

**isc Silicon NPN Power Transistor**
**BUX12**
**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**

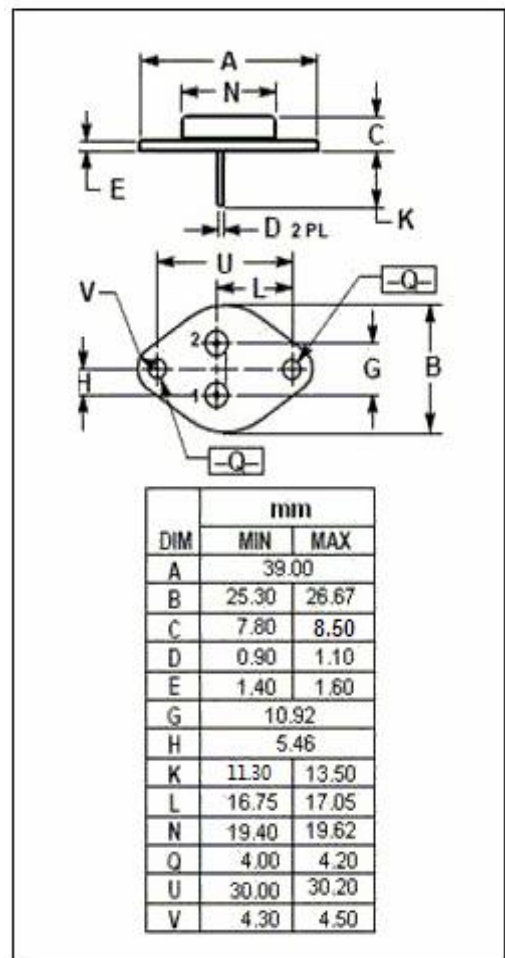
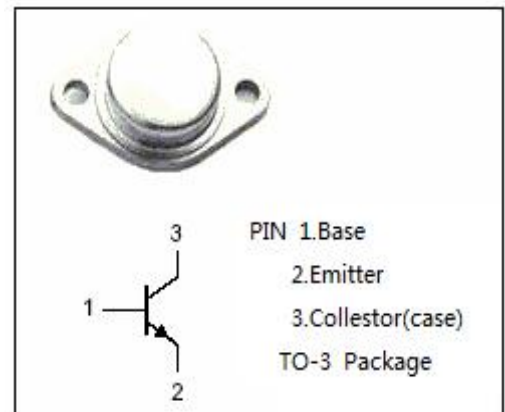
- Power switching circuits
- Motor control

**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	300	V
V <sub>CEX</sub>	Collector-Emitter Voltage V <sub>BE</sub> = -1.5V	300	V
V <sub>CEO</sub>	Collector-Emitter Voltage	250	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current-Continuous	20	A
I <sub>CM</sub>	Collector Current-Peak	25	A
I <sub>B</sub>	Base Current-Continuous	4	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>C</sub> =25°C	150	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	1.17	°C/W



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**ELECTRICAL CHARACTERISTICS**

 T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA; I <sub>B</sub> = 0	250			V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 5A; I <sub>B</sub> = 0.5A			1.0	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10A ;I <sub>B</sub> = 1.25A			1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 10A ;I <sub>B</sub> = 1.25A			1.5	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 200V; I <sub>B</sub> = 0			1.5	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 300V; I <sub>E</sub> = 0 V <sub>CB</sub> = 300V; I <sub>E</sub> = 0; T <sub>C</sub> =125°C			1.5 6.0	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> = 5A ; V <sub>CE</sub> = 4V	20		60	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 10A ; V <sub>CE</sub> = 4V	10			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 1A; V <sub>CE</sub> = 15V, f <sub>test</sub> = 10MHz	8			MHz

**Switching Times**

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 10A ;I <sub>B1</sub> = 1.25A; V <sub>CC</sub> = 150V			1.0	μs
t <sub>s</sub>	Storage Time	I <sub>C</sub> = 10A ;I <sub>B1</sub> = -I <sub>B2</sub> = 1.25A; V <sub>CC</sub> = 150V			2.0	μs
t <sub>f</sub>	Fall Time				0.5	μs

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