

## Silicon NPN Power Transistors

MJ15003

## DESCRIPTION

- With TO-3 package
- Complement to type MJ15004
- Excellent safe operating area

## APPLICATIONS

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

## PINNING(see Fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

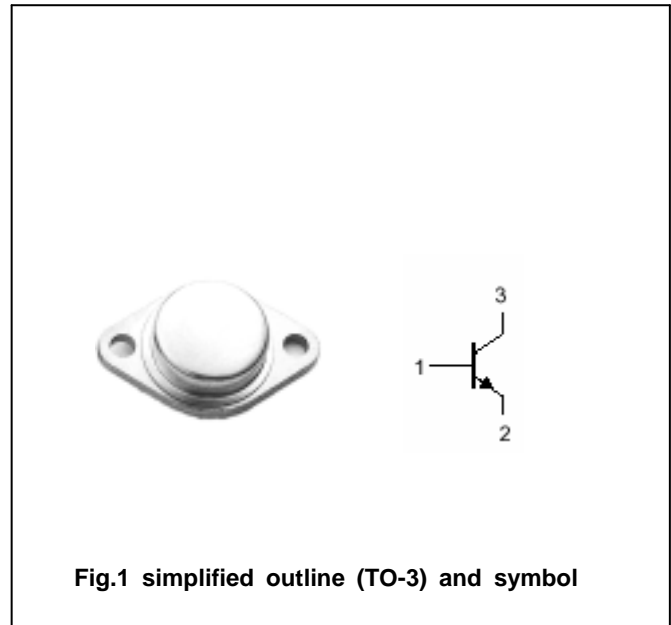


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings( $T_a =$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	140	V
$V_{CEO}$	Collector-emitter voltage	Open base	140	V
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current		20	A
$I_B$	Base current		5	A
$I_E$	Emitter current		-25	A
$P_D$	Total power dissipation	$T_C=25$	250	W
$T_j$	Junction temperature		200	
$T_{stg}$	Storage temperature		-65~200	

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal resistance junction to case	0.7	/W

## Silicon NPN Power Transistors

## MJ15003

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.2A ; I <sub>B</sub> =0	140			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =5A; I <sub>B</sub> =0.5A			1.0	V
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =5A ; V <sub>CE</sub> =2V			2.0	V
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =140V; I <sub>B</sub> =0			0.25	mA
I <sub>CEX</sub>	Collector cut-off current	V <sub>CE</sub> =140V; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =150			0.1 2.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			0.1	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =5A ; V <sub>CE</sub> =2V	25		150	
I <sub>S/b</sub>	Second breakdown collector current With base forward biased	V <sub>CE</sub> =50Vdc,t=1 s, Nonrepetitive	5			A
		V <sub>CE</sub> =100Vdc,t=1 s, Nonrepetitive	1			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V;f=1.0MHz			1000	pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V;f=0.5MHz	2			MHz

PACKAGE OUTLINE

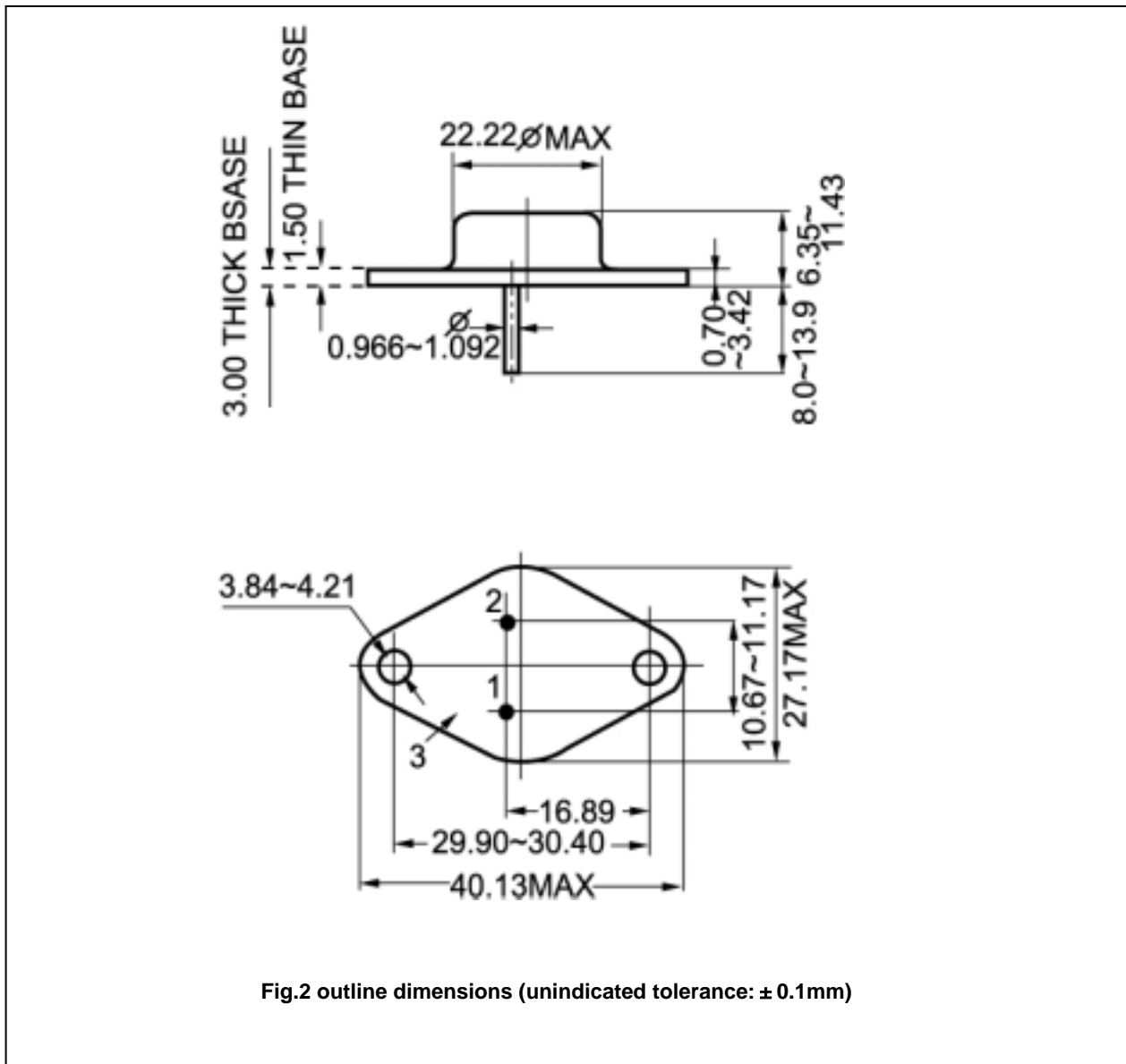


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1\text{mm}$ )