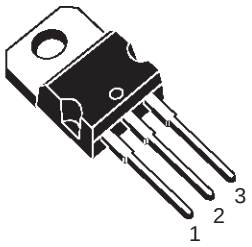
BUV46
BUV46A

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

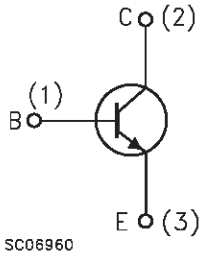
APPLICATIONS
- GENERAL PURPOSE SWITCHING
- SWITCH MODE POWER SUPPLIES
- ELECTRONIC BALLASTS FOR FLUORESCENT LIGHTING

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 Tc = 25 °C	70		W
T_{stg}	Storage Temperature	-65 to 150		°C
T_j	Max. Operating Junction Temperature	150		°C

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-Case	Max	1.76	°C/W

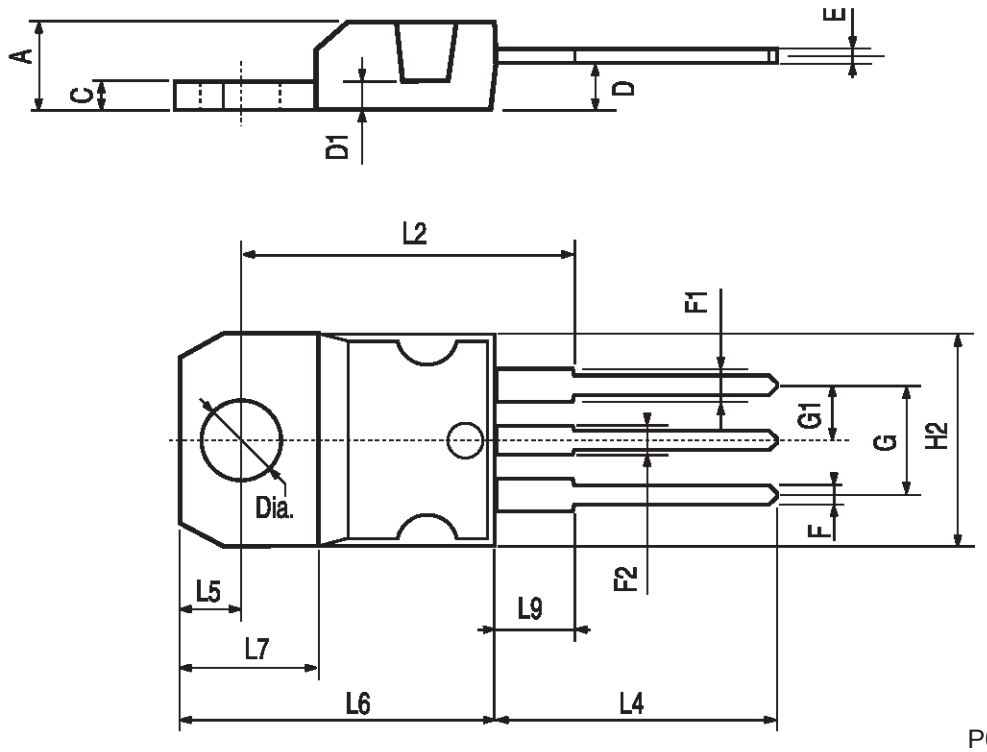
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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