

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

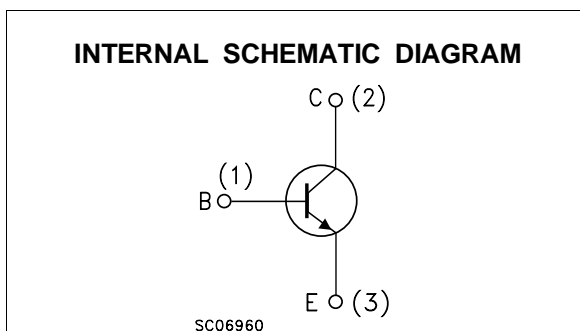
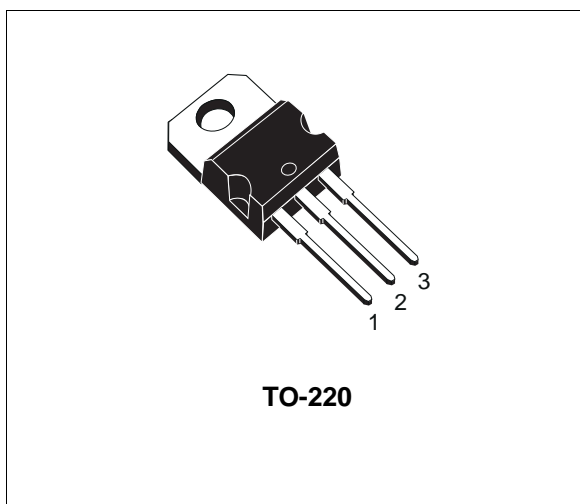
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS:

- FLYBACK AND FORWARD SINGLE TRANSISTOR LOW POWER CONVERTERS

DESCRIPTION

The BUT11A is a silicon multiepitaxial mesa NPN transistor in Jedec TO-220 plastic package, particularly intended for switching application.


ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0\text{ V}$)	1000	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	450	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	9	V
I_C	Collector Current	5	A
I_{CM}	Collector Peak Current	10	A
I_B	Base Current	2	A
I_{BM}	Base Peak Current	4	A
P_{tot}	Total Power Dissipation at $T_c \leq 25\text{ }^\circ\text{C}$	83	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150	$^\circ\text{C}$

BUT11A

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.5	$^{\circ}C/W$
----------------	----------------------------------	-----	-----	---------------

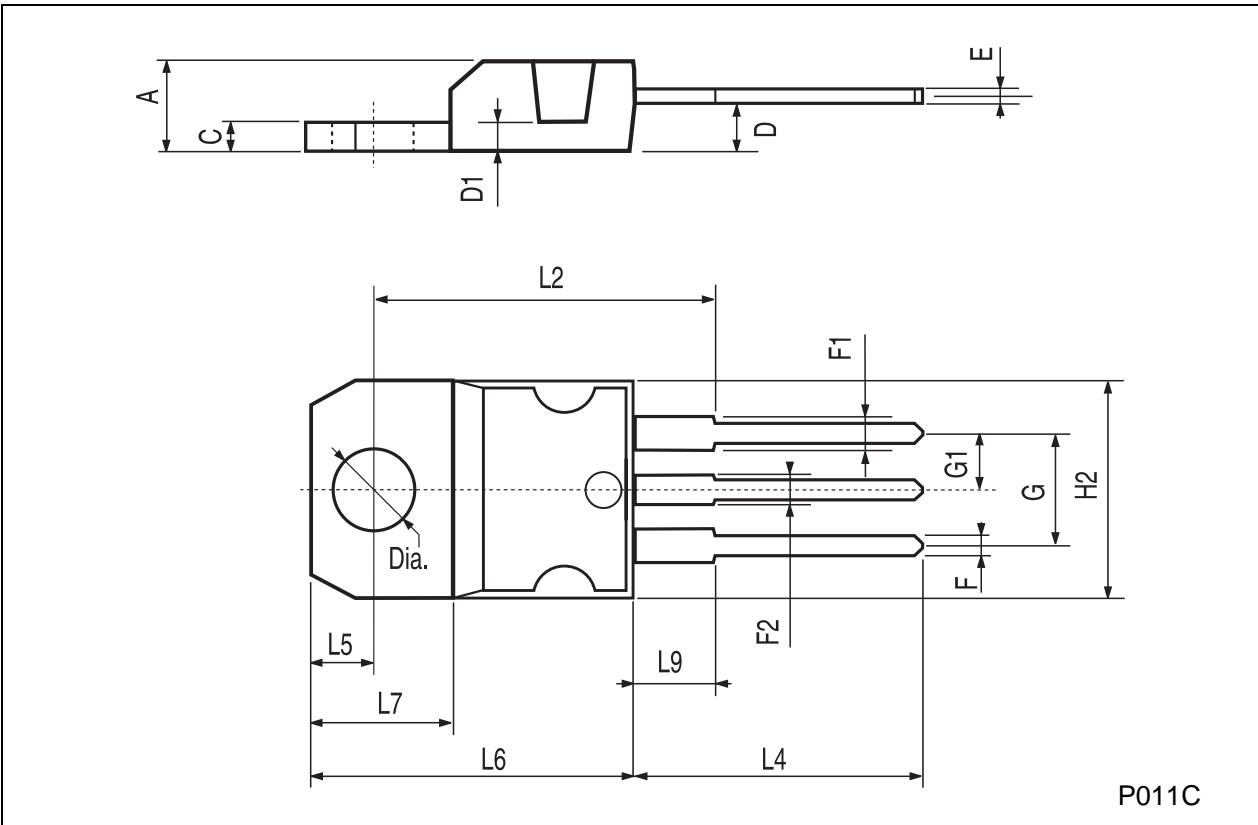
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = \text{rated } V_{CES}$ at $T_{case} = 125^{\circ}C$			1 2	mA mA
I_{EBO}	Emitter Cut-off Current	$I_C = 0$ $V_{BE} = 9 V$			10	mA
$V_{CEO(sus)*}$	Collector-emitter Sustaining Voltage	$I_{B(off)} = 0$ $I_C = 100 mA$	450			V
$V_{CE(sat)*}$	Collector-emitter Saturation Voltage	$I_C = 2.5 A$ $I_B = 0.5 A$			1.5	V
$V_{BE(sat)*}$	Base-emitter Saturation Voltage	$I_C = 2.5 A$ $I_B = 0.5 A$			1.3	V
t_{on}	Turn on Time	$I_C = 2.5 A$ $V_{CC} = 250 V$			1	μs
t_s	Storage Time	$I_B = I_{B2} = 0.5 A$			4	μs
t_f	Fall Time				0.8	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



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics 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 SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

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

...