

# isc Silicon NPN Power Transistor

# BUX39

## DESCRIPTION

- Low Collector Saturation Voltage-
- High Switching Speed
- High Current Current Capability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

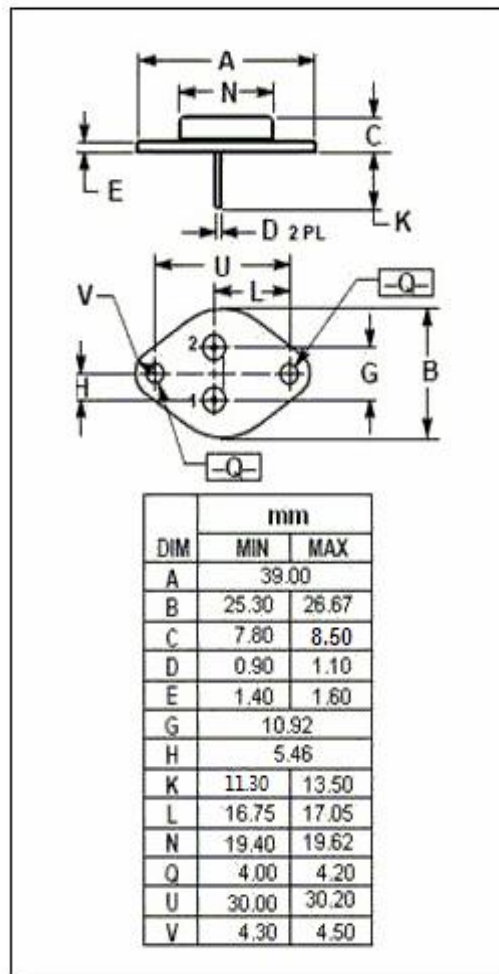
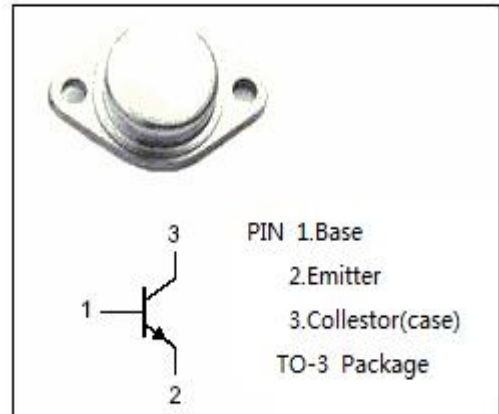
- Designed for switching-control amplifiers, power gates, switching regulators, power switching circuits converters, inverters and control circuits.

## Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	120	V
V <sub>CEX</sub>	Collector-Emitter Voltage V <sub>BE</sub> = -1.5V	120	V
V <sub>CER</sub>	Collector-Emitter Voltage R <sub>BE</sub> = 100 Ω	110	V
V <sub>CEO</sub>	Collector-Emitter Voltage	90	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current-Continuous	30	A
I <sub>CM</sub>	Collector Current-Peak	40	A
I <sub>B</sub>	Base Current-Continuous	6	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	120	W
T <sub>J</sub>	Junction Temperature	200	°C
T <sub>stg</sub>	Storage Temperature Range	-65~200	°C

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	1.46	°C/W



**isc Silicon NPN Power Transistor****BUX39****ELECTRICAL CHARACTERISTICS**T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> =50mA; I <sub>B</sub> = 0	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>CE(sat)</sub> -1	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 12A; I <sub>B</sub> = 1.2A			1.2	V
V <sub>CE(sat)</sub> -2	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 20A ;I <sub>B</sub> = 2.5A			1.6	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 20A ;I <sub>B</sub> = 2.5A			2.5	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 70V; I <sub>B</sub> = 0			1.0	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 120V; I <sub>E</sub> = 0 V <sub>CB</sub> = 120V; I <sub>E</sub> = 0; T <sub>C</sub> =125°C			1.0 5.0	mA
I <sub>EBO</sub>	Emitter Cutoff 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			

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