

isc Silicon NPN Power Transistor

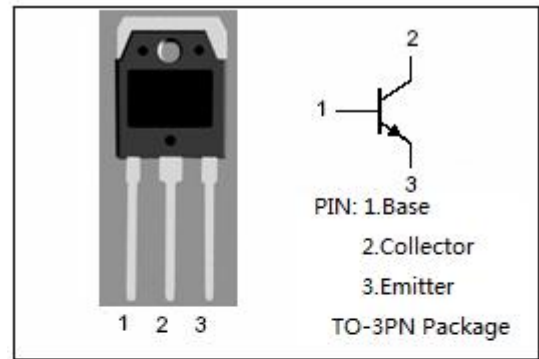
BUW13

DESCRIPTION

- High Voltage
- High Speed Switching
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

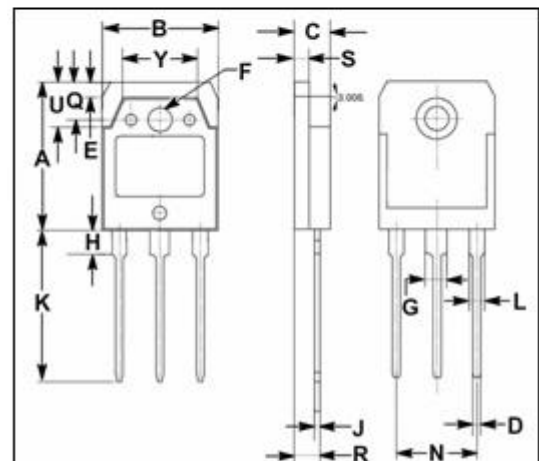
APPLICATIONS

- Converters
- Inverters
- Switching regulators
- Motor control systems



ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	850	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	30	A
I_B	Base Current	6	A
I_{BM}	Base Current-Peak	9	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	175	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	19.60	20.30
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.20
H	3.20	3.40
J	0.595	0.605
K	19.80	20.70
L	1.90	2.20
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.100
U	5.90	6.20
Y	9.90	10.10

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.7	$^\circ\text{C}/\text{W}$

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ELECTRICAL CHARACTERISTICS

 T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0	400			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 10A; I _B = 2A			1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 10A; I _B = 2A			1.6	V
I _{CES}	Collector Cutoff Current	V _{CE} = 850V; V _{BE} = 0 V _{CE} = 850V; V _{BE} = 0; T _C =125°C			1 4	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 9V; I _C = 0			10	mA
h _{FE-1}	DC Current Gain	I _C = 20mA ; V _{CE} = 5V	10		35	
h _{FE-2}	DC Current Gain	I _C = 1.5A ; V _{CE} = 5V	10		35	

Switching Times ;Resistive Load

t _{on}	Turn-on Time	I _C = 10A; I _{B1} = -I _{B2} = 2A			1.0	μs
t _s	Storage Time				4.0	μs
t _f	Fall Time				0.8	μs

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