

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistors

BUW64A/B

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 90V(\text{Min})$ - BUW64A
= $110V(\text{Min})$ - BUW64B
= $130V(\text{Min})$ - BUW64C
- High Switching Speed
- Low Saturation Voltage

APPLICATIONS

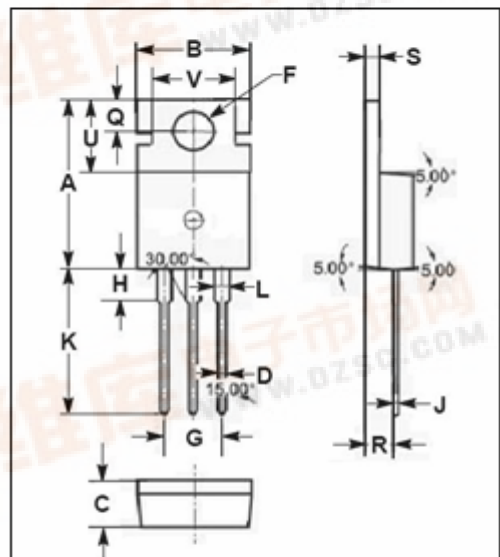
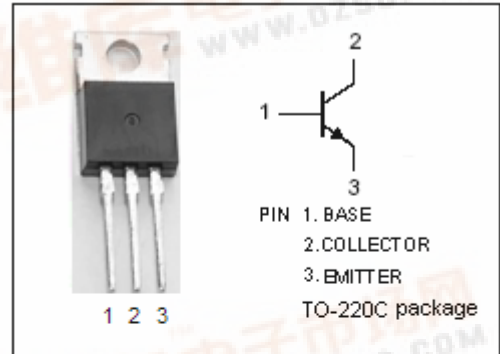
- Designed for converters, inverters, pulse-width-modulated regulators and a variety of power switching circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CEV}	Collector-Emitter Voltage $V_{BE} = -1.5V$	BUW64A	140
		BUW64B	160
		BUW64C	180
$V_{CEO(SUS)}$	Collector-Emitter Voltage	BUW64A	90
		BUW64B	110
		BUW64C	130
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	7	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	5	A
P_C	Collector Power Dissipation@ $T_C=25^\circ\text{C}$	50	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.5	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86



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ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BUW64A	$I_C=10\text{mA}; I_B=0$			V	
		BUW64B					
		BUW64C					
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	BUW64A/B	$I_C=5\text{A}; I_B=0.5\text{A}$		0.8	V	
		BUW64C					$I_C=4\text{A}; I_B=0.4\text{A}$
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=7\text{A}; I_B=0.7\text{A}$			0.8	V	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	BUW64A/B	$I_C=5\text{A}; I_B=0.5\text{A}$		1.4	V	
		BUW64C					$I_C=4\text{A}; I_B=0.4\text{A}$
I_{CEV}	Collector Cutoff Current	BUW64A	$V_{CE}=140\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=140\text{V}; V_{BE}=-1.5\text{V}, T_C=150^\circ\text{C}$		0.1 1.0	mA	
		BUW64B					$V_{CE}=160\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=160\text{V}; V_{BE}=-1.5\text{V}, T_C=150^\circ\text{C}$
		BUW64C					$V_{CE}=180\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=180\text{V}; V_{BE}=-1.5\text{V}, T_C=150^\circ\text{C}$
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$			0.1	mA	
h_{FE-1}	DC Current Gain	$I_C=0.2\text{A}; V_{CE}=2\text{V}$	30				
h_{FE-2}	DC Current Gain	BUW64A	$I_C=5\text{A}; V_{CE}=2\text{V}$		20		
		BUW64B					$I_C=4\text{A}; V_{CE}=2\text{V}$
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f=0.1\text{MHz}$	50		150	pF	
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}$	50			MHz	

Switching Times

t_d	Delay Time	$V_{CC}=70\text{V}; t_p=20\mu\text{s}$ For BUW64A/B $I_C=5\text{A}; I_{B1}=-I_{B2}=0.5\text{A}$ For BUW64C $I_C=4\text{A}; I_{B1}=-I_{B2}=0.4\text{A}$			0.1	μs
t_r	Rise Time				0.25	μs
t_{stg}	Storage Time				1.0	μs
t_f	Fall Time				0.5	μs