



## Silicon NPN Power Transistors

## MJ15022 MJ15024

### DESCRIPTION

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

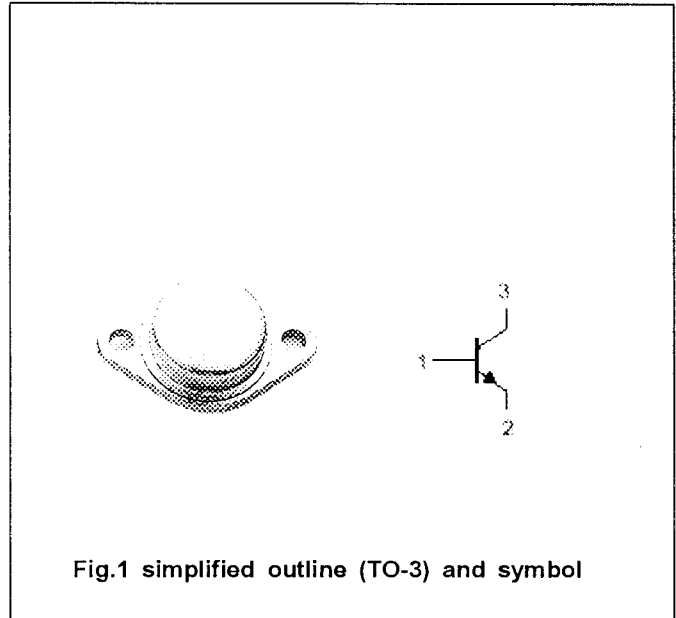


Fig.1 simplified outline (TO-3) and symbol

### Absolute maximum ratings( $T_a = ^\circ\text{C}$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	MJ15022	350	V
		MJ15024	400	
$V_{CEO}$	Collector-emitter voltage	MJ15022	200	V
		MJ15024	250	
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current		16	A
$I_{CM}$	Collector current-peak		30	A
$I_B$	Base current		5	A
$P_D$	Total power dissipation	$T_c = 25^\circ\text{C}$	250	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-65~200	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{thj-c}$	Thermal resistance junction to case	0.70	$^\circ\text{C/W}$

**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				mA
		MJ15024				
I <sub>CEX</sub>	Collector cut-off current	MJ15022				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

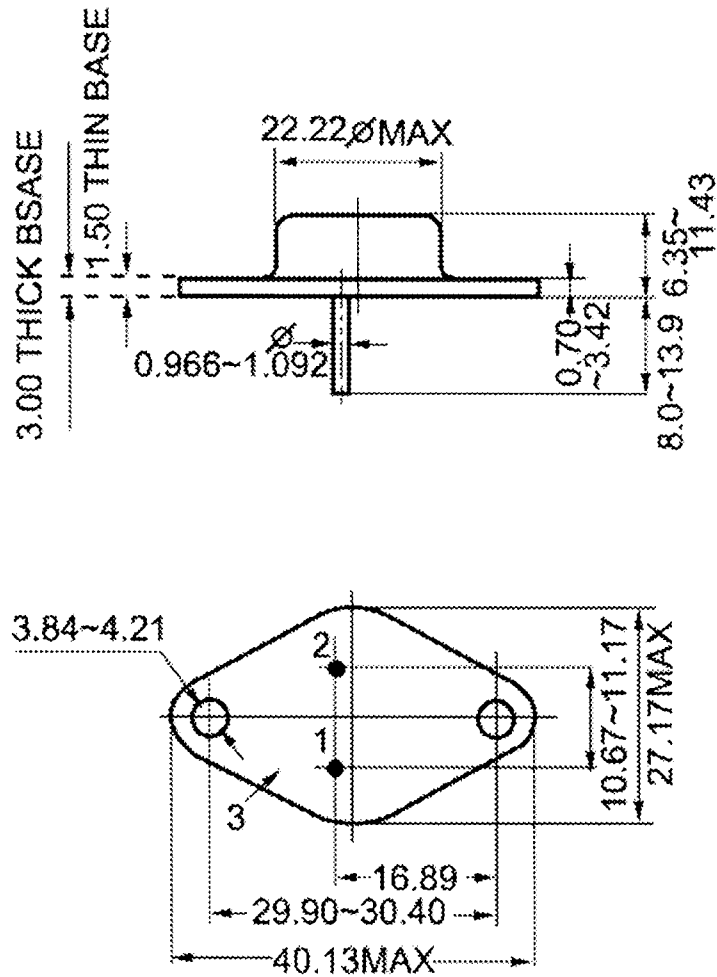


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1\text{mm}$ )