

HIGH CURRENT NPN SILICON TRANSISTOR

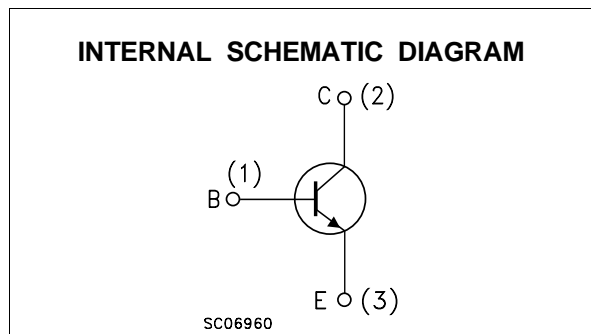
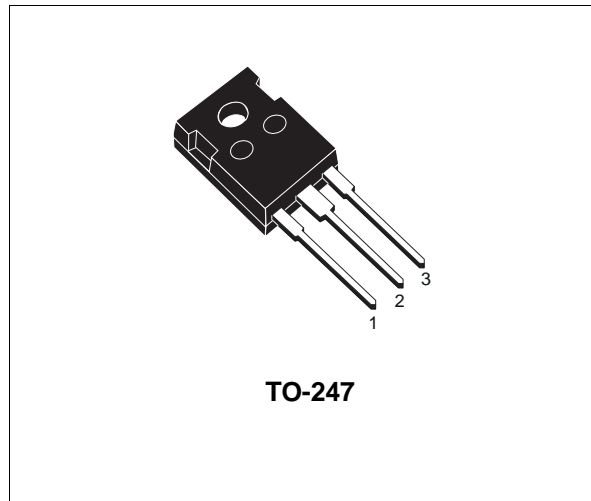
- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR

APPLICATIONS:

- MOTOR CONTROL
- HIGH FREQUENCY AND EFFICIENCY CONVERTERS

DESCRIPTION

High current, high speed transistor suited for power conversion applications, high efficiency converters and motor controls.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)	500	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	250	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7	V
I_E	Emitter-Current	60	A
I_{EM}	Emitter Peak Current ($t_p < 5\text{ms}$)	70	A
I_B	Base Current	15	A
I_{BM}	Base Peak Current ($t_p < 5\text{ms}$)	18	A
P_{tot}	Total Dissipation at $T_c \leq 25^\circ\text{C}$	180	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150	$^\circ\text{C}$

BUTW92

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	MAX	0.7	°C/W
-----------------------	----------------------------------	-----	-----	------

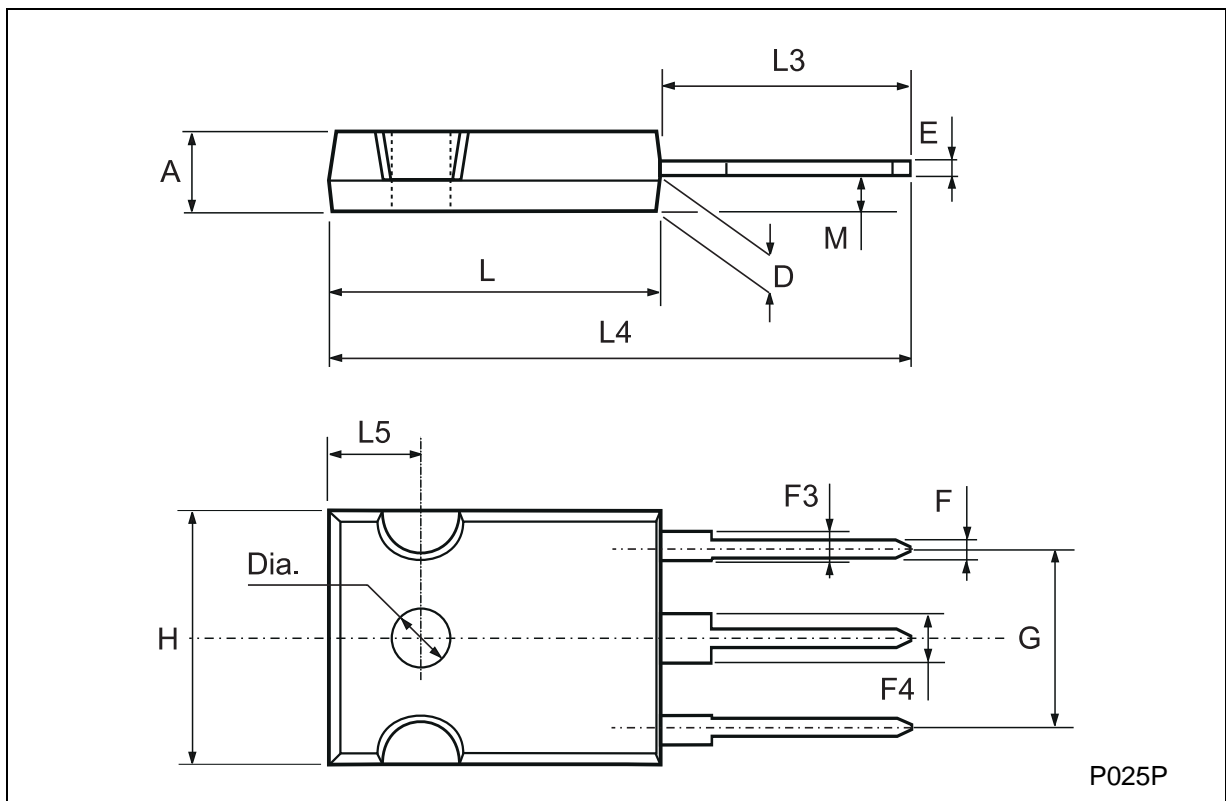
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CES}	Collector Cut-off Current (V _{BE} = -1.5V)	V _{CE} = 450 V V _{CE} = 450 V T _C = 100°C			50 1	μA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			50	μA
V _{CES}	Collector-Emitter Voltage (V _{EB} = 0)	I _C = 5 mA	500			V
V _{EBO}	Emitter-Base Voltage (I _C = 0)	I _E = 50 mA	7			V
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 200 mA	250			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 60 A I _B = 15 A I _C = 60 A I _B = 15 A T _C = 100°C		0.8 1.1	1 1.5	V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 60 A I _B = 15 A I _C = 60 A I _B = 15 A T _C = 100°C			1.9 2	V V
h _{FE*}	DC Current Gain	I _C = 60 A V _{CE} = 3 V I _C = 60 A V _{CE} = 3 V T _C = 100°C I _C = 5 A V _{CE} = 3 V	9 6		65	
t _s t _f	RESISTIVE LOAD Storage Time Fall Time	I _C = 50 A V _{CC} = 250 V I _{B1} = -I _{B2} = 10 A		1.2 250	1.4 300	μs ns

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

TO-247 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.7		5.3	0.185		0.209
D	2.2		2.6	0.087		0.102
E	0.4		0.8	0.016		0.031
F	1		1.4	0.039		0.055
F3	2		2.4	0.079		0.094
F4	3		3.4	0.118		0.134
G		10.9			0.429	
H	15.3		15.9	0.602		0.626
L	19.7		20.3	0.776		0.779
L3	14.2		14.8	0.559		0.582
L4		34.6			1.362	
L5		5.5			0.217	
M	2		3	0.079		0.118



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 trademark of STMicroelectronics

© 2001 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - China - Finland - France - Germany - Hong Kong - India - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - U.S.A.

<http://www.st.com>