

Silicon NPN Power Transistors

MJ15015

DESCRIPTION

- With TO-3 package
- Complement to type MJ15016
- Excellent safe operating area

APPLICATIONS

- For high power audio ,stepping motor and other linear applications
- Relay or solenoid drivers
- DC-DC converters inverters

PINNING(see Fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

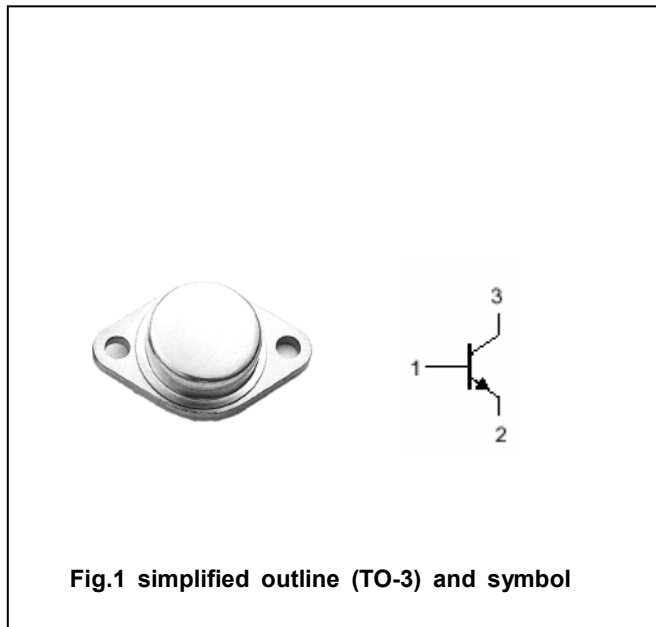


Fig.1 simplified outline (TO-3) and symbol

ABSOLUTE MAXIMUM RATINGS(T_C=25 °C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	Open emitter	200	V
V _{CEO}	Collector-emitter voltage	Open base	120	V
V _{EBO}	Emitter-base voltage	Open collector	7	V
I _C	Collector current		15	A
I _B	Base current		7	A
P _C	Collector power dissipation	T _C =25 °C	180	W
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-65~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal resistance junction to case	0.98	°C/W

Silicon NPN Power Transistors

MJ15015

CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE0(SUS)}	Collector-emitter sustaining voltage	I _C =0.2A; I _B =0	120			V
V _{CE(sat)-1}	Collector-emitter saturation voltage	I _C =4A; I _B =0.4A			1.1	V
V _{CE(sat)-2}	Collector-emitter saturation voltage	I _C =10A; I _B =3.3A			3.0	V
V _{CE(sat)-3}	Collector-emitter saturation voltage	I _C =15A; I _B =7.0A			5.0	V
V _{BE}	Base-emitter on voltage	I _C =4A; V _{CE} =4V			1.8	V
I _{CEO}	Collector cut-off current	V _{CE} =60V; V _{BE(off)} =0			0.1	mA
I _{CEV}	Collector cut-off current	V _{CE} =Rated Value; V _{BE(off)} =1.5V T _C =150°C			1.0 6.0	mA
I _{EBO}	Emitter cut-off current	V _{EB} =7V; I _C =0			0.2	mA
h _{FE-1}	DC current gain	I _C =4A; V _{CE} =2V	10		70	
h _{FE-2}	DC current gain	I _C =4A; V _{CE} =4V	20		70	
h _{FE-3}	DC current gain	I _C =10A; V _{CE} =4V	5			
I _{s/b}	Second breakdown collector current With base forward biased	V _{CE} =60Vdc, t=0.5 s, Nonrepetitive	3.0			A
C _{OB}	Output capacitance	I _E =0; V _{CB} =10V; f=1.0MHz	60		600	pF
f _T	Transition frequency	I _C =1A; V _{CE} =4V; f=1.0MHz	0.8			MHz

Silicon NPN Power Transistors

MJ15015

PACKAGE OUTLINE

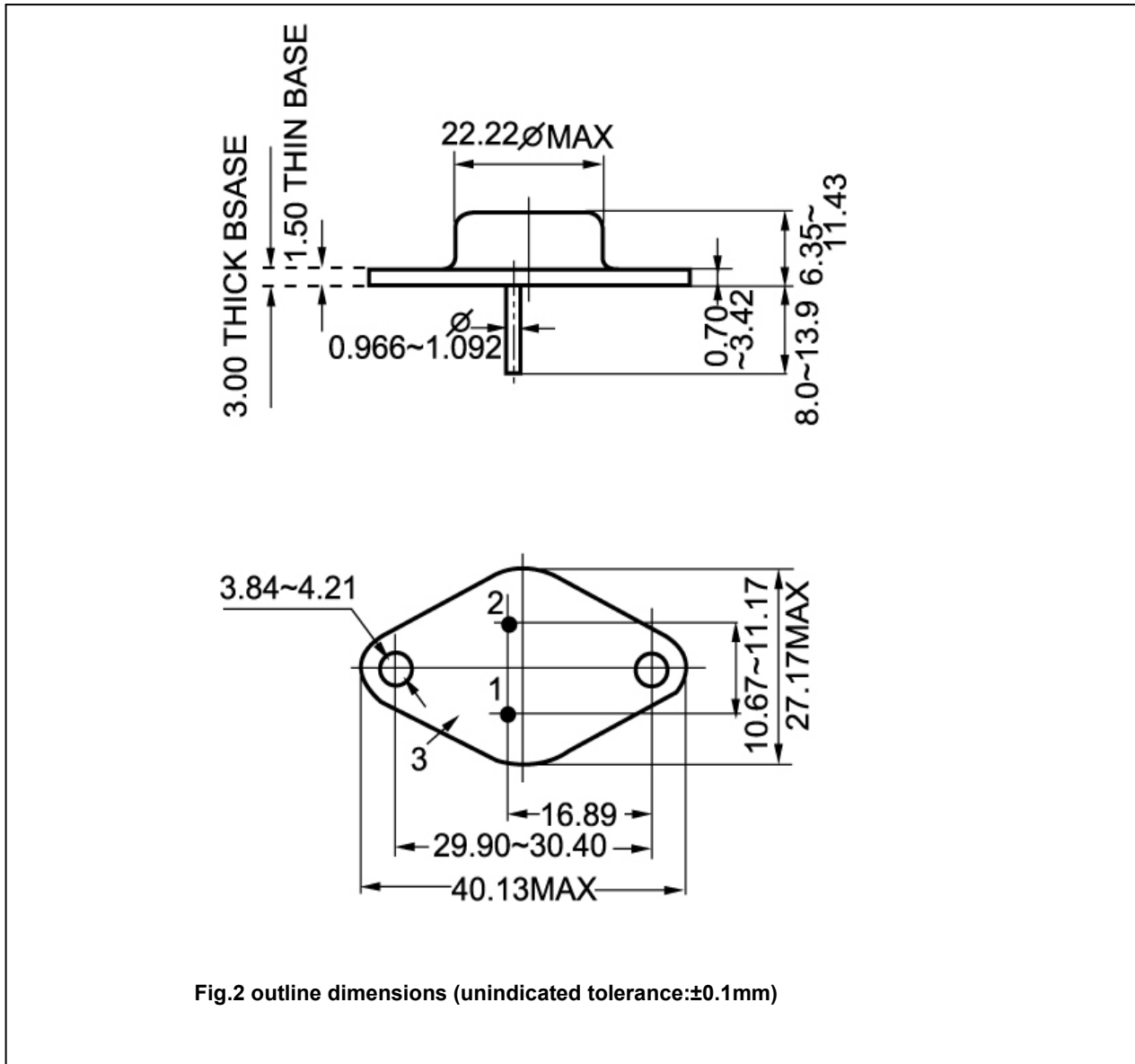


Fig.2 outline dimensions (unindicated tolerance:±0.1mm)

Silicon NPN Power Transistors

MJ15015

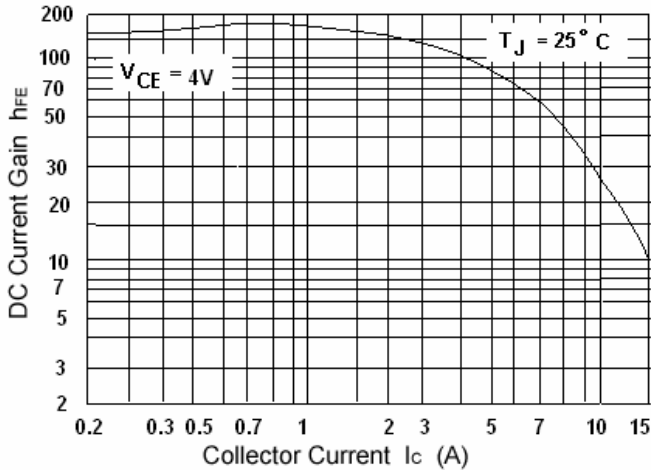


Fig.3 DC current Gain

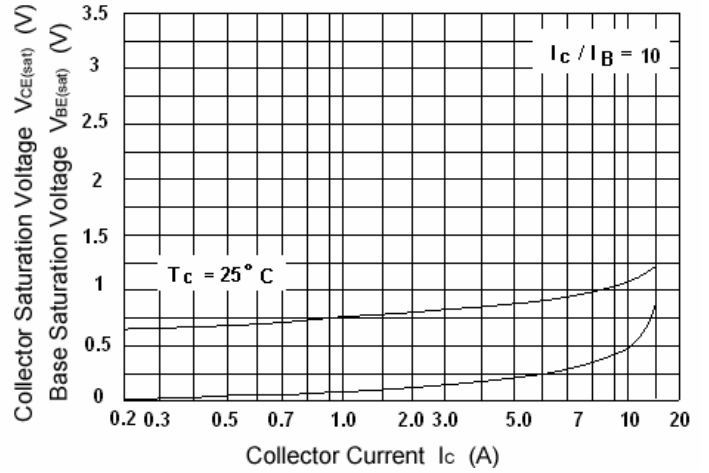


Fig.4 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

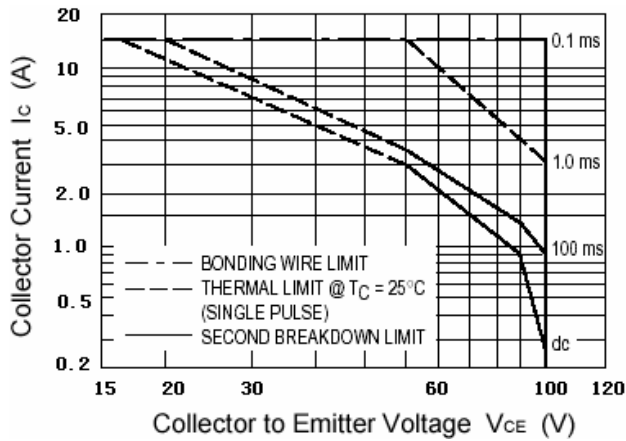


Fig.5 Safe Operating Area