

## HIGH CURRENT NPN SILICON TRANSISTOR

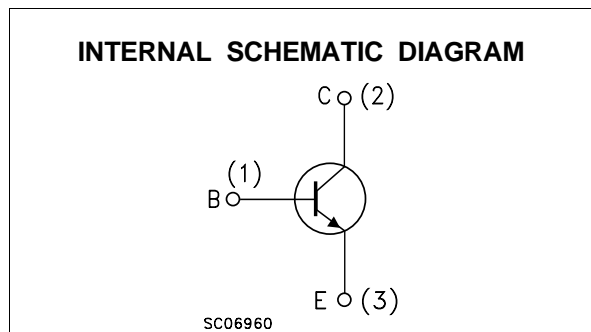
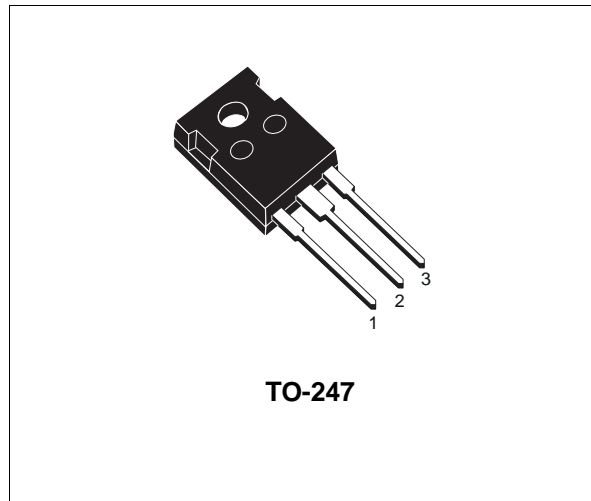
- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR

### 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 ( $t_p < 5ms$ )	70	A
$I_B$	Base Current	15	A
$I_{BM}$	Base Peak Current ( $t_p < 5ms$ )	18	A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ C$	180	W
$T_{stg}$	Storage Temperature	-65 to 150	$^\circ C$
$T_j$	Max. Operating Junction Temperature	150	$^\circ C$

## BUTW92

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	MAX	0.7	°C/W
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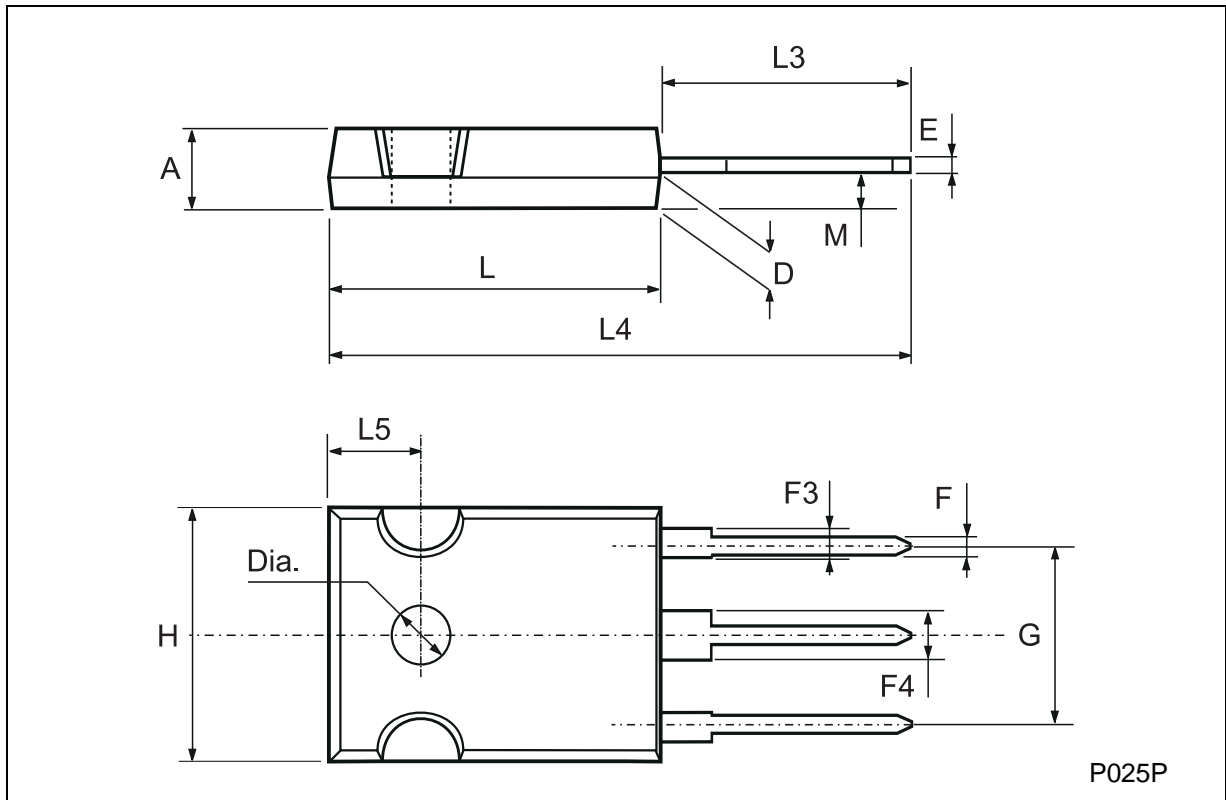
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	V <sub>CE</sub> = 450 V V <sub>CE</sub> = 450 V T <sub>C</sub> = 100°C			50 1	μA mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			50	μA
V <sub>CES</sub>	Collector-Emitter Voltage (V <sub>EB</sub> = 0)	I <sub>C</sub> = 5 mA	500			V
V <sub>EBO</sub>	Emitter-Base Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = 50 mA	7			V
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 200 mA	250			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 60 A I <sub>B</sub> = 15 A I <sub>C</sub> = 60 A I <sub>B</sub> = 15 A T <sub>C</sub> = 100°C		0.8 1.1	1 1.5	V V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 60 A I <sub>B</sub> = 15 A I <sub>C</sub> = 60 A I <sub>B</sub> = 15 A T <sub>C</sub> = 100°C			1.9 2	V V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 60 A V <sub>CE</sub> = 3 V I <sub>C</sub> = 60 A V <sub>CE</sub> = 3 V T <sub>C</sub> = 100°C I <sub>C</sub> = 5 A V <sub>CE</sub> = 3 V	9 6		65	
t <sub>s</sub> t <sub>f</sub>	RESISTIVE LOAD Storage Time Fall Time	I <sub>C</sub> = 50 A V <sub>CC</sub> = 250 V I <sub>B1</sub> = -I <sub>B2</sub> = 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



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