MJ15022 MJ15024****CHARACTERISTICS****T<sub>j</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-emitter sustaining voltage	MJ15022	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0			V
		MJ15024				
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =8A ; I <sub>B</sub> =0.8A			1.4	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =16A ; I <sub>B</sub> =3.2A			4.0	V
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =8A ; V <sub>CE</sub> =4V			2.2	V
I <sub>CEO</sub>	Collector cut-off current	MJ15022			0.5	mA
		MJ15024				
I <sub>CEX</sub>	Collector cut-off current	MJ15022			0.25	mA
		MJ15024				
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V ; I <sub>C</sub> =0			0.5	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =8A ; V <sub>CE</sub> =4V	15		60	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =16A ; V <sub>CE</sub> =4V	5			
I <sub>s/b</sub>	Second breakdown collector current with base forward biased	V <sub>CE</sub> =50Vdc,t=0.5 s, V <sub>CE</sub> =80Vdc,t=0.5 s,Nonrepetitive	5.0 2.0			A
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V ; f=1.0MHz			500	pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1A ; V <sub>CE</sub> =10V ; f=1.0MHz	4			MHz



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PACKAGE OUTLINE

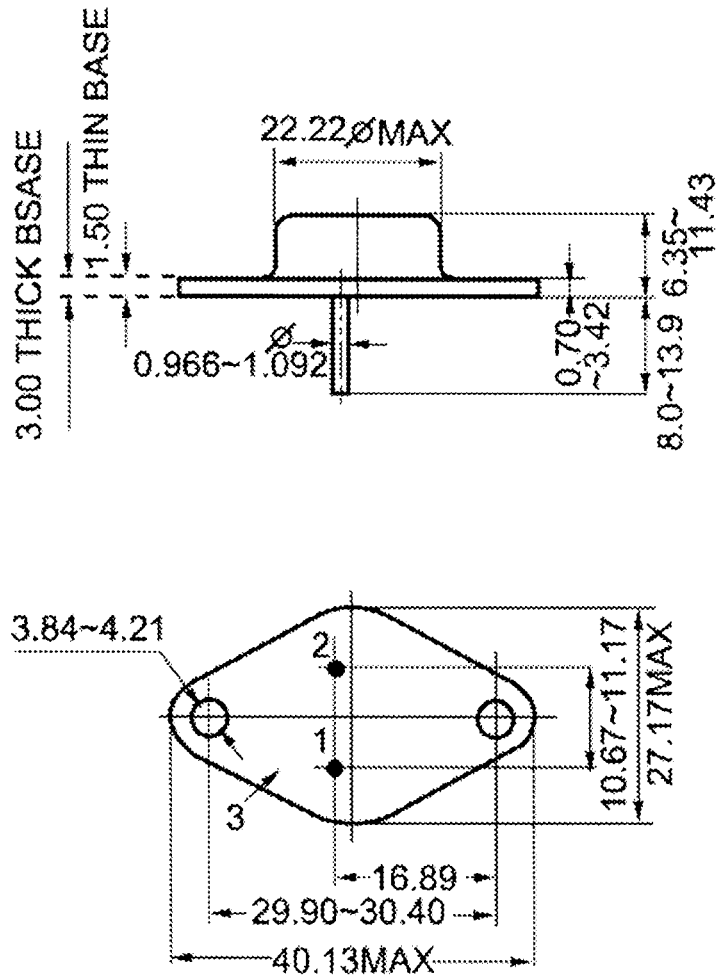


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1\text{mm}$ )