

Silicon NPN Power Transistors

MJ15022 MJ15024

DESCRIPTION

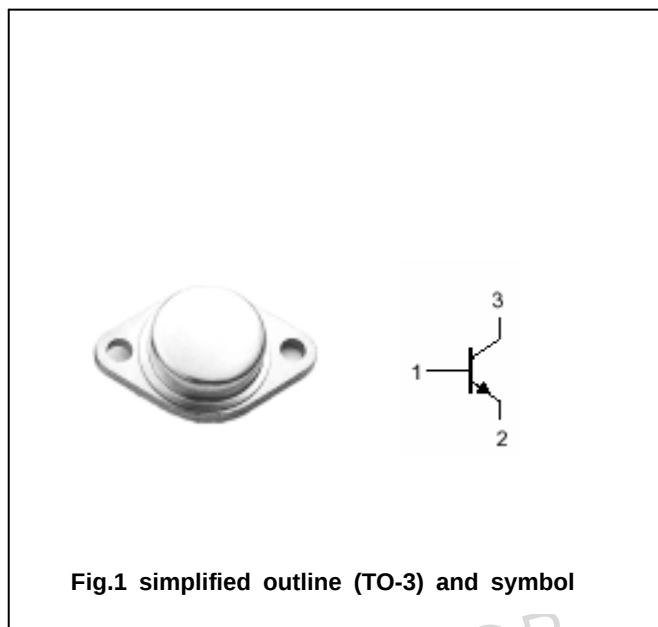
- With TO-3 package
 - Complement to type MJ15023; MJ15025
 - Excellent safe operating area
 - High DC current gain
- $h_{FE} = 15 \text{ (Min) @ } I_C = 8 \text{ A dc}$

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

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	350	V
			400	
V_{CEO}	Collector-emitter voltage	Open base	200	V
			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	$T_C = 25$	250	W
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-65~200	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal resistance junction to case	0.70	/W

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CHARACTERISTICS

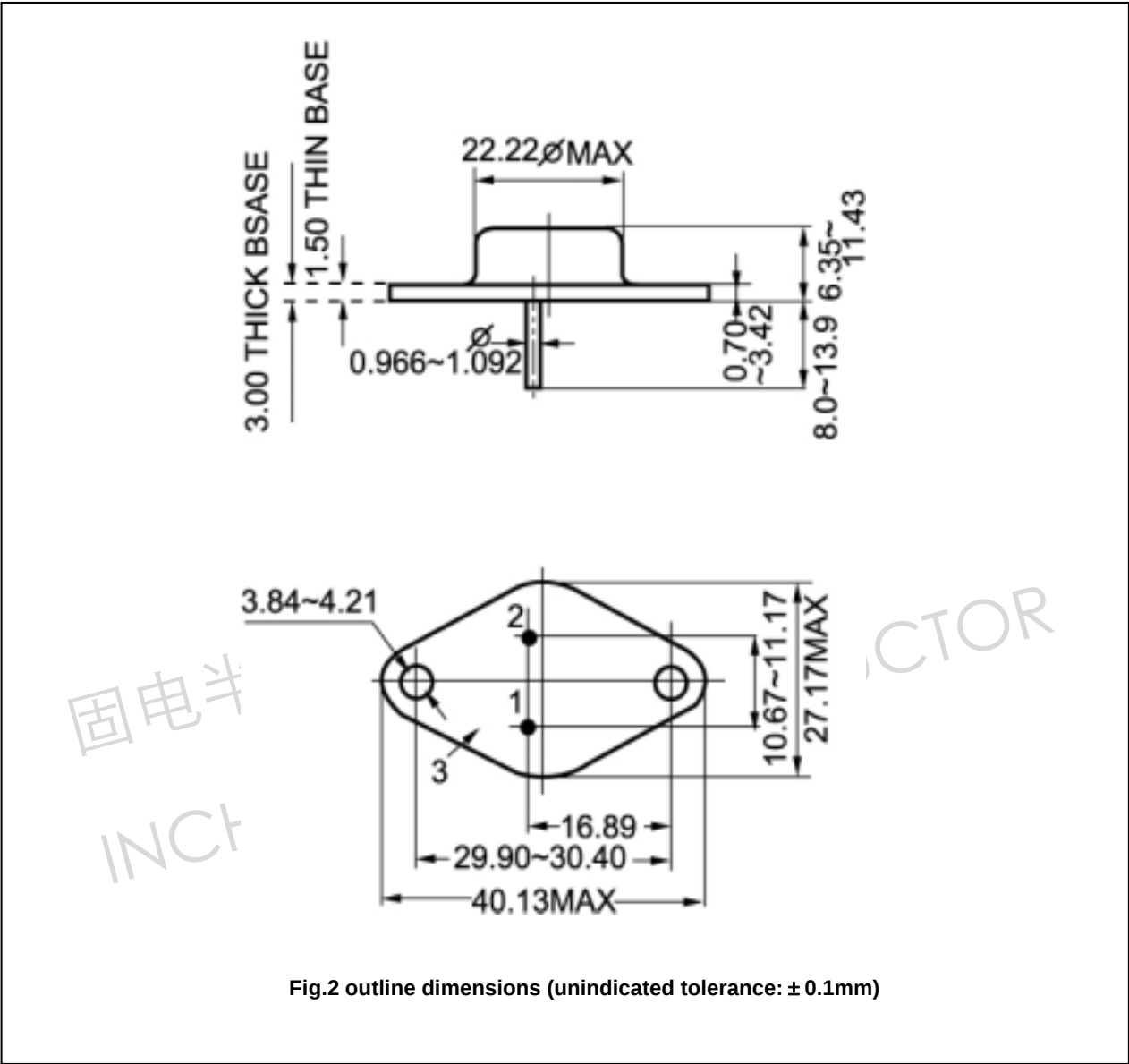
Tj=25 unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-emitter sustaining voltage	MJ15022	$I_C=0.1A ; I_B=0$	200			V
		MJ15024		250			
$V_{CEsat-1}$	Collector-emitter saturation voltage		$I_C=8A ; I_B=0.8A$			1.4	V
$V_{CEsat-2}$	Collector-emitter saturation voltage		$I_C=16A ; I_B=3.2A$			4.0	V
V_{BE}	Base-emitter on voltage		$I_C=8A ; V_{CE}=4V$			2.2	V
I_{CEO}	Collector cut-off current	MJ15022	$V_{CE}=150V ; I_B=0$			0.5	mA
		MJ15024	$V_{CE}=200V ; I_B=0$				
I_{CEX}	Collector cut-off current	MJ15022	$V_{CE}=200V ; V_{BE(off)}=1.5V$			0.25	mA
		MJ15024	$V_{CE}=250V ; V_{BE(off)}=1.5V$				
I_{EBO}	Emitter cut-off current		$V_{EB}=5V ; I_C=0$			0.5	mA
h_{FE-1}	DC current gain		$I_C=8A ; V_{CE}=4V$	15		60	
h_{FE-2}	DC current gain		$I_C=16A ; V_{CE}=4V$	5			
$I_{S/b}$	Second breakdown collector current with base forward biased		$V_{CE}=50Vdc, t=0.5 s,$ $V_{CE}=80Vdc, t=0.5 s, Nonrepetitive$	5.0 2.0			A
C_{OB}	Output capacitance		$I_E=0 ; V_{CB}=10V; f=1.0MHz$			500	pF
f_T	Transition frequency		$I_C=1A ; V_{CE}=10V; f=1.0MHz$	4			MHz

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PACKAGE OUTLINE



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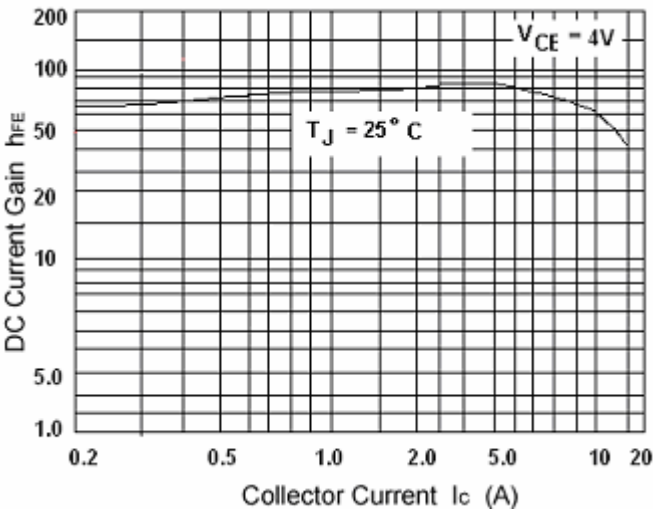


Fig.3 DC current Gain

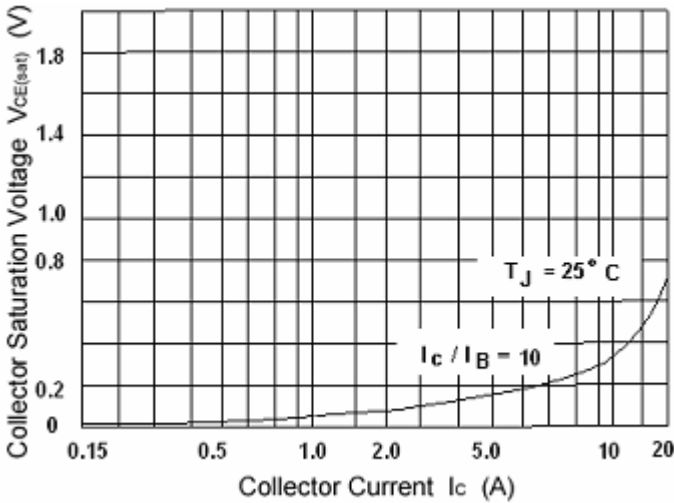


Fig.4 Collector-Emitter Saturation Voltage

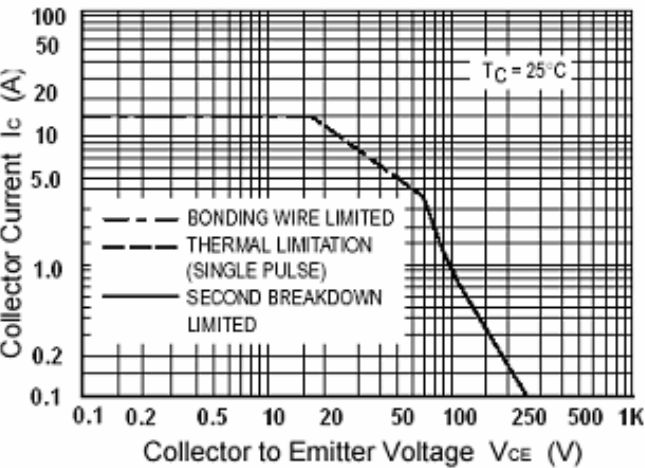


Fig.5 Safe Operating Area