



## Features

- NPN transistor
- High voltage capability
- High current capability
- Fast switching speed

## Applications

Switch mode power supplies

Fly back and forward single transistor low power converters

## Absolute Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-Emitter Voltage ( $R_{BE} = 10 \Omega$ )	$V_{CER}$	1,000	V
Collector-Emitter Voltage ( $V_{BE} = 0$ )	$V_{CES}$		
Collector-Emitter Voltage ( $I_B = 0$ )	$V_{CEO}$		
Emitter-Base Voltage ( $I_C = 0$ )	$V_{EBO}$	7	
Collector Current	$I_C$	15	A
Collector Peak Current	$I_{CM}$	30	
Collector Peak Current Non Repetitive ( $t_P < 20\mu s$ )	$I_{CP}$	55	
Base Current	$I_B$	4	
Base Peak Current	$I_{BM}$	20	
Total Dissipation at $T_C = 25^\circ C$	$P_{TOT}$	175	W
Storage Temperature	$T_{STG}$	-65 to +200	$^\circ C$
Maximum Operating Junction Temperature	$T_J$	200	

## Thermal Data

Maximum Thermal Resistance Junction-Case	$R_{THJ-CASE}$	1	$^\circ C / W$
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## Electrical Characteristics ( $T_{CASE} = 25^\circ C$ unless otherwise specified)

Parameter	Test Conditions	Symbol	Min.	Max.	Unit
Collector Cut-off Current ( $V_{BE} = 0$ )	$V_{CE} = \text{rated } V_{CES}$ $V_{CE} = \text{rated } V_{CES}, T_C = 125^\circ C$	$I_{CES}$	-	200 2	$\mu A$ mA
Collector Cut-off Current ( $R_{BE} = 10$ )	$V_{CE} = \text{rated } V_{CER}$ $V_{CE} = \text{rated } V_{CER}, T_C = 125^\circ C$	$I_{CER}$	-	500 4	$\mu A$ mA
Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5V$	$I_{EBO}$	-	1	mA
Collector-Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 200mA$ $L = 25mH$ BUX48A	$V_{CEO} (sus)^*$	450	-	V
Emitter-Base Voltage ( $I_C = 0$ )	$I_E = 50mA$	$V_{EBO}$	7	30	
Collector-Emitter Saturation Voltage	$I_C = 8A$ $I_B = 1.6A$ BUX48A $I_C = 12A$ $I_B = 2.4A$	$V_{CE} (sat)^*$	-	1.5 5	
Base-Emitter Saturation Voltage	$I_C = 8A$ $I_B = 1.6A$ BUX48A	$V_{BE} (sat)^*$	-	1.6	

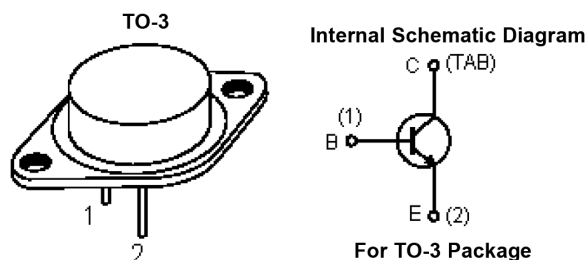
\*Pulsed : Pulse duration = 300 $\mu s$ , duty cycle  $\leq 2\%$

## Resistive Switching Times

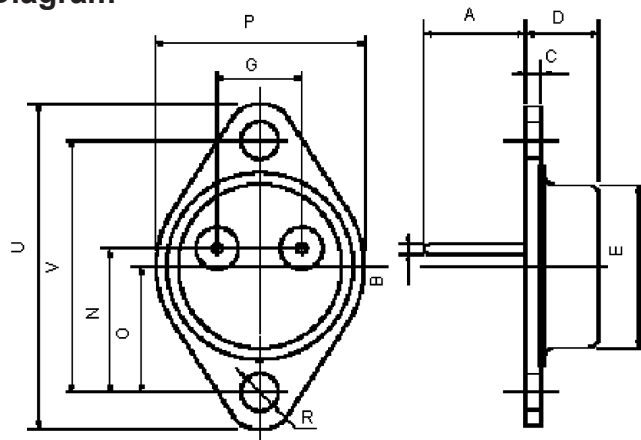
Parameter	Test Conditions	Symbol	Min.	Max.	Unit
Turn-on Time	$V_{CC} = 150V$ $I_C = 8A$ BUX48A $I_{B1} = 1.6A$	$t_{on}$	-	1	$\mu s$
Storage Time	$V_{CC} = 150V$ $I_C = 8A$ BUX48A $I_{B1} = -I_{B2} = 1.6A$	$t_s$	-	3	
Fall Time	$V_{CC} = 150V$ $I_C = 8A$ BUX48A $I_{B1} = -I_{B2} = 1.6A$	$t_f$	-	0.8	

## Inductive Switching Times

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Storage Time	$V_{CC} = 300V$ $I_C = 8A$ BUX48A $L_B = 3\mu H$ $V_{BE} = -5V$ $I_{B1} = 1.6A$ Same Conditions at $T_c = 125^\circ C$	$t_s$	-	3	5	$\mu s$
Fall Time	$V_{CC} = 300V$ $I_C = 8A$ BUX48A $L_B = 3\mu H$ $V_{BE} = -5V$ $I_{B1} = 1.6A$ Same Conditions at $T_c = 125^\circ C$	$t_f$	-	0.13	0.4	



## Diagram



Dimensions	Minimum	Maximum
A	11 (0.433)	13.1 (0.516)
B	0.97 (0.038)	1.15 (0.045)
C	1.5 (0.59)	1.65 (0.065)
D	8.32 (0.327)	8.92 (0.351)
E	19 (0.748)	20 (0.787)
G	10.7 (0.421)	11.1 (0.437)
N	16.5 (0.649)	17.2 (0.677)
P	25 (0.984)	26 (1.023)
R	4 (0.157)	4.09 (0.161)
U	38.5 (1.515)	39.3 (1.547)
V	30 (1.187)	30.3 (1.193)

Dimensions : Millimetres (Inches)

## Part Number Table

Description	Part Number
Transistor, NPN, TO-3	BUX48A

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