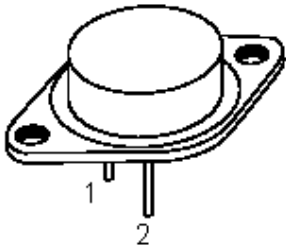




TO-3



High power NPN silicon transistors.

Features:

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

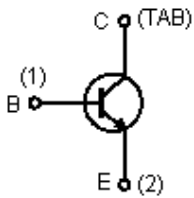
Applications:

Switch mode power supplies.
Flyback and forward single transistor low power converters.

Description:

The BUV48A are silicon Multiepitaxial Mesa NPN transistors mounted respectively in TO-3 fully isolated package. They are particularly intended for switching and industrial applications from single and three-phase mains.

Internal Schematic Diagram



For TO-3 Package

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage ($R_{BE} = 10\Omega$)	V_{CER}	1000	V
Collector-Emitter Voltage ($V_{BE} = 0$)	V_{CES}		
Collector-Emitter Voltage ($I_B = 0$)	V_{CEO}	450	
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	Minimum	Maximum	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	μA mA
Collector Cut-off Current ($R_{BE} = 10\Omega$)	$V_{CE} = \text{rated}$ V_{CER} $V_{CE} = \text{rated}$ $V_{CER}, T_C = 125^{\circ}C$	I_{CER}	-	500 4	μA 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	

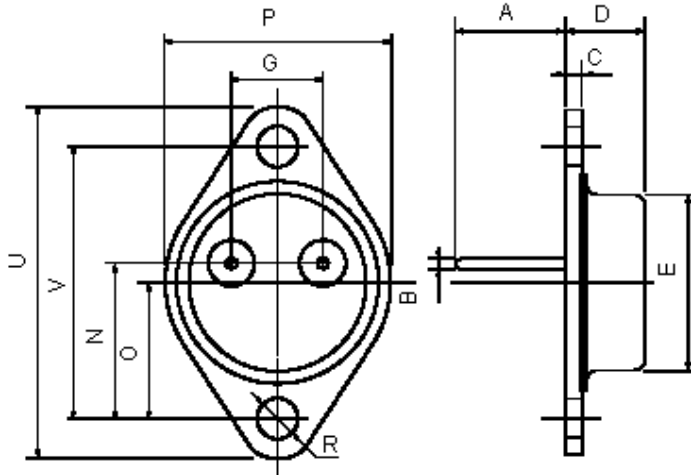
*Pulsed: Pulse Duration = 300 μs , Duty Cycle $\leq 2\%$

Resistive Switching Times

Parameter	Test Conditions	Symbol	Minimum	Maximum	Unit
Turn-on Time	$V_{CC} = 150V$ $I_C = 8A$ BUX48A $I_{B1} = 1.6A$	t_{on}	-	1	μs
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	Minimum	Typical	Maximum	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	μs
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	



TO-3 Mechanical Data

Dimensions	Minimum	Maximum
A	11.00 (0.433)	13.10 (0.516)
B	0.97 (0.038)	1.15 (0.045)
C	1.50 (0.59)	1.65 (0.065)
D	8.32 (0.327)	8.92 (0.351)
E	19.00 (0.748)	20.00 (0.787)
G	10.70 (0.421)	11.10 (0.437)
N	16.50 (0.649)	17.20 (0.677)
P	25.00 (0.984)	26.00 (1.023)
R	4.00 (0.157)	4.09 (0.161)
U	38.50 (1.515)	39.30 (1.547)
V	30.00 (1.187)	30.30 (1.193)

Dimensions : Inches (Millimetres)

Part Number Table

Description	Part Number
Transistor, NPN, TO-3	BUX48A

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