

# isc Silicon NPN Power Transistor

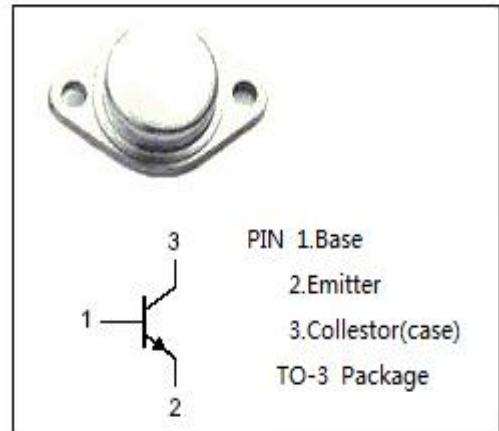
# BUX15

### DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 500(\text{Min.})$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

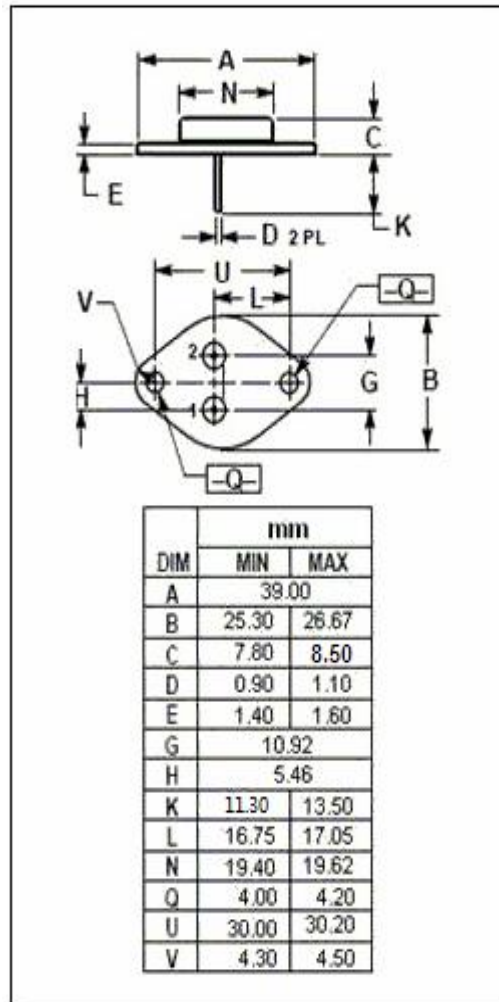
### APPLICATIONS

- Designed for use in off-line power supplies and is also well suited for use in a wide range of inverter or converter circuits and pulse-width-modulated regulators.



### Absolute maximum ratings( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	500	V
$V_{CEO}$	Collector-Emitter Voltage	500	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	8	A
$I_{CM}$	Collector Current-Peak	10	A
$I_B$	Base Current-Continuous	2	A
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	150	W
$T_j$	Junction Temperature	200	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~200	$^\circ\text{C}$



### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.17	$^\circ\text{C/W}$

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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50mA; I <sub>B</sub> = 0	500			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)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 0.4A			0.6	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 0.8A			1.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 0.8A			1.5	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 400V; I <sub>B</sub> = 0			1.5	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 500V; I <sub>E</sub> = 0 V <sub>CE</sub> = 500V; 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> = 2A; V <sub>CE</sub> = 4V	15		60	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 4A; V <sub>CE</sub> = 4V	8			
f <sub>T</sub>	Current-Gain—Bandwidth Product	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> = 4A; I <sub>B1</sub> = 0.8A; V <sub>CC</sub> = 150V			1.6	μs
t <sub>s</sub>	Storage Time	I <sub>C</sub> = 4A; I <sub>B1</sub> = -I <sub>B2</sub> = 0.8A; V <sub>CC</sub> = 150V			5.0	μs
t <sub>f</sub>	Fall Time				1.4	μs

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