



BUV46
BUV46A

HIGH VOLTAGE NPN SILICON POWER TRANSISTORS

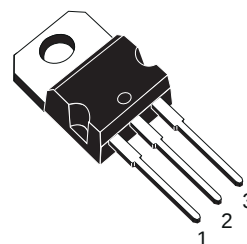
- STMicroelectronics PREFERRED SALESTYPES
- NPN TRANSISTORS
- HIGH VOLTAGE CAPABILITY
- MINIMUM LOT-TO-LOT SPREAD FOR RELIABLE OPERATION
- FAST SWITCHING SPEED

APPLICATIONS

- GENERAL PURPOSE SWITCHING
- SWITCH MODE POWER SUPPLIES
- ELECTRONIC BALLASTS FOR FLUORESCENT LIGHTING

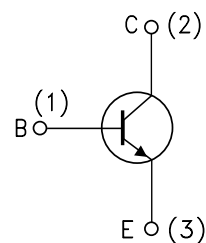
DESCRIPTION

The devices are silicon Multiepitaxial Mesa NPN transistors in the Jedec TO-220 plastic package intended for high voltage, fast switching applications.



TO-220

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BUV46	BUV46A	
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)	850	1000	V
V_{CEX}	Collector-Emitter Voltage ($V_{BE} = -2.5V$)	850	1000	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	400	450	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7		V
I_C	Collector Current	5		A
I_B	Base Current	3		A
P_{tot}	Total Dissipation at $T_c = 25\text{ }^{\circ}\text{C}$	70		W
T_{stg}	Storage Temperature	-65 to 150		$^{\circ}\text{C}$
T_j	Max. Operating Junction Temperature	150		$^{\circ}\text{C}$

BUV46 / BUV46A

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-Case	Max	1.76	°C/W
-----------------------	----------------------------------	-----	------	------

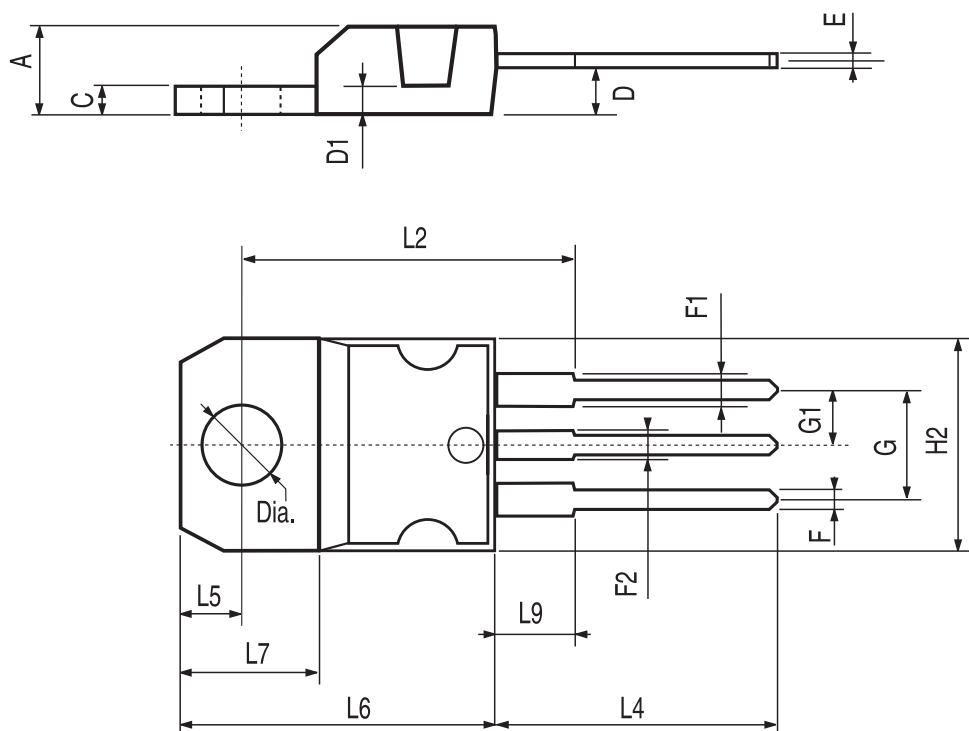
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CER}	Collector Cut-off Current (R _{BE} = 10Ω)	V _{CE} = V _{CEX} V _{CE} = V _{CEX} T _C = 125 °C			0.1 1	mA mA
I _{CEX}	Collector Cut-off Current	V _{CE} = V _{CEX} V _{BE} = -2.5 V V _{CE} = V _{CEX} V _{BE} = -2.5 V T _C = 125 °C			0.3 2	mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{BE} = 7 V			1	mA
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage	I _C = 100 mA for BUV46 for BUV46A	400 450			V V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	for BUV46 I _C = 2.5 A I _B = 0.5 A I _C = 3.5 A I _B = 0.7 A for BUV46A I _C = 2 A I _B = 0.4 A I _C = 3 A I _B = 0.6 A			1.5 5 1.5 5	V V V V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	for BUV46 I _C = 2.5 A I _B = 0.5 A for BUV46A I _C = 2 A I _B = 0.4 A			1.3 1.3	V V
t _{on} t _s t _f	RESISTIVE LOAD Turn-on Time Storage Time Fall Time	for BUV46 I _C = 2.5 A V _{CC} = 150 V I _{B1} = - I _{B2} = 0.5 A			1 3 0.8	μs μs μs
t _{on} t _s t _f	RESISTIVE LOAD Turn-on Time Storage Time Fall Time	for BUV46A I _C = 2 A V _{CC} = 150 V I _{B1} = - I _{B2} = 0.4 A			1 3 0.8	μs μs μs

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



P011C

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics

© 1998 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Italy - Japan - Korea - Malaysia - Malta - Mexico - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.

<http://www.st.com>