

Silicon NPN Power Transistors

BUX39

DESCRIPTION

- With TO-3 package
- High current ,high speed

APPLICATIONS

- For switching amplifiers,power gates, switching regulators,switching circuits converters,inverters and control circuits

PINNING(see fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

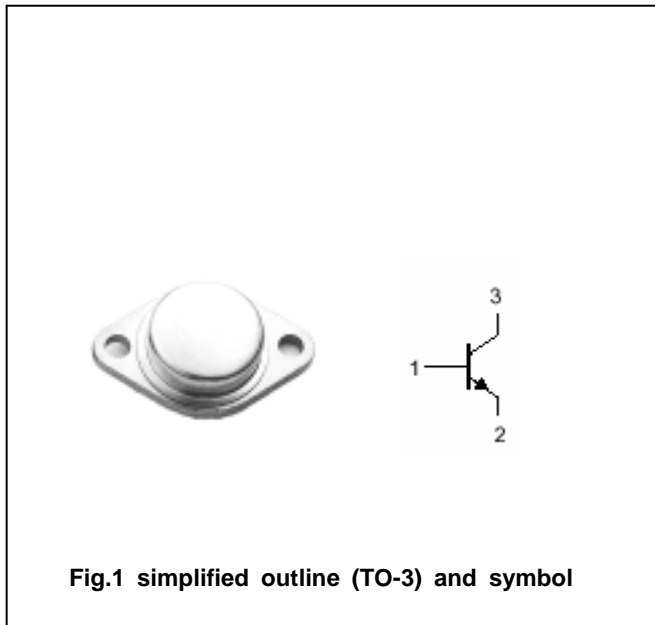


Fig.1 simplified outline (TO-3) and symbol

ABSOLUTE MAXIMUM RATINGS(Ta=25 )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	120	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	90	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		30	A
I <sub>CM</sub>	Collector current-peak		40	A
I <sub>B</sub>	Base current		6	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25	120	W
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-65~200	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.46	/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.2A; I <sub>B</sub> =0; L=25mH	90			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =50mA; I <sub>C</sub> =0	7			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =12 A; I <sub>B</sub> =1.2 A		0.7	1.2	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =20 A; I <sub>B</sub> =2.5 A		1.25	1.6	V
V <sub>BEsat</sub>	Emitter-base saturation voltage	I <sub>C</sub> =20 A; I <sub>B</sub> =2.5 A		2.1	2.5	V
I <sub>CEX</sub>	Collector cut-off current	V <sub>CE</sub> =120V; V <sub>BE</sub> =-1.5V T <sub>C</sub> =125			1.0 5.0	mA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =70V; I <sub>E</sub> =0			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			1.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =12A ; V <sub>CE</sub> =4V	15		45	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =20A ; V <sub>CE</sub> =4V	8			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1A ; V <sub>CE</sub> =15V	8			MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =20A ; I <sub>B1</sub> =-I <sub>B2</sub> =-2.5A V <sub>CC</sub> =30V		0.80	1.5	μs
t <sub>s</sub>	Storage time			0.55	1.0	μs
t <sub>f</sub>	Fall time			0.15	0.3	μs

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PACKAGE OUTLINE

